

HORTICULTURE, B.S.

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 (<http://guide.wisc.edu/undergraduate/#requirementsforundergraduatestudytext>) section of the *Guide*.

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| General Education | <ul style="list-style-type: none"> • 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 * |
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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 B.S. 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 (http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#requirements)	1

International Studies (http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#requirements)	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") (http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#requirements)	

MAJOR REQUIREMENTS

Courses may not double count within the major (unless specifically noted otherwise), but courses counted toward the major requirements may also be used to satisfy a university requirement and/or a college requirement. A minimum of 15 credits must be completed in the major that are not used elsewhere.

Code	Title	Credits
Mathematics and Statistics		
Select one of the following (or may be satisfied by placement exam):		5-6
MATH 112 Algebra		
& MATH 113 and Trigonometry		
MATH 114 Algebra and Trigonometry		
MATH 171 Calculus with Algebra and Trigonometry I ¹		
Select one of the following:		3-5
MATH 211 Calculus		
MATH 217 Calculus with Algebra and Trigonometry II ¹		
MATH 221 Calculus and Analytic Geometry 1		
MATH 222 Calculus and Analytic Geometry 2		
STAT 301 Introduction to Statistical Methods		
STAT 371 Introductory Applied Statistics for the Life Sciences		
COMP SCI 300 Programming II		
Chemistry		
Select one of the following:		5-9
CHEM 103 General Chemistry I		
& CHEM 104 and General Chemistry II		
CHEM 109 Advanced General Chemistry		
Biology		
Select one of the following options:		10-12
Option 1:		
BOTANY/ BIOLOGY 130	General Botany	
ZOOLOGY/ BIOLOGY 101	Animal Biology	
ZOOLOGY/ BIOLOGY 102	Animal Biology Laboratory	

Option 2:

BIOLOGY/
BOTANY/
ZOOLOGY 151

Introductory Biology

BIOLOGY/
BOTANY/
ZOOLOGY 152

Introductory Biology

Option 3:

BIOCORE 381 Evolution, Ecology, and Genetics

BIOCORE 383 Cellular Biology

And select two of the following:

BIOCORE 382 Evolution, Ecology, and Genetics
Laboratory

BIOCORE 384 Cellular Biology Laboratory

BIOCORE 486 Principles of Physiology Laboratory

Agricultural Breadth

ENTOM/
ZOOLOGY 302 Introduction to Entomology 3-4

or ENTOM 351 Principles of Economic Entomology

GENETICS 466 Principles of Genetics 3

Select one of the following: 3-4

BOTANY 300 Plant Anatomy

BOTANY 305 Plant Morphology and Evolution

BOTANY 500 Plant Physiology

PL PATH 300 Introduction to Plant Pathology 3-4

or PL PATH/
F&W ECOL/HORT/
LAND ARC 309 Diseases of Trees and Shrubs

SOIL SCI 301 General Soil Science 4

Horticultural Core

HORT 120 Survey of Horticulture 3

HORT 121 Horticulture Colloquium 1

HORT 227 Propagation of Horticultural Plants 3

HORT 320 Environment of Horticultural Plants 3

HORT/AGRONOMY/
SOIL SCI 326 Plant Nutrition Management 3

Select one of the following: 3

HORT 334 Greenhouse Cultivation
& HORT 335 and Greenhouse Cultivation Lab

HORT 375 Special Topics (Organic Vegetable
Production)²

Select three of the following: 9

HORT 234 Ornamental Plants

HORT/
PL PATH 261 Sustainable Turfgrass Use and
& HORT/
PL PATH 262 Management
Laboratory

HORT 375 Special Topics (Arboriculture and
Landscape Maintenance)

or HORT/
LAND ARC 263 Landscape Plants I

HORT 345 Fruit Crop Production (alternate
years)²

HORT 370 World Vegetable Crops

Electives

Select 5 elective credits (see list below) 5

Capstone

Students can complete a pre-approved course or an independent study or internship. Independent study and internship require individual pre-approval from the program, and students should talk to the Horticulture advisor to learn more about the process and forms.

Pre-approved course options:

HORT/
AGRONOMY 376 Tropical Horticultural Systems
& HORT 378 and Tropical Horticultural Systems
International Field Study

PL PATH 315 Plant Microbiomes

Independent Study or Internship options (require individual pre-approval):

HORT 399 Coordinative Internship/Cooperative
Education

HORT 699 Special Problems

PL PATH 499 Independent Study in Organic
Agriculture

Total Credits 69-81

1

If MATH 171 is taken, MATH 217 must also be taken.

2

Alternate years.

