### UNIVERSE 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/ #requirementsforundergraduatetext) 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 B.S. DEGREE PROGRAMS

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>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.</td>
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<tr>
<td>Residency: Students must complete 30 degree credits in residence at UW–Madison after earning 86 credits toward their undergraduate degree.</td>
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</tr>
<tr>
<td>First Year Seminar (<a href="http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#requirementstext">http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#requirementstext</a>)</td>
<td>1</td>
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</table>
### Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOIL SCI 301</td>
<td>General Soil Science</td>
<td>4</td>
</tr>
<tr>
<td>SOIL SCI 325</td>
<td>Soils and Landscapes</td>
<td>3</td>
</tr>
<tr>
<td>SOIL SCI 321</td>
<td>Soils and Environmental Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>SOIL SCI 621</td>
<td>Soil Chemistry</td>
<td></td>
</tr>
<tr>
<td>SOIL/AGRONOMY/HORT 326</td>
<td>Plant Nutrition Management</td>
<td></td>
</tr>
<tr>
<td>SOIL/BOTANY/HORT 626</td>
<td>Mineral Nutrition of Plants</td>
<td></td>
</tr>
<tr>
<td>SOIL SCI 322</td>
<td>Physical Principles of Soil and Water Management</td>
<td>3</td>
</tr>
<tr>
<td>SOIL SCI 622</td>
<td>Soil Physics</td>
<td></td>
</tr>
<tr>
<td>SOIL SCI/PL PATH 323</td>
<td>Soil Biology</td>
<td>3</td>
</tr>
<tr>
<td>SOIL SCI/MICROBIO 425</td>
<td>Environmental Microbiology</td>
<td></td>
</tr>
<tr>
<td>SOIL SCI/MICROBIO 523</td>
<td>Soil Microbiology and Biochemistry</td>
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</tr>
</tbody>
</table>

### Mathematics

**Select one of the following courses:**

- MATH 211 Calculus
- MATH 221 Calculus and Analytic Geometry I
- MATH 217 Calculus with Algebra and Trigonometry II

### Physics

**Select one of the following courses:**

- PHYSICS 103 General Physics (recommended)
- PHYSICS 104 General Physics
- PHYSICS 207 General Physics
- PHYSICS 208 General Physics

### Chemistry

**Select one of the following options:**

**Option 1:**
- CHEM 311 Chemistry Across the Periodic Table
- CHEM 327 or CHEM 329 Fundamentals of Analytical Science
- CHEM 327 or CHEM 329 Fundamentals of Analytical Science

**Option 2:**
- CHEM 341 Elementary Organic Chemistry and Elementary Organic Chemistry Laboratory

**Option 3:**
- CHEM 343 & CHEM 344 Introductory Organic Chemistry and Introductory Organic Chemistry Laboratory
- CHEM 345 & CHEM 345 Intermediate Organic Chemistry Laboratory

### Physical Environment

**Select one course from the following:**

- ATM OCN 100 Weather and Climate
- ATM OCN 101 Weather and Climate
- ATM OCN/ SOIL SCI 132 Earth’s Water: Natural Science and Human Use
- GEOF/ ENVIR ST 120 Introduction to the Earth System
- GEOF/ ENVIR ST 127 Physical Systems of the Environment
- GEOF/ ENVIR ST 106 Environmental Geology
- GEOF 202 Introduction to Geologic Structures
- SOIL SCI 131 Earth’s Soil: Natural Science and Human Use
- SOIL SCI 321 Soils and Environmental Chemistry
- SOIL SCI/AGRONOMY/HORT 326 Plant Nutrition Management

Select at least one course from the following:

- GEOF/CIV ENGR 320 Geomorphology

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1. Note that MATH 171 & MATH 217 must be taken as a sequence.
2. BOTANY/BIOLOGY 130 is required by the Turf and Grounds Track.
3. Consult advisor to request permission to substitute another course for the Capstone requirement. Course must meet CALS Capstone Characteristics described in the Undergraduate Catalog and be approved by advisor and 116 Ag Hall.
4. SOIL SCI 499 capstone required for Turf and Grounds Track.
Living Environment 9-14

