

# CONSERVATION BIOLOGY, 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>
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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 LETTERS & SCIENCE DEGREE REQUIREMENTS: BACHELOR OF SCIENCE (B.S.)

Students pursuing a Bachelor of Science degree in the College of Letters & Science must complete all of the requirements below. The College of Letters & Science allows this major to be paired with either the Bachelor of Arts or the Bachelor of Science degree requirements.

### BACHELOR OF SCIENCE DEGREE REQUIREMENTS

**Mathematics** Complete two courses of 3+ credits at the Intermediate or Advanced level in MATH, COMP SCI, or STAT subjects. A maximum of one course in each of COMP SCI and STAT subjects counts toward this requirement.

**Foreign Language** Complete the third unit of a foreign language.

**L&S Breadth Complete:**

- 12 credits of Humanities, which must include at least 6 credits of Literature; and
- 12 credits of Social Science; and
- 12 credits of Natural Science, which must include 6 credits of Biological Science and 6 credits of Physical Science.

Liberal Arts and Science Coursework	Complete at least 108 credits.
Depth of Intermediate/Advanced Coursework	Complete at least 60 credits at the Intermediate or Advanced level.
Major	Declare and complete at least one major.
Total Credits	Complete at least 120 credits.
UW–Madison Experience	Complete both: <ul style="list-style-type: none"> <li>• 30 credits in residence, overall, and</li> <li>• 30 credits in residence after the 86th credit.</li> </ul>
Quality of Work	<ul style="list-style-type: none"> <li>• 2.000 in all coursework at UW–Madison</li> <li>• 2.000 in Intermediate/Advanced level coursework at UW–Madison</li> </ul>

### NON–L&S STUDENTS PURSUING AN L&S MAJOR

Non–L&S students who have permission from their school/college to pursue an additional major within L&S only need to fulfill the major requirements. They do not need to complete the L&S Degree Requirements above.

### REQUIREMENTS FOR THE MAJOR

Conservation biology majors must take at least **50 credits** in the major. When selecting courses to meet major requirements, students are encouraged to meet with their Academic Advising Manager to discuss courses that align with their areas of academic interest.

### INTRODUCTORY COURSES

Code	Title	Credits
<b>Introductory Biology</b>		<b>10</b>
Complete one of the following options:		
<i>Option 1:</i>		
BIOLOGY/ ZOOLOGY 101	Animal Biology	
BIOLOGY/ ZOOLOGY 102	Animal Biology Laboratory	
BIOLOGY/ BOTANY 130	General Botany	
<i>Option 2:</i>		
BIOLOGY/ BOTANY/ ZOOLOGY 151	Introductory Biology	
BIOLOGY/ BOTANY/ ZOOLOGY 152	Introductory Biology	
<i>Option 3:</i>		
Complete at least 10 credits from the following:		
BIOCORE 381	Evolution, Ecology, and Genetics	

BIOCORE 382	Evolution, Ecology, and Genetics Laboratory
BIOCORE 383	Cellular Biology
BIOCORE 384	Cellular Biology Laboratory
BIOCORE 485	Principles of Physiology
BIOCORE 486	Principles of Physiology Laboratory

**Chemistry 4-5**

Complete one of the following:

CHEM 103	General Chemistry I
CHEM 108	Chemistry in Our World
CHEM 109	Advanced General Chemistry (for those who might take more chemistry)

**Physical Environment 3-5**

Complete one of the following:

ATM OCN/ GEOSCI 105	Survey of Oceanography
ENVIR ST/ GEOSCI 106	Environmental Geology
ENVIR ST/ GEOG 120	Introduction to the Earth System
ENVIR ST/ GEOG 127	Physical Systems of the Environment
GEOSCI 100	Introductory Geology: How the Earth Works

**Ecology and Evolution 6-7**

Complete two of the following, each from a different category (students are encouraged to take courses in all three areas):

*Ecology:*

BOTANY/ F&W ECOL/ ZOOLOGY 460	General Ecology
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*Evolution:*

GEOSCI 110	Evolution and Extinction
or ANTHRO/ BOTANY/ ZOOLOGY 410	Evolutionary Biology

*Extinction:*

ENVIR ST/F&W ECOL/ZOOLOGY 360	Extinction of Species
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**Statistics 3**

Complete one of the following:

STAT 240	Data Science Modeling I
STAT 301	Introduction to Statistical Methods
STAT 371	Introductory Applied Statistics for the Life Sciences