ELECTIVE COURSES

Students may not double count courses within the major requirements (Agricultural Breadth, Horticultural Core, Electives, Capstone)

Code	Title	Credits
Business and Economics		
A A E 215	Introduction to Agricultural and Applied Economics	4
A A E/ENVIR ST 244	The Environment and the Global Economy	4
A A E 246	Climate Change Economics and Policy	3
A A E 319	The International Agricultural Economy	3
A A E 320	Agricultural Systems Management	3
A A E 323	Cooperatives and Alternative Forms of Enterprise Ownership	3
A A E/ECON/ ENVIR ST 343	Environmental Economics	3-4
GEN BUS 310	Fundamentals of Accounting and Finance for Non-Business Majors	3
GEN BUS 311	Fundamentals of Management and Marketing for Non-Business Majors	3
Ecology, Conservation, and the Environment		
BOTANY/F&W ECOL/ ZOOLOGY 460	General Ecology	4
F&W ECOL/C&E SOC/ SOC 248	Environment, Natural Resources, and Society	3
F&W ECOL/ ENVIR ST/ ZOOLOGY 360	Extinction of Species	3

F&W ECOL/ BOTANY 455	The Vegetation of Wisconsin	4	PL PATH 375	Special Topics	1-4
F&W ECOL 550	Forest Ecology	3	Landscape Horticulture		
F&W ECOL/ LAND ARC/ ZOOLOGY 565	Principles of Landscape Ecology	2	BSE 243	Operating and Management Principles of Off-Road Vehicles	3
F&W ECOL/ BOTANY/ENVIR ST/ ZOOLOGY 651	Conservation Biology	3	BSE 301	Land Information Management	3
GEOG/ENVIR ST 120	Introduction to the Earth System	3	F&W ECOL 375	Special Topics (Tree Risk Assessment and Decay Detection)	1-4
GEOG/ENVIR ST 127	Physical Systems of the Environment	5	HORT 234	Ornamental Plants	3
GEOG/ENVIR ST 139	Global Environmental Issues	3	HORT/PL PATH 261	Sustainable Turfgrass Use and Management	2
GEOG/BOTANY 338	Environmental Biogeography	3	HORT/PL PATH 262	Turfgrass Management Laboratory	1
GEOG/ENVIR ST 339	Environmental Conservation	4	HORT/ LAND ARC 263	Landscape Plants I	3
GEOSCI/ ENVIR ST 106	Environmental Geology	3	HORT/SOIL SCI 332	Turfgrass Nutrient and Water Management	3
HISTORY/ENVIR ST/ GEOG 460	American Environmental History	4	HORT 334	Greenhouse Cultivation	2
LAND ARC/ ENVIR ST 361	Wetlands Ecology	3	HORT 335	Greenhouse Cultivation Lab	1
ZOOLOGY/ ENVIR ST 315	Limnology-Conservation of Aquatic Resources	2	HORT 375	Special Topics (Arboriculture and Landscape Maintenance)	1-4
ZOOLOGY 316	Laboratory for Limnology- Conservation of Aquatic Resources	2-3	LAND ARC 250	Survey of Landscape Architecture Design	3
Food, Health and Human Well-being:			LAND ARC 260	History of Landscape Architecture	3
A A E/C&E SOC/ SOC 340	Issues in Food Systems	3-4	LAND ARC 211	Shaping the Built Environment	3
AGRONOMY/ ENTOM/ NUTR SCI 203	Introduction to Global Health	3	Pest Management		
AGRONOMY 300	Cropping Systems	3	ENTOM/BOTANY/ ZOOLOGY 473	Plant-Insect Interactions	3
AGRONOMY/A A E/ NUTR SCI 350	World Hunger and Malnutrition	3	ENTOM/ F&W ECOL 500	Insects in Forest Ecosystem Function and Management	2
AGRONOMY 377	Global Food Production and Health	3	PL PATH/ BOTANY 332	Fungi	4
C&E SOC/SOC 222	Food, Culture, and Society	3	Plant Biology		
C&E SOC/SOC 650	Sociology of Agriculture	3	BOTANY 300	Plant Anatomy	4
FOOD SCI/ AN SCI 321	Food Laws and Regulations	1	BOTANY 305	Plant Morphology and Evolution	4
GEOG/ENVIR ST 309	People, Land and Food: Comparative Study of Agriculture Systems	3	BOTANY 400	Plant Systematics	4
HORT 345	Fruit Crop Production	3	BOTANY 401	Vascular Flora of Wisconsin	4
HORT 350	Plants and Human Wellbeing	2	BOTANY/ANTHRO/ ZOOLOGY 410	Evolutionary Biology	3
HORT/A A E/ AGRONOMY/ PL PATH 367	Introduction to Organic Agriculture: Production, Markets, and Policy	3	BOTANY 422	Plant Geography	3
HORT 370	World Vegetable Crops	3	BOTANY/AMER IND/ ANTHRO 474	Ethnobotany	3-4
HORT 375	Special Topics (Organic Vegetable Production)	3	BOTANY 500	Plant Physiology	3-4
HORT 380	Indigenous Foodways: Food and Seed Sovereignty	2	F&W ECOL 415	Tree Physiology	3
NUTR SCI 132	Nutrition Today	3	HORT 375	Special Topics (The Science of Hemp)	1
PL PATH 311	Global Food Security (Food Systems, Sustainability, and Climate Change)	3	Plant Breeding, Genetics, and Biotechnology		
			AGRONOMY/ C&E SOC/MED HIST/ PHILOS 565	The Ethics of Modern Biotechnology	3
			BIOCHEM 501	Introduction to Biochemistry	3
			CHEM 341	Elementary Organic Chemistry	3
			CHEM 342	Elementary Organic Chemistry Laboratory	1
			CHEM 343	Organic Chemistry I	3
			HORT/ AGRONOMY 338	Plant Breeding and Biotechnology	3