Select one course from the following:

AGRONOMY 100 Principles and Practices in Crop Production
AGRONOMY 300 Cropping Systems
GEOG/ENVR ST 309 People, Land and Food: Comparative Study of Agriculture Systems
ZOOGO/ENVR ST 315 Limnology-Conservation of Aquatic Resources
HORT 345 Fruit Crop Production
HORT 370 World Vegetable Crops
AGROECOL 400 Study Abroad in Agroecology
SOIL SCI/AGRONOMY/BOTANY 370 Grassland Ecology
SOIL SCI/MICROBIO 425 Environmental Microbiology
SOIL SCI/MICROBIO 523 Soil Microbiology and Biochemistry

Select one course from the following:

BOTANY/F&W ECOL/ZOOGO 460 General Ecology
F&W ECOL 550 & F&W ECOL 551 Forest Ecology and Forest Ecology Lab
GENETICS 466 Principles of Genetics
BOTTANY 500 Plant Physiology
SOIL SCI/MICROBIO 523 Soil Microbiology and Biochemistry
GENETICS 545 Genetics Laboratory
BOTTANY 563 Phylogenetic Analysis of Molecular Data
SOIL SCI/BOTANY/HORT 626 Mineral Nutrition of Plants

SOIL SCI/AGRONOMY/BOTANY/HORT 524 Urban Soil and Environment
SOIL SCI/ENVIR ST 324 Soils and Environmental Quality
SOIL SCI/BOTANY/HORT 626 Urban Soil and Environment
AGRONOMY/ATM OCNI/SOIL SCI 532 Environmental Biophysics
F&W ECOL/ENVR ST 352 Principles of Landscape Ecology
GEOG 578 GIS Applications

Environment Policy, Management, and Analysis 9-12

Select one of the following courses:

SOIL SCI/ENVIR ST 101 Forum on the Environment
ENVR ST 112 Environmental Studies: Social Science Perspectives
ENVR ST 113 Environmental Studies: Environmental Humanities
ENVR ST/ILS 126 Principles of Environmental Science
ENVR ST/GEOG 127 Physical Systems of the Environment
A A E/F&W ECOL 652 Decision Methods for Natural Resource Managers
SOIL SCI/ENVIR ST 575 Assessment of Environmental Impact
GEOG/SOIL SCI 526 Human Transformations of Earth Surface Processes

Select one of the following courses:

ECON 101 Principles of Microeconomics
ECON 111 Principles of Economics-Accelerated Treatment
A A E 215 Introduction to Agricultural and Applied Economics
A A E/ENVR ST 244 The Environment and the Global Economy
A A E 319 The International Agricultural Economy
ENVR ST/PL PATH 368 Environmental Law, Toxic Substances, and Conservation

Select one of the following courses:

ENVR ST/F&W ECOL/G L E/GEOG/GEOSCI/LAND ARC 371 Introduction to Environmental Remote Sensing
### SOIL AND FOOD SYSTEMS

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SOIL AND FOOD SYSTEMS</strong></td>
<td></td>
<td><strong>37-52</strong></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
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<td><strong>37-52</strong></td>
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#### Physical Environment

