FOREST SCIENCE, B.S.

Forest ecosystems cover one third of the world’s land area and nearly half of Wisconsin. They provide a range of benefits to society including wood and fiber, wildlife habitat, biological diversity, clean water, carbon storage, recreation, beauty, and cultural values. The Department of Forest and Wildlife Ecology trains foresters to sustainably manage forests toward sustainable ecological, social, and economic outcomes. Forest science students also learn how to respond to forest disturbances from insects, diseases, fire, and other changes. Beyond a core of basic science and forestry coursework, students have flexibility to customize their learning experience within one of three tracks: forest conservation, forests and the environment, and forest management. All three tracks meet accreditation standards of the Society of American Foresters, a key credential that employers seek. Students are also well positioned to pursue graduate training in forestry, ecology, remote-sensing, natural resource policy, and related fields.

Students learn through a mix of classroom, laboratory, and field instruction that emphasizes independent thinking and problem-solving. Students make frequent visits to forests to develop and hone their skills, essential for future job opportunities. Students also engage professional and student-led trainings and networking that further build skills. Graduates go on to jobs in private, public, and non-governmental sectors or pursue graduate degrees.

HOW TO GET IN

To declare this major, students must be admitted to UW–Madison and the College of Agricultural and Life Sciences (CALS). For information about becoming a CALS first-year or transfer student, see Entering the College (http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#enteringthecollegetext).

Students who attend Student Orientation, Advising, and Registration (SOAR) with the College of Agricultural and Life Sciences have the option to declare this major at SOAR. Students may otherwise declare after they have begun their undergraduate studies. For more information, contact the advisor listed under the Advising and Careers tab.

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/#requirementsforundergraduatetestudytext) 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. Specific requirements for all majors in the college and other information on academic matters can be obtained from the Office of Academic Affairs (http://www.cals.wisc.edu/academics), College of Agricultural and Life Sciences, 116 Agricultural Hall, 1450 Linden Drive, Madison, WI 53706; 608-262-3003. Academic departments and advisors also have information on requirements. Courses may not double count within university requirements (General Education and Breadth) or within college requirements (First-Year Seminar, International Studies and Science), 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></td>
<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>
<td></td>
</tr>
<tr>
<td></td>
<td>Residency: Students must complete 30 degree credits in residence at UW–Madison after earning 86 credits toward their undergraduate degree.</td>
<td></td>
</tr>
<tr>
<td></td>
<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>
</tr>
<tr>
<td></td>
<td>International Studies (<a href="http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#requirementstext">http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#requirementstext</a>)</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 103</td>
<td>General Chemistry I</td>
<td>4-5</td>
</tr>
<tr>
<td>CHEM 108</td>
<td>Chemistry in Our World</td>
<td></td>
</tr>
<tr>
<td>CHEM 109</td>
<td>Advanced General Chemistry</td>
<td></td>
</tr>
<tr>
<td>Biological Science</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Additional Science (Biological, Physical, or Natural)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Science Breadth (Biological, Physical, Natural, or Social)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CALS Capstone Learning Experience: included in the requirements for each CALS major (see &quot;Major Requirements&quot;) (<a href="http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#requirementstext">http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#requirementstext</a>)</td>
<td></td>
<td></td>
</tr>
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</table>
## MAJOR REQUIREMENTS

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 112</td>
<td>Algebra</td>
<td>5-6</td>
</tr>
<tr>
<td>&amp; MATH 113</td>
<td>and Trigonometry</td>
<td></td>
</tr>
<tr>
<td>MATH 114</td>
<td>Algebra and Trigonometry</td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 301</td>
<td>Introduction to Statistical Methods</td>
<td>3</td>
</tr>
<tr>
<td>STAT 371</td>
<td>Introductory Applied Statistics for the Life Sciences (recommended)</td>
<td></td>
</tr>
</tbody>
</table>

### Chemistry

Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 103</td>
<td>General Chemistry I</td>
<td>4-5</td>
</tr>
<tr>
<td>CHEM 108</td>
<td>Chemistry in Our World</td>
<td></td>
</tr>
<tr>
<td>CHEM 109</td>
<td>Advanced General Chemistry</td>
<td></td>
</tr>
</tbody>
</table>

### Biology

Select one of the following options:

