

BIOLOGY, BS (CALs)

REQUIREMENTS

UNIVERSITY REQUIREMENTS

All undergraduate students must complete both the following Core General Education (Core GenEd) and University Degree and Quality of Work requirements. The requirements below apply to students whose first term at UW-Madison or whose earliest post-high school college attendance at any institution is Summer 2026 or later.

Students whose first term at UW-Madison or whose earliest post-high school college attendance at any institution occurred before Summer 2026 should refer to the archived Guide (<https://guide.wisc.edu/archive/>) for the requirements that apply to them.

CORE GENERAL EDUCATION (CORE GENED) REQUIREMENTS

Civics & Perspectives 3 credits of Civics & Perspectives coursework.

Communication & Literacy 6 credits of Communication & Literacy coursework. This requirement may be partially satisfied by a qualifying placement test score. More information: <https://go.wisc.edu/qualifyingenglishplacement> (<https://go.wisc.edu/qualifyingenglishplacement/>)

Humanities & Arts 6 credits of Humanities & Arts coursework.

Mathematics & Quantitative Reasoning 6 credits of Mathematics & Quantitative Reasoning coursework. This requirement may be partially satisfied by a qualifying placement test score. More information: <https://go.wisc.edu/qualifyingmathplacement> (<https://go.wisc.edu/qualifyingmathplacement/>)

Natural Science & Wellness Complete both:

- 6 credits of Natural Science & Wellness or Natural Science & Wellness + Laboratory coursework.
- one course must be in Natural Science & Wellness + Laboratory coursework.

Social & Behavioral Science 3 credits of Social & Behavioral Science coursework.

Total Credits 30 credits.

For more information see the policy (<https://policy.wisc.edu/library/UW-1095/>).

UNIVERSITY DEGREE AND QUALITY OF WORK REQUIREMENTS

All undergraduate degree recipients must complete the following minimum requirements. Requirements for some programs will exceed these requirements; see program requirements for additional information.

Total Degree 120 degree credits.

Residency Complete 30 credits in residence. A course is considered "in residence" if it is taken when in undergraduate degree-seeking status and:

- is offered by UW-Madison and completed on the UW-Madison campus or at an approved off-site location, or
- is offered by UW-Madison in an online or distance format, or is completed during participation in a UW-Madison study abroad/study away program.

Quality of Work Achieve at least the minimum grade point average specified by the school, college, and/or academic program.

Math Demonstrate minimal mathematics competence by:

- placing above MATH 96, or
- successfully completing MATH 96, or
- successfully completing a more advanced mathematics course such as MATH 112, MATH 113, MATH 114, MATH 141, MATH 211, or MATH 221.

English Language If required to take the UW-Madison English as a Second Language Assessment Test (MSN-ESLAT), demonstrate minimal English language competence by:

- earning credit for ESL 118, or
- achieving a qualifying MSN-ESLAT placement test score.

Language Complete one:

- 2 high school units of a single language other than English, or
- one course with the second semester Language designation.

Major Declaration Declare and complete the requirements for at least one major.

COLLEGE OF AGRICULTURAL AND LIFE SCIENCES REQUIREMENTS

CALS GRADUATION REQUIREMENTS

Cumulative Credits

- Students must earn 120 degree credits.
- Students declared in Biological Systems Engineering BS must earn 125 degree 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.

In addition to the university's general requirements, all undergraduate students in CALS must satisfy a set of college and major requirements. Courses may not double count within university requirements, CALS college requirements, or major requirements. A course may count toward university requirements and a college and/or a major requirement; similarly, a course counted toward college requirements may also be used to satisfy a university and/or a major requirement.

CALS COLLEGE REQUIREMENTS

CALS First-Year Seminar 1 credit. See the full list of eligible courses below or use this link: <https://go.wisc.edu/calsfirstyearseminars> (<https://go.wisc.edu/calsfirstyearseminars/>)

Ethnic Studies 3 credits with the Ethnic Studies designation.

Communication A Complete either:
 • 1 course with the Communication A designation, or
 • satisfaction of Communication A based on UW Placement Test.

Quantitative Reasoning A Complete either:
 • 1 course with the Quantitative Reasoning A designation, or
 • satisfaction of Quantitative Reasoning A based on UW Placement Test.