**SPECIES & FIELD BIOLOGY****Code Title Credits**

Complete 12 credits from:

AGRONOMY/ BOTANY/ SOIL SCI 370	Grassland Ecology	
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ENTOM/ ZOOLOGY 371	Medical Entomology	
AN SCI/ F&W ECOL/ ZOOLOGY 520	Ornithology	
AN SCI/ F&W ECOL/ ZOOLOGY 521	Birds of Southern Wisconsin	
ANTHRO 391	Bones for the Archaeologist	
ANTHRO 420	Introduction to Primatological Research	
ANTHRO 458	Primate Behavioral Ecology	
ANTHRO 668	Primate Conservation	
BOTANY 330	Algae	
BOTANY/ PL PATH 332	Fungi	
BOTANY 400	Plant Systematics	
BOTANY 401	Vascular Flora of Wisconsin	
BOTANY/ F&W ECOL 402	Dendrology: Woody Plant Identification and Ecology	
BOTANY 422	Plant Geography	
BOTANY/ F&W ECOL 455	The Vegetation of Wisconsin	
BOTANY/ ENTOM/ ZOOLOGY 473	Plant-Insect Interactions	
ENTOM/ ZOOLOGY 302	Introduction to Entomology	
ENTOM 331	Taxonomy of Mature Insects	
ENTOM 432	Taxonomy and Bionomics of Immature Insects	
ENTOM 468	Studies in Field Entomology	
ENVIR ST/ ZOOLOGY 315	Limnology-Conservation of Aquatic Resources	
ENVIR ST 375	Field Ecology Workshop	
ENVIR ST/ ZOOLOGY 510	Ecology of Fishes	
ENVIR ST/ ZOOLOGY 511	Ecology of Fishes Lab	
F&W ECOL 306	Terrestrial Vertebrates: Life History and Ecology	
F&W ECOL 401	Physiological Animal Ecology	
F&W ECOL/ SURG SCI 548	Diseases of Wildlife	
F&W ECOL 655	Animal Population Dynamics	
GEOSCI/ ZOOLOGY 541	Paleobiology	
GEOSCI/ ZOOLOGY 542	Invertebrate Paleontology	
LAND ARC/ ENVIR ST 361	Wetlands Ecology	
LAND ARC/ ENVIR ST 581	Prescribed Fire: Ecology and Implementation	
MICROBIO 303	Biology of Microorganisms	
MICROBIO 304	Biology of Microorganisms Laboratory	

M M & I/ENTOM/ PATH-BIO/ ZOOLOGY 350	Parasitology
PSYCH 449 or ZOOLOGY 42	Animal Behavior <sup>1</sup> Behavioral Ecology
PSYCH 450	Primate Psychology: Insights into Human Behavior
ZOOLOGY 304	Marine Biology
ZOOLOGY/ ENVIR ST 315	Limnology-Conservation of Aquatic Resources
ZOOLOGY 316	Laboratory for Limnology-Conservation of Aquatic Resources
ZOOLOGY 430	Comparative Anatomy of Vertebrates

**ELECTIVES**

Code	Title	Credits
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**Social Science Electives**  
Complete at least one 3 credit course from Social Science elective list:

A A E 215	Introduction to Agricultural and Applied Economics	
A A E/ ENVIR ST 244	The Environment and the Global Economy	
AMER IND/ GEOG 410	Critical Indigenous Ecological Knowledges	
BOTANY/ AMER IND/ ANTHRO 474	Ethnobotany	
C&E SOC/ SOC 140	Introduction to Community and Environmental Sociology	
C&E SOC/ F&W ECOL/ SOC 248	Environment, Natural Resources, and Society	
ECON 101	Principles of Microeconomics	
ECON/ENVIR ST/ POLI SCI/ URB R PL 449	Government and Natural Resources	
ENVIR ST/ GEOG 139	Global Environmental Issues	
ENVIR ST/ AMER IND 306	Indigenous Peoples and the Environment	
ENVIR ST/ GEOG 339	Environmental Conservation	
ENVIR ST/ PHILOS 441	Environmental Ethics	
ENVIR ST/GEOG/ HISTORY 460	American Environmental History	
ENVIR ST/GEOG/ HISTORY 469	The Making of the American Landscape	
GEOG 344	Changing Landscapes of the American West	
GEOG 359	Australia: Environment and Society	
GEOG 538	The Humid Tropics: Ecology, Subsistence, and Development	