Option 1 (recommended introduction to biology sequence):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOTANY/</td>
<td>General Botany</td>
<td></td>
</tr>
<tr>
<td>BIOLOGY 130</td>
<td>and Animal Biology</td>
<td></td>
</tr>
<tr>
<td>&amp; ZOOLOGY/</td>
<td>and Animal Biology Laboratory</td>
<td></td>
</tr>
<tr>
<td>BIOLOGY 101</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&amp; ZOOLOGY/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOLOGY 102</td>
<td></td>
<td></td>
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</tbody>
</table>

Option 2:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOLOGY/</td>
<td>Introductory Biology</td>
<td></td>
</tr>
<tr>
<td>BOTANY/</td>
<td>and Introductory Biology</td>
<td></td>
</tr>
<tr>
<td>ZOOLOGY 151</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&amp; BIOLOGY/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOTANY/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ZOOLOGY 152</td>
<td></td>
<td></td>
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</tbody>
</table>

Option 3:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOCORE 381</td>
<td>Evolution, Ecology, and Genetics</td>
<td></td>
</tr>
<tr>
<td>&amp; BIOCORE 382</td>
<td>and Evolution, Ecology, and Genetics</td>
<td></td>
</tr>
<tr>
<td>&amp; BIOCORE 383</td>
<td>Genetics Laboratory</td>
<td></td>
</tr>
<tr>
<td>&amp; BIOCORE 384</td>
<td>and Cellular Biology</td>
<td></td>
</tr>
<tr>
<td>&amp; BIOCORE 384</td>
<td>and Cellular Biology Laboratory</td>
<td></td>
</tr>
</tbody>
</table>

### Economics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>A A E 215</td>
<td>Introduction to Agricultural and Applied Economics</td>
<td>3-4</td>
</tr>
<tr>
<td>or ECON 101</td>
<td>Principles of Microeconomics</td>
<td></td>
</tr>
</tbody>
</table>

### Conservation

Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVIR ST/</td>
<td>Wetlands Ecology</td>
<td>2-4</td>
</tr>
<tr>
<td>LAND ARC 361</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F&amp;W ECOL/</td>
<td>Extinction of Species (recommended)</td>
<td>3</td>
</tr>
<tr>
<td>ENVIR ST/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ZOOLOGY 360</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F&amp;W ECOL/</td>
<td>Principles of Landscape Ecology</td>
<td></td>
</tr>
<tr>
<td>LAND ARC/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ZOOLOGY 565</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Core

Select one of the following:

<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>F&amp;W ECOL 300</td>
<td>Forest Biometry</td>
<td>4</td>
</tr>
<tr>
<td>GEOG/CIV ENGR/ENVIR ST 377</td>
<td>An Introduction to Geographic Information Systems</td>
<td>3-4</td>
</tr>
<tr>
<td>or F&amp;W ECOL/ENVIR ST/G L E/GEOG/GEOSCI/LAND ARC 371</td>
<td>Introduction to Environmental Remote Sensing</td>
<td></td>
</tr>
<tr>
<td>F&amp;W ECOL/</td>
<td>Diseases of Trees and Shrubs</td>
<td>3</td>
</tr>
<tr>
<td>HORT/LAND ARC/PL PATH 309</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F&amp;W ECOL 399</td>
<td>Coordinative Internship/Cooperative Education</td>
<td>1-8</td>
</tr>
</tbody>
</table>

### Electives

Select one of the following tracks:

- Forest Management Track
- Forest Conservation Track
- Forests & Environment Track

### Capstone

Grade of C or better required in Capstone

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>F&amp;W ECOL 590</td>
<td>Integrated Resource Management</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 83-96

---

1. A A E 215 only carries QR-B credit if taken fall 2011 or later.
2. These courses may double count as track electives.
3. F&W ECOL/ENVIR ST/ZOOLOGY 360 Extinction of Species may also fulfill CALS International Studies requirement.

### MINIMUM GRADE REQUIREMENT

Students who declare the major in fall 2012 or later 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.