Introductory Chemistry Complete one:
 • CHEM 103
 • CHEM 108
 • CHEM 109

CALS International Comparisons 3 credits. See the full list of eligible courses below or use this link: <https://go.wisc.edu/calsinternationalcomparisons> (<https://go.wisc.edu/calsinternationalcomparisons/>)

Communication B 1 course with the Communication B designation.

Quantitative Reasoning B 1 course with the Quantitative Reasoning B designation.

Biological Science 5 credits with the Biological Science designation.

Additional Science 3 credits with the Biological, Physical, or Natural Science designations.

Science Breadth 3 credits with the Biological, Physical, Natural, or Social Science designations.

Humanities 6 credits with the Humanities or Literature designation.

Social Sciences 3 credits with the Social Sciences designation.

Capstone Learning Experience Each major articulates the required capstone learning experience.

CALS First-Year Seminars

Code	Title	Credits
AN SCI 135	Grand Challenges and Career Opportunities in Animal and Dairy Sciences	1
BIOCHEM 100	Biochemistry First-Year Seminar	1
COUN PSY 125	The Wisconsin Experience Seminar	1
F&W ECOL 101	Orientation to Wildlife Ecology	1
F&W ECOL 105	Environment, Pollutants, and You	3
GENETICS 155	Freshman Seminar in Genetics	1
INTEGSCI 100	Exploring Biology	2
INTEGSCI 140	Exploring Service in STEM	1
INTER-AG 155	Issues in Agriculture, Environment, and Life Sciences	1

LSC 155	First-Year Seminar in Science Communication	1
MICROBIO 150	Microbiomes and Microbiology - First-Year Seminar	1
PLANTSCI/AGROECOL 100	First-Year Seminar in Agroecology and Plant Science	1
PL PATH 155	Food Frontlines: Security, Sustainability, and Survival	1
SOIL SCI 155	First-year Seminar in Soil and Environmental Sciences	1

Learning Community/Student Group Courses

The following learning community/student group courses are approved as CALS First-Year Seminars.

COUN PSY 117	PEOPLE First Year Seminar	1
INTEGSCI 110	BioHouse Seminar: Biology for the 21st Century	1
INTER-AG 117	GreenHouse Roots Seminar	1
INTER-AG 140	CALS QuickStart: Foundations	1
INTER-AG 175	WISE Seminar	1

CALS International Comparisons

Code	Title	Credits
The 3 credit requirement may be fulfilled as either a stand-alone 3 credit course or as a set of courses as listed below.		
A A E/ENVIR ST 244	The Environment and the Global Economy	4
A A E 319	The International Agricultural Economy	3
A A E/NUTR SCI 350	World Hunger and Malnutrition	3
A A E 352	Global Health: Economics, Natural Systems, and Policy (approved for enrollments Summer 2021 and later)	4
A A E/INTL ST 373	Globalization, Poverty and Development	3
A A E/INTL ST 374	The Growth and Development of Nations in the Global Economy	3
A A E/ECON 473	Economic Growth and Development in Southeast Asia	3
A A E/ECON 474	Economic Problems of Developing Areas	3
A A E/ECON/INTL BUS 462	Latin American Economic Development	3
A A E/ECON 477	Agricultural and Economic Development in Africa	3
AGROECOL 377	Global Food Production and Health	3
AN SCI/DY SCI 370	Livestock Production and Health in Agricultural Development	3
ASIAN/HISTORY/POLI SCI 255	Introduction to East Asian Civilizations (approved for enrollments Summer 2021 and later)	3-4
C&E SOC/SOC 341	Labor in Global Food Systems (approved for enrollments Summer 2020 and later)	3
C&E SOC/ENVIR ST/SOC 540	Sociology of International Development, Environment, and Sustainability	3