HORT/AGRONOMY/ BOTANY 339	Plant Biotechnology: Principles and Techniques I	4
HORT/AGRONOMY/ BOTANY 340	Plant Cell Culture and Genetic Engineering	3
HORT/ AGRONOMY 360	Genetically Modified Crops: Science, Regulation & Controversy	2
HORT 375	Special Topics (Epigenetics)	1-4
HORT/ AGRONOMY 501	Principles of Plant Breeding	3
HORT/ AGRONOMY 502	Techniques of Plant Breeding	1
HORT/ GENETICS 550	Molecular Approaches for Potential Crop Improvement	3
HIST SCI 202	The Making of Modern Science	3
Public Policy and Environmental Ethics		
C&E SOC/SOC 541	Environmental Stewardship and Social Justice	3
ENVIR ST/GEOG 439	US Environmental Policy and Regulation	3-4
ENVIR ST/ SOIL SCI 575	Assessment of Environmental Impact	3
POLI SCI 272	Introduction to Public Policy	3-4
POLI SCI/ECON/ ENVIR ST/ URB R PL 449	Government and Natural Resources	3-4
Soil Science		
SOIL SCI 305	Field Study of Soil	1
SOIL SCI 321	Soils and Environmental Chemistry	3
SOIL SCI 322	Physical Principles of Soil and Water Management	3
SOIL SCI/ PL PATH 323	Soil Biology	3
SOIL SCI/ ENVIR ST 324	Soils and Environmental Quality	3
SOIL SCI/ ENVIR ST 575	Assessment of Environmental Impact	3
Weather and Climate Change		
ATM OCN 101	Weather and Climate	4
ATM OCN/ENVIR ST/ GEOSCI 102	Climate and Climate Change	3
ATM OCN/ ENVIR ST 171	Global Change: Atmospheric Issues and Problems	2-3
ATM OCN/ENVIR ST/ GEOG 332	Global Warming: Science and Impacts	3
ATM OCN/ ENVIR ST 520	Bioclimatology	3

HONORS IN THE MAJOR

Students admitted to the university and to the College of Agricultural and Life Sciences are invited to apply to be considered for admission to the CALS Honors Program.

Admission Criteria for New First-Year Students:

- Complete program application including essay questions

Admission Criteria for Transfer and Continuing UW-Madison Students:

- UW-Madison cumulative GPA of at least 3.25
- Complete program application including essay questions

HOW TO APPLY

The application is available on the CALS Honors Program website (<https://cals.wisc.edu/academics/undergraduate-students/outside-the-classroom/honors-program/>). Applications are accepted at any time.

New first-year students with accepted applications will automatically be enrolled in Honors in Research. It is possible to switch to Honors in the Major in the student's first semester on campus after receiving approval from the advisor for that major. Transfer and continuing students may apply directly to Honors in Research or Honors in the Major (after approval from the major advisor).

REQUIREMENTS

All CALS Honors programs have the following requirements:

- Earn at least a cumulative 3.25 GPA at UW-Madison (some programs have higher requirements)
- Complete the program-specific requirements listed below
- Submit completed thesis documentation to CALS Academic Affairs

REQUIREMENTS

To earn Honors in the Major, students are required to take at least 20 honors credits. In addition, students must take HORT 289 Honors Independent Study, HORT 681 Senior Honors Thesis and HORT 682 Senior Honors Thesis when completing their thesis project; please see the Honors in Major Checklist for Horticulture (<http://www.cals.wisc.edu/academics/undergraduate-programs/get-involved/honors-program/honors-in-the-major/>) for more information. The Department of Horticulture also works collaboratively to strongly support students through the Honors in Research program.

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.