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ATM OCN 100</td>
<td>Weather and Climate</td>
<td>8-10</td>
</tr>
<tr>
<td>SOIL SCI/ ATM OCN 132</td>
<td>Earth’s Water: Natural Science and Human Use</td>
<td>8-10</td>
</tr>
<tr>
<td>ATM OCN 101</td>
<td>Weather and Climate</td>
<td>8-10</td>
</tr>
<tr>
<td>ATM OCN/ GEOG 323</td>
<td>Science of Climate Change</td>
<td>8-10</td>
</tr>
<tr>
<td>GEOG/ ENVIR ST 120</td>
<td>Introduction to the Earth System</td>
<td>8-10</td>
</tr>
<tr>
<td>GEOG/ ENVIR ST 127</td>
<td>Physical Systems of the Environment</td>
<td>8-10</td>
</tr>
<tr>
<td>GEOG 100</td>
<td>Introductory Geology: How the Earth Works</td>
<td>8-10</td>
</tr>
<tr>
<td>GEOG/ ENVIR ST 106</td>
<td>Environmental Geology</td>
<td>8-10</td>
</tr>
<tr>
<td>SOIL SCI/ ENVIR ST 21</td>
<td>Soils and Environmental Quality</td>
<td>8-10</td>
</tr>
<tr>
<td>SOIL SCI 321</td>
<td>Soils and Environmental Chemistry</td>
<td>8-10</td>
</tr>
<tr>
<td>SOIL SCI/ AGRONOMY/ HORT 326</td>
<td>Plant Nutrition Management</td>
<td>8-10</td>
</tr>
<tr>
<td>SOIL SCI/ F&amp;W ECOL 451</td>
<td>Environmental Biogeochemistry</td>
<td>8-10</td>
</tr>
<tr>
<td>SOIL SCI/ F&amp;W ECOL/ HORT 524</td>
<td>Urban Soil and Environment</td>
<td>8-10</td>
</tr>
</tbody>
</table>

Select one of the following courses:

- F&W ECOL/ ZOLOGY 565 | Principles of Landscape Ecology |
- GEOG/CIV ENGR 320 | Geomorphology |
- GEOG 578 | GIS Applications |
- GEOG 579 | GIS and Spatial Analysis |
- SOIL SCI 131 | Earth’s Soil: Natural Science and Human Use |
- SOIL SCI/ F&W ECOL 451 | Environmental Biogeochemistry |
- SOIL SCI/ MICROBIO 523 | Soil Microbiology and Biochemistry |
- SOIL SCI 621 | Soil Chemistry |
- SOIL SCI 622 | Soil Physics |
- SOIL SCI/ BOTANY/ HORT 626 | Mineral Nutrition of Plants |

Select one of the following courses:

- ENVIR ST/ F&W ECOL/ GLE/ GEOG/ GEOSCI/ LAND ARC 371 | Introduction to Environmental Remote Sensing |
- ENVIR ST/ F&W ECOL/ GLE/ GEOG/ GEOSCI/ LAND ARC 372 | Intermediate Environmental Remote Sensing |
- ENVIR ST/ LAND ARC/SOIL SCI 695 | Applications of Geographic Information Systems in Natural Resources |

### Economics and Food Management

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Economics and Food Management</strong></td>
<td></td>
<td><strong>6-8</strong></td>
</tr>
</tbody>
</table>

Select one of the following courses:

- ACCT IS 100 | Introductory Financial Accounting |
- ACCT IS 211 | Introductory Managerial Accounting |
- ACCT IS 300 | Accounting Principles |
- ACCT IS 301 | Financial Reporting I |
- ACCT IS/ LAW 329 | Taxation: Concepts for Business and Personal Planning |
- A A E 215 | Introduction to Agricultural and Applied Economics |
- A A E 320 | Farming Systems Management |
- A A E 322 | Commodity Markets |
- A A E 323 | Cooperatives and Alternative Forms of Enterprise Ownership |
- A A E 419 | Agricultural Finance |
- A A E/ECON 421 | Economic Decision Analysis |
- A A E/ECON 474 | Economic Problems of Developing Areas |
- M HR 305 | Human Resource Management |
- M HR 610 | Compensation: Theory and Administration |
- M HR 611 | Personnel Staffing and Evaluation |
- M HR 612 | Labor-Management Relations |

Select one of the following courses:

- ECON 101 | Principles of Microeconomics |
- ECON 111 | Principles of Economics-Accelerated Treatment |
- ACCT IS 100 | Introductory Financial Accounting |
- ACCT IS 211 | Introductory Managerial Accounting |
- ACCT IS 300 | Accounting Principles |
- ACCT IS 301 | Financial Reporting I |
- ACCT IS/ LAW 329 | Taxation: Concepts for Business and Personal Planning |
- A A E 320 | Farming Systems Management |
- A A E 322 | Commodity Markets |
- A A E 323 | Cooperatives and Alternative Forms of Enterprise Ownership |
- A A E 419 | Agricultural Finance |
- A A E/ECON 421 | Economic Decision Analysis |
- A A E/ECON 474 | Economic Problems of Developing Areas |