CSCS 500	Global Health and Communities: From Research to Praxis	3
DY SCI 471	Food Production Systems and Sustainability	3
ENTOM/ ENVIR ST 201	Insects and Human Culture—a Survey Course in Entomology	3
ENTOM/ ENVIR ST 205	Our Planet, Our Health (approved for enrollments Fall 2026 and later)	3
ENTOM/ ZOOLOGY 371	Medical Entomology: Biology of Vector and Vector-borne Diseases	3
F&W ECOL/ ENVIR ST 100	Forests of the World (approved for enrollments Summer 2020 and later)	3
F&W ECOL/ ENVIR ST/ ZOOLOGY 360	Extinction of Species	3
LSC 251	Science, Media and Society (approved for enrollments Summer 2020 and later)	3
PL PATH/ BOTANY 123	Plants, Parasites, and People	3
PL PATH 311	Global Food Security	3
PLANTSCI 370	World Vegetable Crops	3
The following study abroad courses fulfill the CALS International Comparisons requirement. Only the specific course numbers and titles listed, including Topics titles (in parentheses), are approved to meet the CALS International Comparisons requirement.		
BIOCHEM 307	Study Abroad: Introduction to Biological Sciences Research in Japan (approved for enrollments Fall 2026 and later)	3
NUTR SCI/INTER- AG 421	Global Health Field Experience (UW Mobile Clinics and Health Care in Uganda)	3
INTER-AG 321 & INTER-AG/ NUTR SCI 421	Study Abroad Pre-Departure Seminar and Global Health Field Experience (UW Global Health Community Health and Asset-Based Community Development in Sri Lanka)	3
INTER-AG 321 & INTER-AG/ NUTR SCI 421	Study Abroad Pre-Departure Seminar and Global Health Field Experience (UW Agriculture, Health and Nutrition in Uganda)	3
INTER-AG/ NUTR SCI 421	Global Health Field Experience (UW Health, Education and Tanzanian Culture)	3

REQUIREMENTS FOR THE MAJOR

A minimum of 15 credits must be completed in the major that are not used elsewhere. Students must complete a minimum of 31 credits of biological science courses within the introductory biology, foundation course, upper-level breadth in the major, and capstone requirements. Unless specifically stated otherwise, courses may not be used to meet multiple requirements of the major.

In addition to the standard Biology major, there is a Named Option in Evolutionary Biology. Students may complete only one Biology major/named option and must declare the option they are pursuing.

CORE REQUIREMENTS

Mathematics and Statistics

Code	Title	Credits
Complete one of the following:		
MATH 221	Calculus and Analytic Geometry 1	4-5
MATH 211	Survey of Calculus 1	
Complete one of the following:		
STAT 240	Data Science Modeling I	3-4
STAT 301	Introduction to Statistical Methods	
STAT 324	Introduction to Statistics for Science and Engineering	
STAT 371	Introductory Applied Statistics for the Life Sciences	
Total Credits		7-9

Chemistry

Code	Title	Credits
General Chemistry (Complete one of the following):		
CHEM 103 & CHEM 104	General Chemistry I and General Chemistry II	5-10
CHEM 109	Advanced General Chemistry	
CHEM 115 & CHEM 116	Chemical Principles I and Chemical Principles II	
Organic Chemistry		
CHEM 343	Organic Chemistry I	3
CHEM 344	Introductory Organic Chemistry Laboratory	2
CHEM 345	Organic Chemistry II	3
Total Credits		13-18

Physics

Code	Title	Credits
First Semester Physics (complete one of the following):		
PHYSICS 103	General Physics	4-5
PHYSICS 201	General Physics	
PHYSICS 207	General Physics	
Second Semester Physics (complete one of the following):		
PHYSICS 104	General Physics	4-5
PHYSICS 202	General Physics	
PHYSICS 208	General Physics	
Total Credits		8-10

Introductory Biology

Code	Title	Credits
Select one of the following options:		
Option A:		
BIOLOGY/ BOTANY/ ZOOLOGY 151	Introductory Biology	10-13
BIOLOGY/ BOTANY/ ZOOLOGY 152	Introductory Biology	

Option B:

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

Option C:

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

Total Credits **10-13**

Foundation Course (complete one of the following):

Students may use BIOCORE 381 and BIOCORE 383 toward both introductory biology and foundation.

Code	Title	Credits
BIOCHEM 501	Introduction to Biochemistry	3
BIOCHEM 508	General Biochemistry II	3-4
BIOCORE 381 & BIOCORE 383	Evolution, Ecology, and Genetics and Cellular Biology	6
GENETICS 466	Principles of Genetics	3
GENETICS 468	General Genetics 2	3
MICROBIO 470	Microbial Genetics & Molecular Machines	3

UPPER-LEVEL BREADTH IN THE MAJOR

Minimum of 13 credits required and must include one approved lab course. Approved lab courses are identified as approved in parentheses after the course title in the list below. A course taken to meet the foundation requirement may not also count as an upper-level breadth course.

- Complete at least two credits from either category A or B.
- Complete at least two credits from either category C or D.
- Complete at least two credits from an unused category (A, B, C, D, or E).

