

# 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	• 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

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

### 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)	
<b>Chemistry</b>		
Complete one of the following:		4-5
CHEM 103	General Chemistry I	
CHEM 108	Chemistry in Our World	
CHEM 109	Advanced General Chemistry	
<b>Biology</b>		
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	Introduction to Agricultural and Applied Economics	4
or ECON 101	Principles of Microeconomics	
<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	General Soil Science	3
or SOIL SCI/ ENVIR ST/ GEOG 230	Soil: Ecosystem and Resource	
F&W ECOL 300	Forest Measurements	4
GEOG/CIV ENGR/ ENVIR ST 377	An Introduction to Geographic Information Systems	3-4
or F&W ECOL/ ENVIR ST/G L E/ GEOG/GEOSCI/ LAND ARC 371	Introduction to Environmental Remote Sensing	
BOTANY/F&W ECOL 402	Dendrology: Woody Plant Identification and Ecology	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	Natural Resources Policy (recommended, satisfies Communications B requirement)	3
or ENVIR ST/ ECON/POLI SCI/ URB R PL 449	Government and Natural Resources	
or ENVIR ST/ GEOG 439	US Environmental Policy and Regulation	
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. 12  
Students can focus their interests using the categories.

*Soils and Landscapes:*

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	

*Economics and Business:*

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	

*Urban and Wildland Forest Management:*

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.