

# FOREST SCIENCE, 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*.

- |                   |  |
|-------------------|--|
| 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> |
|-------------------|--|

\* 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 ( <a href="http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#CALSThirdYearSeminarCourses">http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#CALSThirdYearSeminarCourses</a> )	1
--	---

International Studies ( <a href="http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#CALSIInternationalStudiesCourses">http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#CALSIInternationalStudiesCourses</a> )	3
---	---

Physical Science Fundamentals	4-5
-------------------------------	-----

CHEM 103 or CHEM 108 or CHEM 109	General Chemistry I Chemistry in Our World 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/#CALSCapstoneRequirement>)

### MAJOR REQUIREMENTS

Code	Title	Credits
Complete one of the following (or may be satisfied by placement exam):		5-6

MATH 112 & MATH 113	Algebra and Trigonometry
------------------------	-----------------------------

MATH 114	Algebra and Trigonometry
----------	--------------------------

Complete one of the following:	3
--------------------------------	---

STAT 301	Introduction to Statistical Methods
----------	-------------------------------------

STAT 371	Introductory Applied Statistics for the Life Sciences (recommended)
----------	---

#### Chemistry

Complete one of the following:	4-5
--------------------------------	-----

CHEM 103	General Chemistry I
----------	---------------------

CHEM 108	Chemistry in Our World
----------	------------------------

CHEM 109	Advanced General Chemistry
----------	----------------------------

#### Biology

Complete one of the following options:	10
--	----

Option 1 (recommended introduction to biology sequence):

BOTANY/ BIOLOGY 130 & ZOOLOGY/ BIOLOGY 101 & ZOOLOGY/ BIOLOGY 102	General Botany and Animal Biology and Animal Biology Laboratory
--	---

Option 2:

BIOLOGY/ BOTANY/ ZOOLOGY 151 & BIOLOGY/ BOTANY/ ZOOLOGY 152	Introductory Biology and Introductory Biology
--	--

Option 3:

BIOCORE 381 & BIOCORE 382 & BIOCORE 383 & BIOCORE 384	Evolution, Ecology, and Genetics and Evolution, Ecology, and Genetics Laboratory and Cellular Biology and Cellular Biology Laboratory	
<b>Economics</b>		
A A E 215 or ECON 101	Introduction to Agricultural and Applied Economics Principles of Microeconomics	4
<b>Wildlife Ecology</b>		
Complete one of the following: <sup>1</sup>		3
F&W ECOL 110	Living with Wildlife - Animals, Habitats, and Human Interactions	
F&W ECOL/ ENVIR ST/ ZOOLOGY 360	Extinction of Species <sup>2</sup>	
F&W ECOL 379	Principles of Wildlife Management	
F&W ECOL/ AN SCI/ ZOOLOGY 520	Ornithology	
<b>Core</b>		
Grade of C or better required in each core course		
SOIL SCI 301 or SOIL SCI/ ENVIR ST/ GEOG 230	General Soil Science Soil: Ecosystem and Resource	3
F&W ECOL 300	Forest Biometry	4
GEOG/CIV ENGR/ ENVIR ST 377 or F&W ECOL/ ENVIR ST/G L E/ GEOG/GEOSCI/ LAND ARC 371	An Introduction to Geographic Information Systems Introduction to Environmental Remote Sensing	3-4
BOTANY/F&W ECOL 402	Dendrology	2
F&W ECOL 305	Forest Operations	2
F&W ECOL 390	Learning to Action: Professional Development	1
F&W ECOL 410 & F&W ECOL 411	Principles of Silviculture and Practices of Silviculture	4
ENVIR ST/F&W ECOL 515 or ENVIR ST/ ECON/POLI SCI/ URB R PL 449 or ENVIR ST/ GEOG 439	Natural Resources Policy (recommended, satisfies Communications B requirement) Government and Natural Resources US Environmental Policy and Regulation	3
F&W ECOL 448 & F&W ECOL 449 & F&W ECOL 450	Disturbance Ecology and Disturbance Ecology Lab (I): Herbivores and Fire and Disturbance Ecology Lab (II): Forest Pathogens	5
F&W ECOL 550 & F&W ECOL 551	Forest Ecology and Forest Ecology Lab	4
A A E/ENVIR ST/ F&W ECOL 652	Decision Methods for Natural Resource Managers	4