A. Cellular and Molecular Biology

Code	Title	Credits
AN SCI 336	Animal Growth and Development	3
AN SCI 362	Veterinary Genetics	3
AN SCI 366	Concepts in Genomics	3
BIOCHEM 501	Introduction to Biochemistry	3
BIOCHEM 507	General Biochemistry I	3
BIOCHEM 508	General Biochemistry II	3-4
BIOCHEM/ NUTR SCI 510	Nutritional Biochemistry and Metabolism	3
BIOCHEM/ NUTR SCI 560	Principles of Human Disease and Biotechnology	2
BIOCHEM/ M M & I 575	Biology of Viruses	2
BIOCHEM 601	Protein and Enzyme Structure and Function	2

BIOCHEM/ GENETICS/ MICROBIO 612	Prokaryotic Molecular Biology	3
BIOCHEM/ GENETICS/ MD GENET 620	Eukaryotic Molecular Biology	3
BIOCHEM/ BOTANY 621	Plant Biochemistry	3
BIOCHEM 625	Mechanisms of Action of Vitamins and Minerals	2
BIOCHEM/ GENETICS 631	Plant Genetics and Development	3
BMOLCHEM/ MICROBIO 668	Microbiology at Atomic Resolution	3
BOTANY/ENTOM/ PL PATH 505	Plant-Microbe Interactions: Molecular and Ecological Aspects	3
CRB 640	Fundamentals of Stem Cell and Regenerative Biology	3
CRB 670	Biology of Cardiac Function and Disease	3
DERM 601	Skin Biology and Skin Diseases	3
DERM 602	Advances in Skin Biology and Skin Diseases	2
GENETICS 466	Principles of Genetics	3
GENETICS 467	General Genetics 1	3
GENETICS 520	Neurogenetics	3
GENETICS 525	Epigenetics	3
GENETICS 527	Developmental Genetics for Conservation and Regeneration	3
GENETICS 588	Immunogenetics	3
GENETICS 605	Clinical Cases in Medical Genetics	3
GENETICS 627	Animal Developmental Genetics	3
GENETICS/ NEURODPT 650	Functional Genomics of Brain Disorders	3
GENETICS/ MD GENET 662	Cancer Genetics	3
H ONCOL/ MED PHYS 410	Radiobiology	2-3
MICROBIO 345	Introduction to Disease Biology	3
MICROBIO 470	Microbial Genetics & Molecular Machines	3
MICROBIO/ SOIL SCI 523	Soil Microbiology and Biochemistry	3
MICROBIO 626	Microbial and Cellular Metabolomics	3
M M & I 341	Immunology	3
M M & I/PATH- BIO 528	Immunology	3
NEURODPT/ NTP 610	Cellular and Molecular Neuroscience	4
NEURODPT 629	Molecular and Cellular Mechanisms of Memory	3
ONCOLOGY/ M M & I/ PL PATH 640	General Virology-Multiplication of Viruses	3

PHM SCI 254	Tiny Earth Genomics - Researching Uncultured Antibiotic-Producing Microbes (approved lab course)	3
PHM SCI 558	Laboratory Techniques in Pharmacology and Toxicology (approved lab course)	2
PLANTSCI 340	Plant Genome Engineering and Editing	3
ZOOLOGY 370	General Molecular Biology	3
ZOOLOGY 444	Neuronal Cell Biology in Health and Disease	2
ZOOLOGY 470	Introduction to Animal Development	3
ZOOLOGY/ PSYCH 523	Neurobiology	3
ZOOLOGY 555	Laboratory in Developmental Biology (approved lab course)	3
ZOOLOGY 570	Cell Biology	3
ZOOLOGY 604	Computer-based Gene and Disease/Disorder Research Lab (approved lab course)	2
ZOOLOGY 655	Modeling Neurodevelopmental Disease	3