LAND ARC 363	Earth Partnership: Restoration Education for Equity and Resilience
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**Electives to attain 50 credits in the major**

AGRONOMY/ HORT 376	Tropical Horticultural Systems
ANTHRO 405	Introduction to Museum Studies in Anthropology
ATM OCN 100	Weather and Climate
ATM OCN 101	Weather and Climate
ATM OCN/ ENVIR ST 171	Global Change: Atmospheric Issues and Problems
BOTANY/ PL PATH 123	Plants, Parasites, and People
BOTANY/ ENVIR ST/ ZOOLOGY 260	Introductory Ecology
BOTANY 300	Plant Anatomy
BOTANY 305	Plant Morphology and Evolution
BOTANY/ ZOOLOGY 450	Midwestern Ecological Issues: A Case Study Approach
BOTANY/ ENTOM/ PL PATH 505	Plant-Microbe Interactions: Molecular and Ecological Aspects
BOTANY/ ENVIR ST/ F&W ECOL/ ZOOLOGY 651	Conservation Biology
C&E SOC/ ENVIR ST/ GEOG 434	People, Wildlife and Landscapes
ENTOM/ ENVIR ST 201	Insects and Human Culture-a Survey Course in Entomology
ENTOM/ ZOOLOGY 540	Theoretical Ecology
ENTOM 699	Special Problems
ENVIR ST/ILS 126	Principles of Environmental Science
ENVIR ST/GEOG/ SOIL SCI 230	Soil: Ecosystem and Resource
ENVIR ST 307	Literature of the Environment: Speaking for Nature
ENVIR ST/ SOIL SCI 324	Soils and Environmental Quality
ENVIR ST/ CIV ENGR/ GEOG 377	An Introduction to Geographic Information Systems
ENVIR ST/ POP HLTH 471	Introduction to Environmental Health
ENVIR ST/ F&W ECOL 515	Natural Resources Policy
ENVIR ST/ GEOG 537	Culture and Environment
ENVIR ST/ SOIL SCI 575	Assessment of Environmental Impact
F&W ECOL/ ZOOLOGY 335	Human/Animal Relationships: Biological and Philosophical Issues

F&W ECOL 375	Special Topics (Freshwater Conservation)
F&W ECOL 410	Principles of Silviculture
F&W ECOL 561	Wildlife Management Techniques
F&W ECOL/ LAND ARC/ ZOOLOGY 565	Principles of Landscape Ecology
F&W ECOL 699	Special Problems
GENETICS 466	Principles of Genetics
GENETICS 467	General Genetics 1
GEOG/ GEOSCI 420	Glacial and Pleistocene Geology
GEOSCI/ G L E 627	Hydrogeology
LAND ARC 211	Shaping the Built Environment
MICROBIO 101	General Microbiology
MICROBIO 102	General Microbiology Laboratory
PL PATH 300	Introduction to Plant Pathology
PL PATH 315	Plant Microbiomes
SOIL SCI 301	General Soil Science
ZOOLOGY 405	Introduction to Museum Studies in the Natural Sciences

## RESIDENCE AND QUALITY OF WORK

- 2.000 GPA in all major courses
- 2.000 GPA on 15 upper-level major credits, taken in residence <sup>2</sup>
- 15 credits in the major, taken on the UW–Madison campus

## HONORS IN THE MAJOR

Students may declare Honors in the Conservation Biology Major in consultation with the Conservation Biology undergraduate advisor.

## HONORS IN THE CONSERVATION BIOLOGY MAJOR REQUIREMENTS

To earn Honors in the Major in Conservation Biology, students must satisfy both the requirements for the major (above) and the following additional requirements:

- Earn a 3.300 overall university GPA
- Complete at least 16 credits, taken for Honors, with a grade of B or better, in the conservation biology major, to include a two-semester Senior Honors Thesis in an appropriate department <sup>3</sup>

## FOOTNOTES

1

Students may NOT apply both ZOOLOGY 425 Behavioral Ecology and PSYCH 449 Animal Behavior in the conservation biology program.

2

Courses in the major numbered 300 through 699 are considered upper level.

3

Examples include Botany, Zoology, Environmental Studies; see the Conservation Biology advisor to verify that your thesis department will be acceptable.

## 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.