- SOIL SCI/ MICROBIO 425 | Environmental Microbiology |
SOIL SCI/MICROBIO 523 Soil Microbiology and Biochemistry
M H R 305 Human Resource Management
M H R 610 Compensation: Theory and Administration
M H R 611 Personnel Staffing and Evaluation
M H R 612 Labor-Management Relations

Specialized Sciences (complete all) ¹
AGRONOMY 100 Principles and Practices in Crop Production 3-4
or HORT 120 Survey of Horticulture
AGRONOMY 300 Cropping Systems 3
or AGRONOMY 302 Forage Management and Utilization
or HORT 345 Fruit Crop Production
AGRONOMY/HORT/SOIL SCI 326 Plant Nutrition Management 3

PL PATH 300 Introduction to Plant Pathology 2-4
or ENTOM 351 Principles of Economic Entomology
or PL PATH/ENVR ST 368 Environmental Law, Toxic Substances, and Conservation
A A E 215 Introduction to Agricultural and Applied Economics 3-4
or A A E/ENVR ST 244 The Environment and the Global Economy
or A A E 319 The International Agricultural Economy
or A A E/AGRONOMY/NUTR SCI 350 World Hunger and Malnutrition

Total Credits 28-36

¹ Some courses may fulfill GEN ED requirements.

TURF AND GROUNDS

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td></td>
<td><strong>Physical Environment</strong></td>
<td></td>
</tr>
<tr>
<td>Select one of the following courses:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 100</td>
<td>Weather and Climate</td>
<td></td>
</tr>
<tr>
<td>ATM OCN 101</td>
<td>Weather and Climate</td>
<td></td>
</tr>
<tr>
<td>SOIL SCI/ATM OCN 132</td>
<td>Earth’s Water: Natural Science and Human Use</td>
<td></td>
</tr>
<tr>
<td>GEOG/ENVR ST 120</td>
<td>Introduction to the Earth System</td>
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<tr>
<td>GEOG/ENVR ST 127</td>
<td>Physical Systems of the Environment</td>
<td></td>
</tr>
<tr>
<td>GEOSCI 100</td>
<td>Introductory Geology: How the Earth Works</td>
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<tr>
<td>GEOSCI/ENVR ST 106</td>
<td>Environmental Geology</td>
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<tr>
<th></th>
<th><strong>Core Turf and Grounds Sciences (complete all)</strong></th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT IS 300</td>
<td>Accounting Principles</td>
<td>3</td>
</tr>
<tr>
<td>BOTANY/BIOLOGY 130</td>
<td>General Botany ¹</td>
<td>5</td>
</tr>
<tr>
<td>HORT/PL PATH 261</td>
<td>Sustainable Turfgrass Use and Management</td>
<td>2</td>
</tr>
<tr>
<td>M H R 305</td>
<td>Human Resource Management</td>
<td>3</td>
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</tbody>
</table>

PL PATH 300 Introduction to Plant Pathology 4
HORT/SOIL SCI 332 Turfgrass Nutrient and Water Management 3

Specialized Sciences 7
Select 7 credits from the following courses:
BOTANY/F&W ECOL 402 Dendrology
HORT/LAND ARC 263 Landscape Plants I
BSE 201 Land Surveying Fundamentals
BSE 243 Operating and Management Principles of Off-Road Vehicles
ENTOM 351 Principles of Economic Entomology
HORT 120 Survey of Horticulture
HORT/PL PATH 262 Turfgrass Management Laboratory

¹ Counts toward Soil Science Major Biology requirements, above.

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 SOIL SCI 681 Senior Honors Thesis and SOIL SCI 682 Senior Honors Thesis when completing their thesis project; please see the Honors in Major Checklist (http://

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.