B. Organismal Biology

Code	Title	Credits
AN SCI/DY SCI 373	Animal Physiology	3
AN SCI 377	Integrative Animal Physiology Laboratory (approved lab course)	1
AN SCI/DY SCI 434	Reproductive Physiology (approved lab course)	3
ANAT&PHY 335	Physiology (approved lab course)	5
ANAT&PHY 337	Human Anatomy	3
ANAT&PHY 338	Human Anatomy Laboratory (approved lab course)	2
ANAT&PHY 435	Fundamentals of Human Physiology (approved lab course)	5
ANTHRO/PSYCH/ ZOOLOGY 619	Biology of Mind	3
BIOCORE 486	Principles of Physiology Laboratory (approved lab course)	2
BOTANY 300	Plant Anatomy (approved lab course)	4
BOTANY 330	Algae (approved lab course)	3
BOTANY/ PL PATH 332	Fungi (approved lab course)	4
BOTANY/ PL PATH 333	Biology of the Fungi	2
BOTANY/ F&W ECOL 402	Dendrology: Woody Plant Identification and Ecology (approved lab course)	3
BOTANY 500	Plant Physiology (approved lab course)	3-4
CS&D 503	Neural Mechanisms of Speech, Hearing and Language	3
DY SCI 378	Lactation Physiology (approved lab course)	3

ENTOM/ ZOOLOGY 302	Introduction to Entomology (approved lab course)	4
ENTOM 321	Physiology of Insects	3
ENTOM 331	Taxonomy of Mature Insects (approved lab course)	4
F&W ECOL/ ZOOLOGY 520	Ornithology	3
F&W ECOL/ ZOOLOGY 521	Birds of Southern Wisconsin	3
GENETICS 545	Genetics Laboratory (approved lab course)	2
GENETICS/ MD GENET 565	Human Genetics	3
GEOSCI/ ZOOLOGY 542	Invertebrate Paleontology	3
KINES 314	Physiology of Exercise (approved lab course)	4
MICROBIO 303	Biology of Microorganisms	3
MICROBIO 304	Biology of Microorganisms Laboratory (approved lab course)	2
MICROBIO 526	Physiology of Microorganisms	3
M M & I 301	Pathogenic Bacteriology	2
M M & I/ENTOM/ PATH-BIO/ ZOOLOGY 350	Parasitology	3
NTP/NEURODPT/ PSYCH 611	Systems Neuroscience	4
NUTR SCI 431	Nutrition in the Life Span	3
NUTR SCI 631	Clinical Nutrition I	3
ONCOLOGY 401	Introduction to Experimental Oncology	2
PATH 404	Pathophysiologic Principles of Human Diseases	3
PSYCH 406	Psychology of Perception	3-4
PSYCH 414	Cognitive Psychology	3
PSYCH 454	Behavioral Neuroscience	3
PSYCH 513	Hormones, Brain, and Behavior	4
ZOOLOGY 303	Aquatic Invertebrate Biology	3
ZOOLOGY 403	Endocrinology	3
ZOOLOGY 430	Comparative Anatomy of Vertebrates (approved lab course)	5
ZOOLOGY 611	Comparative and Evolutionary Physiology	3
ZOOLOGY 612	Comparative Physiology Laboratory (approved lab course)	2
ZOOLOGY 620	Neuroethology Seminar	2

C. Ecology

Code	Title	Credits
AGROECOL 370	Grassland Ecology	3
ANTHRO 444	Primate Nutritional Ecology	3
AN SCI 420	Microbiomes of Animal Systems	3
BOTANY/ ZOOLOGY 450	Midwestern Ecological Issues: A Case Study Approach	2
BOTANY 455	The Vegetation of Wisconsin (approved lab course)	4