**TRACKS**

### FOREST MANAGEMENT TRACK

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 12 credits from any of the following courses:</td>
<td>12</td>
</tr>
</tbody>
</table>

**Soils and Landscapes:**
- F&W ECOL/ LAND ARC/ ZOOLOGY 565: Principles of Landscape Ecology
- GEOG 329: Landforms and Landscapes of North America
- 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 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: Communication in Life Science Industries
- 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:**
- ENVIR ST/ M&ENVTOX/ PL PATH 368: Environmental Law, Toxic Substances, and Conservation
- F&W ECOL 375: Special Topics (Tree Stability Analysis)
- HORT/ LAND ARC 263: Landscape Plants I
- HORT/ AGRONOMY/ SOIL SCI 326: Plant Nutrition Management
- HORT 375: Special Topics (Aboriculture)

**GIS/Remote Sensing:**
- ENVIR ST 400: Special Topics in the Environment: Biological Aspects of Envir St (Fieldcraft & Field Methods for Environmental Researchers)
- ENVIR ST/ SOIL SCI 575: Assessment of Environmental Impact

**Wildlife and Fisheries Ecology:**
- ENVIR ST 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
- ZOOLOGY/ BOTANY/ ENVIR ST/ F&W ECOL 651: Conservation Biology

**Total Credits** 12

### FOREST CONSERVATION TRACK

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select 3 credits from each of the following areas:</td>
<td>3</td>
</tr>
</tbody>
</table>

**Plant Ecology and Diversity:**
- BOTANY/ PL PATH 332: Fungi
- BOTANY 401: Vascular Flora of Wisconsin
- BOTANY 422: Plant Geography
- BOTANY/ F&W ECOL 455: The Vegetation of Wisconsin
- F&W ECOL 635: Forest Stand Dynamics
- GEOG/ BOTANY 338: Environmental Biogeography

**Animal Ecology and Diversity:**
- ENTOM/ ZOOLOGY 302: Introduction to Entomology
- ENTOM 342: Insect Ecology
- ENTOM/BOTANY/ ZOOLOGY 473: Plant-Insect Interactions

**Total Credits** 12
F&W ECOL 306 Terrestrial Vertebrates: Life History and Ecology
F&W ECOL 375 Special Topics (Wildlife-Habitat Relationships)
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
F&W ECOL/LAND ARC/ZOOLOGY 360 Extinction of Species
F&W ECOL/LAND ARC/ZOOLOGY 565 Principles of Landscape Ecology
F&W ECOL/BOTANY/ENVIR ST/ZOOLOGY 651 Conservation Biology
GEOG/ENVIR ST 339 Environmental Conservation
ZOOLOGY/ANTHRO/BOTANY 410 Evolutionary Biology
ENVIR ST/LAND ARC 361 Wetlands Ecology
F&W ECOL/ENVIR ST/ZOOLOGY 360 Principles of Landscape Ecology
F&W ECOL/LAND ARC/ZOOLOGY 565 Principles of Landscape Ecology
ENVIR ST/LAND ARC 361 Restoration Ecology

Total Credits 12

FORESTS & ENVIRONMENT TRACK

Select 12 credits from any of the following courses:

Earth and Atmospheric Science:
- ATM OCN 100 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
- GEOG 329 Landforms and Landscapes of North America
- 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
- SOIL SCI 325 Soils and Landscapes
- SOIL SCI/F&W ECOL 451 Environmental Biogeochemistry

Plant and Animal Ecology:
- BOTANY/PL PATH 332 Fungi
- BOTANY 401 Vascular Flora of Wisconsin
- BOTANY 422 Plant Geography
- BOTANY/F&W ECOL 455 The Vegetation of Wisconsin
- BOTANY/F&W ECOL/ZOOLOGY 460 General Ecology
- ENTOM/ZOOLOGY 302 Introduction to Entomology
- ENTOM 342 Insect Ecology
- ENTOM/BOTANY/ZOOLOGY 473 Plant-Insect Interactions
- ENVIR ST/LAND ARC 473 Wetlands Ecology
- F&W ECOL 306 Terrestrial Vertebrates: Life History and Ecology
- F&W ECOL 318 Principles of Wildlife Ecology
F&W ECOL/ENVIR ST/ZOOLOGY 360  Extinction of Species
F&W ECOL 375  Special Topics (Wildlife-Habitat Relationships)
F&W ECOL/LAND ARC/ZOOLOGY 565  Principles of Landscape Ecology
F&W ECOL 635  Forest Stand Dynamics
F&W ECOL/BOTANY/ENVIR ST/ZOOLOGY 651  Conservation Biology
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