F&W ECOL 658	Forest Resources Practicum	3
--------------	----------------------------	---

**Electives**

Complete 12 credits from Major Electives (see list below)		12
---	--	----

**Capstone**

Grade of C or better required in Capstone	
---	--

F&W ECOL 590	Integrated Resource Management	3
--------------	--------------------------------	---

<b>Total Credits</b>		<b>82-85</b>
----------------------	--	--------------

1

Students may take multiple courses in this category. Courses taken beyond the requirement may count as Major Electives.

2

May also fulfill CALS International Studies requirement.

**MINIMUM GRADE REQUIREMENT**

Students will be required to receive a grade of C or higher on all of the Forest Science Core courses and the Capstone. Students who receive a grade of D or below will be required to retake the course for graduation.

**MAJOR ELECTIVES****FOREST SCIENCE MAJOR ELECTIVES**

Code	Title	Credits
Complete at least 12 credits from the following courses. Students can focus their interests using the categories.		12
<i>Soils and Landscapes:</i>		
F&W ECOL/ LAND ARC/ ZOOLOGY 565	Principles of Landscape Ecology	
GEOG 329	Landforms and Landscapes of North America	
LAND ARC 668	Restoration Ecology	
SOIL SCI 325	Soils and Landscapes	
SOIL SCI/ F&W ECOL 451	Environmental Biogeochemistry	
<i>Economics and Business:</i>		
A A E/ ENVIR ST 244	The Environment and the Global Economy	
A A E/ECON/ ENVIR ST 343	Environmental Economics	
A A E/ECON 371	Energy, Resources and Economics	
A A E 419	Agricultural Finance	
GEN BUS 310	Fundamentals of Accounting and Finance for Non-Business Majors	
GEN BUS 311	Fundamentals of Management and Marketing for Non-Business Majors	
INTL BUS 200	International Business	
LSC 270	Marketing Communication for the Sciences	
M H R 300	Managing Organizations	
M H R 305	Human Resource Management	
M H R 401	The Management of Teams	
OTM 300	Operations Management	
<i>Urban and Wildland Forest Management:</i>		
BOTANY/ F&W ECOL 455	The Vegetation of Wisconsin	

HORT/  
LAND ARC 263 Landscape Plants I

HORT/  
AGRONOMY/  
SOIL SCI 326 Plant Nutrition Management

*GIS/Remote Sensing:*

ENVIR ST/  
CIV ENGR/  
LAND ARC 556 Remote Sensing Digital Image Processing

ENVIR ST/  
SOIL SCI 575 Assessment of Environmental Impact

ENVIR ST/  
LAND ARC/  
SOIL SCI 695 Applications of Geographic Information Systems in Natural Resources

GEOG 370 Introduction to Cartography

GEOG/  
CIV ENGR/  
ENVIR ST 377 An Introduction to Geographic Information Systems