BOTANY/ ZOOLOGY 460	General Ecology (approved lab course)	4	BOTANY 305	Plant Morphology and Evolution (approved lab course)	4
BOTANY/ENTOM/ ZOOLOGY 473	Plant-Insect Interactions	3	BOTANY 400	Plant Systematics (approved lab course)	4
BOTANY/ENVIR ST/ F&W ECOL/ ZOOLOGY 516	Conservation Biology	3	BOTANY 401	Vascular Flora of Wisconsin (approved lab course)	4
ENTOM 344	From Flowers to Food: Pollinator Ecology and Conservation	3	BOTANY 422	Plant Geography	3
ENTOM 450	Basic and Applied Insect Ecology	3	BOTANY/ PL PATH 563	Phylogenetic Analysis of Molecular Data	3
ENTOM 490	Biodiversity and Global Change	3	ENTOM 432	Taxonomy and Bionomics of Immature Insects (approved lab course)	4
ENVIR ST/ LAND ARC 361	Wetlands Ecology	3	ENTOM/GENETICS/ ZOOLOGY 624	Molecular Ecology	3
F&W ECOL 448	Disturbance Ecology	3	ENVIR ST/ F&W ECOL/ ZOOLOGY 360	Extinction of Species	3
F&W ECOL 550	Forest Ecology	3	GENETICS 468	General Genetics 2	3
F&W ECOL 551	Forest Ecology Lab (approved lab course)	1	GENETICS 633	Population Genetics	3
F&W ECOL/ LAND ARC/ ZOOLOGY 565	Principles of Landscape Ecology	2	MICROBIO 450	Diversity, Ecology and Evolution of Microorganisms	3
F&W ECOL/ ZOOLOGY 660	Climate Change Ecology	3	MICROBIO 520	Planetary Microbiology: What Life Here Tells Us About Life Out There	3
GENETICS 528	Study Abroad: International Field Study in Animal Biodiversity	1	MICROBIO 525	Field Studies of Planetary Microbiology and Life in the Universe (approved lab course)	3
MICROBIO/ BOTANY 335	The Microbiome of Plants, Animals, and Humans	3	PATH-BIO 307	Superbugs, Sex, & Drugs: Why Modern Medicine Needs Evolutionary Biology	2
PL PATH 300	Introduction to Plant Pathology (approved lab course)	4	PSYCH 449	Animal Behavior	3
PL PATH 315	Plant Microbiomes (approved lab course)	4	PSYCH 450	Primate Psychology: Insights into Human Behavior	3
ZOOLOGY 304	Marine Biology	2	ZOOLOGY 300	Invertebrate Biology and Evolution	3
ZOOLOGY/ ENVIR ST 315	Limnology-Conservation of Aquatic Resources	2	ZOOLOGY 301	Invertebrate Biology and Evolution Lab (approved lab course)	2
ZOOLOGY 316	Laboratory for Limnology-Conservation of Aquatic Resources (approved lab course)	2-3	ZOOLOGY 415	Genetics of Human History	3
ZOOLOGY 320	Field Marine Biology (approved lab course)	3	ZOOLOGY 425	Behavioral Ecology	3
ZOOLOGY 333	Marine Ecology	2	E. Applied Biology, Agriculture and Natural Resources		
ZOOLOGY/ ENVIR ST 510	Ecology of Fishes	3	Code	Title	Credits
ZOOLOGY/ ENVIR ST 511	Ecology of Fishes Lab (approved lab course)	2	A A E/ NUTR SCI 350	World Hunger and Malnutrition	3

D. Evolution and Systematics

Code	Title	Credits
ANTHRO 302	Hominoid Evolution	3
ANTHRO 304	Heredity, Environment and Human Populations	3
ANTHRO/BOTANY/ ZOOLOGY 410	Evolutionary Biology	3
ANTHRO 411	The Evolution of the Genus, Homo	3
ANTHRO 458	Primate Behavioral Ecology	3
ANTHRO 603	Seminar in Evolutionary Theory	3
BIOLOGY/ GENETICS 522	Communicating Evolutionary Biology	2-3

AGROECOL 377	Global Food Production and Health	3
AMER IND/ ANTHRO/ BOTANY 474	Ethnobotany	3-4
AN SCI/DY SCI/ NUTR SCI 311	Comparative Animal Nutrition	3
AN SCI/DY SCI 320	Animal Health and Disease	3
AN SCI 361	Breeding and Genetics of Livestock and Companion Animals	3
BIOCORE 587	Biological Interactions	3
B M E 430	Biological Interactions with Materials	3
B M E/MED PHYS/ PHMCOL- M/PHYSICS/ RADIOL 619	Microscopy of Life	3