Natural Resources Management:
ENVIR ST/BSE 367  Renewable Energy Systems
ENVIR ST/GEOSCI 411  Energy Resources
ENVIR ST/SOIL SCI 575  Assessment of Environmental Impact
ENVIR ST/A A E/ECON/URB R PL 671  Energy Economics
F&W ECOL 379  Principles of Wildlife Management
GEOG/CIV ENGR/ENVIR ST 377  An Introduction to Geographic Information Systems
PL PATH 300  Introduction to Plant Pathology
LAND ARC 668  Restoration Ecology

Human Dimensions of Resources:
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/F&W ECOL 531  Natural Resource Economics
C&E SOC/F&W ECOL/SOC 248  Environment, Natural Resources, and Society
ENVIR ST 307  Literature of the Environment: Speaking for Nature
ENVIR ST/HIST SCI 353  History of Ecology

ENVIR ST/M&ENVTOX/PL PATH 368  Environmental Law, Toxic Substances, and Conservation
ENVIR ST/PHILOS 441  Environmental Ethics
ENVIR ST/GEOG/HISTORY 460  American Environmental History
F&W ECOL 450  Communities and Forests
F&W ECOL/ENVIR ST/HISTORY 452  World Forest History
GEOG/ENVIR ST 339  Environmental Conservation

Total Credits 12

HONORS IN THE MAJOR

Admission to the Honors Program is not competitive provided students meet the required admission criteria.

Admission Criteria for New Freshmen:

• In the upper 10% of their high school graduating class
• ACT score of 28 or higher
• SAT score of at least 1240

Admission Criteria for Transfer and Continuing UW-Madison Students:

• UW-Madison cumulative GPA of at least 3.25

Highly motivated students can apply for admission to the program in the absence of these requirements by including a letter with their application addressed to the Honors Dean in 116 Agricultural Hall explaining why they should be in the program.

HOW TO APPLY

Apply to the program online (https://cals.wisc.edu/wp-content/uploads/2017/05/honorsapplication_form.pdf) or pick up an application in the Office of Academic Affairs, 116 Agricultural Hall. Applications are accepted at any time.

New freshmen 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 meeting with the advisor for that major by completing the application form and selecting Honors in the Major. Transfer and continuing students may apply directly to Honors in Research or Honors in the Major (after meeting with the major advisor).

HOW TO CANCEL PARTICIPATION

Students who are no longer interested in pursuing Honors should complete the form to cancel their participation. Students may cancel their participation at any time, and this will not be noted on the student’s transcript.

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 Senior Honors Thesis and F&W ECOL 682 Senior Honors Thesis when completing their thesis project; please see the Honors in Major Checklist (http://www.cals.wisc.edu/academics/undergraduate-programs/get-involved/honors-program/honors-in-the-major) 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.

LEARNING OUTCOMES

1. (Ecology) Understanding of taxonomy and ability to identify forest and other tree species, their distribution, and associated vegetation and wildlife.

2. (Ecology) Understanding of soil properties and processes, hydrology, water quality, and watershed functions.

3. (Ecology) Understanding of ecological concepts and principles including the structure and function of ecosystems, plant and animal communities, competition, diversity, population dynamics, succession, disturbance, and nutrient cycling.

4. (Ecology) Ability to make ecosystem, forest, and stand assessments.

5. (Ecology) Understanding of tree physiology and the effects of climate, fire, pollutants, moisture, nutrients, genetics, insects and diseases on tree and forest health and productivity.

6. (Forest Resources Measurement and Management) Ability to identify and measure land areas and conduct spatial analysis.

7. (Forest Resources Measurement and Management) Ability to design and implement comprehensive inventories that meet specific objectives using appropriate sampling methods and units of measurement.

8. (Forest Resources Measurement and Management) Ability to analyze inventory data and project future forest, stand, and tree conditions.

9. (Forest Resources Measurement and Management) Ability to develop and apply silvicultural prescriptions appropriate to management objectives, including methods of establishing and influencing the composition, growth, and quality of forests, and understand the impacts of those prescriptions.

10. (Forest Resources Measurement and Management) Ability to analyze the economic, environmental, and social consequences of forest resource management strategies and decisions.

11. (Forest Resources Measurement and Management) Ability to develop management plans with specific multiple objectives and constraints.

12. (Forest Resources Measurement and Management) Understanding of the valuation procedures, market forces, processing systems, transportation and harvesting activities that translate human demands for timber-based and other consumable forest products into the availability of those products.

13. (Forest Resources Measurement and Management) Understanding of the valuation procedures, market, and non-market forces that avail humans the opportunities to enjoy non-consumptive products and services of forests.