GEOG 378 Introduction to Geocomputing

*Wildlife and Fisheries Ecology:*

GEOG/  
BOTANY 338 Environmental Biogeography

F&W ECOL 306 Terrestrial Vertebrates: Life History and Ecology

F&W ECOL 318 Principles of Wildlife Ecology

F&W ECOL 379 Principles of Wildlife Management

F&W ECOL 404 Wildlife Damage Management

F&W ECOL 655 Animal Population Dynamics

ZOOLOGY/  
ENVIR ST 315 Limnology-Conservation of Aquatic Resources

ZOOLOGY 316 Laboratory for Limnology-Conservation of Aquatic Resources

ZOOLOGY/  
ENVIR ST 510 Ecology of Fishes

ZOOLOGY/  
ENVIR ST 511 Ecology of Fishes Lab

ZOOLOGY/  
AN SCI/  
F&W ECOL 520 Ornithology

ZOOLOGY/  
AN SCI/  
F&W ECOL 521 Birds of Southern Wisconsin

*Ecology and Biological Diversity*

AGRONOMY/  
BOTANY/  
SOIL SCI 370 Grassland Ecology

ENTOM/  
ZOOLOGY 302 Introduction to Entomology

ENTOM/  
BOTANY/  
ZOOLOGY 473 Plant-Insect Interactions

BOTANY/  
PL PATH 332 Fungi

BOTANY/  
PL PATH 333 Biology of the Fungi

BOTANY 401 Vascular Flora of Wisconsin

BOTANY 422 Plant Geography

BOTANY/  
F&W ECOL/  
ZOOLOGY 460 General Ecology

ZOOLOGY/  
F&W ECOL/  
LAND ARC 565 Principles of Landscape Ecology

*Conservation Biology*

F&W ECOL/  
ENVIR ST 100 Forests of the World

F&W ECOL/  
ENVIR ST/  
ZOOLOGY 360 Extinction of Species

F&W ECOL/  
BOTANY/  
ENVIR ST/  
ZOOLOGY 651 Conservation Biology

F&W ECOL/  
ZOOLOGY 660 Climate Change Ecology

GEOG/  
ENVIR ST 339 Environmental Conservation

LAND ARC/  
ENVIR ST 361 Wetlands Ecology

ZOOLOGY/  
ANTHRO/  
BOTANY 410 Evolutionary Biology

*Natural Resource Management and Policy*

A A E/ECON/  
F&W ECOL 531 Natural Resource Economics

ENVIR ST/  
BSE 367 Renewable Energy Systems

ENVIR ST/  
GEOSCI 411 Energy Resources

ENVIR ST/  
ECON/POLI SCI/  
URB R PL 449 Government and Natural Resources

ENVIR ST/  
A A E/ECON/  
URB R PL 671 Energy Economics

F&W ECOL 561 Wildlife Management Techniques

LAND ARC/  
ENVIR ST 581 Prescribed Fire: Ecology and Implementation

PL PATH 300 Introduction to Plant Pathology

*Earth and Atmospheric Science*

ATM OCN 100 Weather and Climate

ATM OCN 101 Weather and Climate

ATM OCN/  
ENVIR ST 171 Global Change: Atmospheric Issues and Problems

ATM OCN/  
ENVIR ST/  
GEOG 332 Global Warming: Science and Impacts

ATM OCN/  
ENVIR ST 535 Atmospheric Dispersion and Air Pollution

F&W ECOL/  
SOIL SCI 451 Environmental Biogeochemistry

GEOG 342 Geography of Wisconsin

MICROBIO 303	Biology of Microorganisms
MICROBIO 304	Biology of Microorganisms Laboratory
SOIL SCI 321	Soils and Environmental Chemistry
SOIL SCI/ PL PATH 323	Soil Biology
<i>Human and Social Dimensions of Ecology</i>	
AMER IND/ ENVIR ST 306	Indigenous Peoples and the Environment
AMER IND/ ENVIR ST 341	Indigenous Environmental Communicators
AMER IND/ ENVIR ST/ GEOG 345	Managing Nature in Native North America
AMER IND/ GEOG 410	Critical Indigenous Ecological Knowledges
AMER IND/ ANTHRO/ BOTANY 474	Ethnobotany
C&E SOC/ F&W ECOL/ SOC 248	Environment, Natural Resources, and Society
C&E SOC/ CURRIC/ ENVIR ST 405	Education for Sustainable Communities
C&E SOC/ SOC 541	Environmental Stewardship and Social Justice
ENVIR ST 307	Literature of the Environment: Speaking for Nature
ENVIR ST/ HIST SCI 353	History of Ecology
ENVIR ST/ PHILOS 441	Environmental Ethics
ENVIR ST/GEOG/ HISTORY 460	American Environmental History
<b>Total Credits</b>	<b>12</b>

## 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/current-students/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 F&W ECOL 681 and F&W ECOL 682 when completing their thesis project; please see the Honors Program page (<https://cals.wisc.edu/academics/undergraduate/current-students/honors-program/>) for more information.

## 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.