BOTANY 403	Field Collections and Identification	1-4
DY SCI 471	Food Production Systems and Sustainability	3
ENTOM 351	Principles of Economic Entomology	3
ENTOM/ ZOOLOGY 371	Medical Entomology: Biology of Vector and Vector-borne Diseases (approved lab course - 4th credit meets lab requirement)	3-4
ENVIR ST/ POP HLTH 471	Introduction to Environmental Health	3
ENVIR ST/ POP HLTH 502	Air Pollution and Human Health	3
ENVIR ST/ LAND ARC 581	Prescribed Fire: Ecology and Implementation (approved lab course)	3
F&W ECOL 306	Terrestrial Vertebrates: Life History and Ecology (approved lab course)	4
F&W ECOL 410	Silviculture: Applied Forest Ecology (approved lab course - 4th credit meets lab requirement)	3-4
F&W ECOL 458	Environmental Data Science	3
F&W ECOL/ SURG SCI 548	Diseases of Wildlife	3
F&W ECOL 561	Wildlife Management Techniques (approved lab course)	3
FOOD SCI/ MICROBIO 324	Food Microbiology Laboratory (approved lab course)	2
FOOD SCI/ MICROBIO 325	Food Microbiology	3
GENETICS 548	The Genomic Revolution	3
M&ENVTOX/ ONCOLOGY/ PHM SCI/PHMCOL- M/POP HLTH 625	Toxicology I	3
MED PHYS/ PHYSICS 265	Introduction to Medical Physics	2
MED PHYS 651	Methods for Neuroimaging Research	3
MICROBIO 357	General Bioinformatics for Microbiologists	3
MICROBIO/ SOIL SCI 425	Environmental Microbiology	3
M M & I 554	Emerging Infectious Diseases and Bioterrorism	2
NUTR SCI 332	Human Nutritional Needs	3
PATH 501	Topics in Environmental Viral Pathogen Surveillance	3
PLANTSCI/ LAND ARC 263	Woody Landscape Plant Identification, Culture, and Use	4
PLANTSCI 300	Cropping Systems	3
PLANTSCI 302	Forage Management and Utilization	3
PLANTSCI 338	Plant Breeding and Biotechnology	3
PLANTSCI 360	Genetically Modified Crops: Science, Regulation & Controversy	2
PLANTSCI 370	World Vegetable Crops	3

PLANTSCI 378	Study Abroad: Tropical Horticultural Systems International Field Study	2
PLANTSCI 501	Principles of Plant Breeding	3
PLANTSCI/ ATM OCN 532	Environmental Biophysics	3
PLANTSCI 550	Molecular Approaches for Crop Improvement	3
PL PATH 517	Plant Disease Resistance	2-3
SOIL SCI 323	Soil Biology	3
SOIL SCI 621	Soil and Environmental Chemistry	3
ZOOLOGY 335	Human/Animal Relationships: Biological and Philosophical Issues	3

CAPSTONE REQUIREMENT

Code	Title	Credits
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Two credits minimum required. With advisor approval, directed study or research-based senior thesis in a biological science discipline can also count. The experience must be completed after the first year of an introductory biology sequence above. The capstone experience will normally be completed during the student's final two or three semesters. Also, a subset of laboratory courses has been approved for capstone. The following courses, along with 682s and 692s in biological science departments (taken senior year), can be accepted as fulfilling the capstone experience.

ANAT&PHY 435	Fundamentals of Human Physiology	5
BIOCORE 486	Principles of Physiology Laboratory	2
BOTANY 455	The Vegetation of Wisconsin	4
BOTANY/ ZOOLOGY 460	General Ecology	4
ENVIR ST/ ZOOLOGY 511	Ecology of Fishes Lab	2
F&W ECOL 595	Wildlife Research Capstone (limited access)	3
GENETICS 527	Developmental Genetics for Conservation and Regeneration	3
PL PATH 315	Plant Microbiomes	4
ZOOLOGY 316	Laboratory for Limnology-Conservation of Aquatic Resources	2-3
ZOOLOGY 555	Laboratory in Developmental Biology	3
ZOOLOGY 612	Comparative Physiology Laboratory	2

BIOLOGY NAMED OPTION

Instead of completing the requirements above, students may choose to select the named option below.

View as listView as grid

- **BIOLOGY: EVOLUTIONARY BIOLOGY**
([HTTPS://GUIDE.WISC.EDU/
UNDERGRADUATE/AGRICULTURAL-LIFE-
SCIENCES/BACTERIOLOGY/BIOLOGY-BS/
BIOLOGY-EVOLUTIONARY-BIOLOGY-BS/](https://guide.wisc.edu/undergraduate/agricultural-life-sciences/bacteriology/biology-bs/biology-evolutionary-biology-bs/))

HONORS IN THE MAJOR

ADMISSIONS CRITERIA

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.

New First-Year Students

- Complete program application including essay questions

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

Honors in the Major in Biology: Requirements

To earn Honors in the Major in Biology, students must satisfy the requirements for the major (above) as well as the following requirements:

- Earn a 3.300 overall university GPA
- Complete a two-semester senior honors thesis for 6 credits total and present research in a public forum
- Complete at least 20 credits of honors coursework from the following sections of the Biology curriculum:
 - Introductory biology
 - Foundation courses
 - Upper-level breadth in the major
- At least 6 of the 20 credits of honors coursework must be from the upper-level breadth in the major requirement