14. (Forest Resources Measurement and Management) Understanding of the administration, ownership, and organization of forest management enterprises.

15. (Forest Resource Policy, Economics, and Administration) Understanding of forest policy and the processes by which it is developed.

16. (Forest Resource Policy, Economics, and Administration) Understanding of how federal, state, and local laws and regulations govern the practice of forestry.

17. (Forest Resource Policy, Economics, and Administration) Ability to understand the integration of technical, financial, human resources, and legal aspects of public and private enterprises.

FOUR-YEAR PLAN

SAMPLE FOREST SCIENCE FOUR-YEAR PLAN

Freshman

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>F&amp;W ECOL 100</td>
<td>2</td>
<td>MATH 113 or 114</td>
<td>3</td>
</tr>
<tr>
<td>Economics Course</td>
<td>3-4</td>
<td>CHEM 103, 108, or 109</td>
<td>4-5</td>
</tr>
<tr>
<td>MATH 112, 113, or 114</td>
<td>3</td>
<td>BOTANY/BIOLOGY 130²</td>
<td>5</td>
</tr>
<tr>
<td>COMM A Course</td>
<td>3</td>
<td>Electives (to reach ~15 credits)</td>
<td>0-4</td>
</tr>
<tr>
<td>INTER-AG 155 (1st Yr Seminar)</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electives (to reach ~15 credits)¹</td>
<td>0-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12-16</td>
<td>12-17</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 24-33

Sophomore

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZOOLOGY/BIOLOGY 101 &amp; ZOOLOGY/ BIOLOGY 102</td>
<td>5</td>
<td>F&amp;W ECOL 300</td>
<td>4</td>
</tr>
<tr>
<td>SOIL SCI 301</td>
<td>4</td>
<td>GEOG/CIV ENGR/ ENVIR ST 377</td>
<td>4</td>
</tr>
<tr>
<td>F&amp;W ECOL/BOTANY 402</td>
<td>2</td>
<td>Statistics Courses</td>
<td>9</td>
</tr>
</tbody>
</table>

1. Includes units from Electives.
2. Must be completed with a grade of C or better.

¹Electives must be approved by the School of Natural Resources.
²Biology coursework should be completed before entering the upper-division curriculum.
F&W ECOL 415 3

Total Credits 31

Sophomore
Spring
F&W ECOL 658 (even #d summers) 3

Total Credits 3

Junior
Fall Credits
F&W ECOL 550 3
F&W ECOL/ENTOM 500 2
Track Course 3
Elective Courses 4

Spring Credits
F&W ECOL 410 3
F&W ECOL 501 (odd springs only) 1
Track Course 3
Elective Courses 6

Total Credits 25

Junior
Summer Credits
F&W ECOL 399 4 1

Total Credits 1

Senior
Fall Credits
F&W ECOL 590 3
F&W ECOL/HORT/LAND ARC/PL PATH 309 3
Conservation Course (or spring) 2-4

Spring Credits
Track Course 3
Electives (to reach ~15 credits) 3

Total Credits 30-32

When choosing electives, students should first consider UW and CALS requirements (ethnic studies, humanities, social science, international studies, etc.)

BOTANY/BIOLOGY 130 + ZOOLOGY/BIOLOGY 101 & ZOOLOGY/BIOLOGY 102 are strongly recommended to satisfy the introductory biology requirement for forest science, but students may use ZOOLOGY/BIOLOGY 101 & ZOOLOGY/BIOLOGY 102.

F&W ECOL/ENVIR ST/G L E/GEOG/GEOSCI/LAND ARC 371 is available in fall semesters only.

Summer (following second or third year): F&W ECOL 658 (3 cr., even-numbered summers) and F&W ECOL 399 (1 cr.)—4 cr. total.

Students may reduce the number of required courses via: testing out of Comm-A; using ZOOLOGY/BIOLOGY/BOTANY 152 to satisfy Comm-B; testing out of Quantitative Reasoning, Part A; earning AP/IB credits; and/or using F&W ECOL/ENVIR ST/ZOOLOGY 360 to satisfy International Studies requirement.

ADVISING AND CAREERS

UNDERGRADUATE ADVISING IN FOREST SCIENCE

All undergraduate students are assigned to an advisor when they declare the major. Undergraduates in forest science are required to meet with their advisor before they can enroll for the upcoming term. Please remember to bring a DARS report with you to any advising appointment. You can request a DARS through your student center in MyUW (http://my.wisc.edu). Although drop-ins and emergencies may be accommodated by someone in the department, the student is best served by making an appointment with the assigned advisor.

CAREERS AND PROFESSIONAL DEVELOPMENT

For more information on careers available to forest science and wildlife ecology students, please visit our Internship & Job Resources page (https://forestandwildlifeecology.wisc.edu/academics/undergraduate-programs/internship-job-resources). For more information on other academic, co-curricular, financial aid, and career opportunities and services available to forest science B.S. students, please visit the CALS Career Services page (https://cals.wisc.edu/academics/undergraduate-students/career-services). The federal Bureau of Labor Statistics updated its Career Outlook: Careers in Forestry page in August 2016 and it gives a great overview of the types of jobs related to forestry. This website is an excellent way to learn more about careers in forestry, upcoming trends, and related careers.

PEOPLE

PROFESSORS
Bowe, Scott
Drake, David
Karasov, William
Kruger, Eric
Mladenoff, David
Radeloff, Volker
Ribic, Christine
Rickenbach, Mark (chair)
Samuel, Michael
Stanosz, Glen
Townsend, Philip
Van Deelen, Timothy

ASSOCIATE PROFESSORS
Lutz, R. Scott
Ozdogan, Mutlu
Pauli, Jonathan
Peery, M. Zach
Pidgeon, Anna
Rissman, Adena
ASSISTANT PROFESSORS
Johnston, Craig
Zuckerberg, Benjamin

AFFILIATED AND ADJUNCT FACULTY
Alix-Garcia, Jennifer (Agriculture and Applied Economics)
Allison, R. Bruce (adjunct)
Balster, Nick (Soil Science)
Lindroth, Richard (Entomology)
Marin-Spiotta, Erika (Geography)
Meine, Curt (adjunct)
Meyer, Michael (adjunct)
Raffa, Kenneth (Entomology)
Santana-Castellon, Eduardo (adjunct)

FACULTY ASSOCIATE
Berkelman, James

FORESTRY FIELD CAMP AT THE KEMP NATURAL RESOURCES STATION
F&W ECOL 658 Forest Resources Practicum is an intensive, three-week field course conducted in even-numbered years at the Kemp Natural Resources Station (http://www.kemp.wisc.edu) in Woodruff, Wisconsin. Affectionately known as Forestry Camp, F&W ECOL 658 Forest Resources Practicum introduces students to the complexities of forest ecosystems. Through a series of integrated exercises, students learn first hand about forest ecosystem structure, function, processes, and services. Along the way students develop the knowledge necessary to conduct a comprehensive forest resource assessment. Subject areas include: basic field skills, plant identification, GPS & GIS, timber cruising, forest soils, wildlife identification and survey methods, forest ecology, and forest habitat classification. Forestry Camp also provides students with opportunities to work closely with faculty and “real world” natural resource professionals in a beautiful north woods setting.

INTERNSHIPS
All forest science students are required to complete either an internship or professional work experience for their degree. Students are encouraged to talk to their advisor about internship possibilities and departmental internship policies. In order to receive credit for an internship for the forest science major, students must find an internship, get it approved by their advisor through the agreement form (http://forestandwildlifeecology.triforce.cals.wisc.edu/wp-content/uploads/sites/111/2017/07/internship_agreement_form_1182.docx), and enroll in F&W ECOL 675 Professional Development in Forest & Wildlife Ecology in the following fall semester. These steps need to be completed by May 15. Students who have questions about the internship can also talk to Sara Rodock (rodock@wisc.edu), the student services coordinator.

INDEPENDENT STUDY CREDITS
Any student completing either F&W ECOL 299 Independent Study or F&W ECOL 699 Special Problems credits is required to complete the Forest & Wildlife Ecology Independent Study Agreement form (http://forestandwildlifeecology.triforce.cals.wisc.edu/wp-content/uploads/sites/111/2017/07/IS_agreement_form_fwe_1176.docx) with the independent study instructor. A copy of this form should be kept by both the student and the instructor.

FORESTRY CLUB
Forest science undergraduates have an active student organization called the Forestry Club. For more information on the club and their activities, please see their website (http://labs.russell.wisc.edu/forestryclub) or their Facebook Page (http://go.wisc.edu/pq634x).

ACCREDITATION

Accreditation
Society of American Foresters (https://www.eforester.org)