

# BIOLOGY, ECOLOGY AND ENVIRONMENTAL BIOLOGY EMPHASIS, COMPREHENSIVE MAJOR

Liberal Arts (Code 080-001)

## University Requirements

### GRADUATION REQUIREMENTS FOR BACCALAUREATE DEGREE

Credit Requirements	
Minimum total for graduation <sup>1</sup>	120
Upper division credits (courses numbered 300 and higher)	39
Liberal Education Core ( <a href="http://catalog.uwec.edu/undergraduate/graduation-requirements/#header1">http://catalog.uwec.edu/undergraduate/graduation-requirements/#header1</a> )	36
Academic Concentrations ( <a href="http://catalog.uwec.edu/undergraduate/graduation-requirements/#header16">http://catalog.uwec.edu/undergraduate/graduation-requirements/#header16</a> )	
Grade Point Requirements ( <a href="http://catalog.uwec.edu/undergraduate/graduation-requirements/#header14">http://catalog.uwec.edu/undergraduate/graduation-requirements/#header14</a> ) <sup>2</sup>	
Total	2.00 average
Resident	2.00 average
Major	2.00 average
Minor	2.00 average
Certificate	2.00 average
University Residency Requirements ( <a href="http://catalog.uwec.edu/undergraduate/graduation-requirements/#header15">http://catalog.uwec.edu/undergraduate/graduation-requirements/#header15</a> )	
Minimum total	30
Senior year	23
Major, Standard, upper division in residence	12
Major, Comprehensive, upper division in residence	21
Certificate	25 percent of credits

### Procedures Required for Graduation

Obtain admission to the degree program and/or the College offering it.

Apply for graduation on CampS.

<sup>1</sup> Certain programs exceed this minimum.

<sup>2</sup> See special requirements in each College.

## Applicability of Credits Toward Graduation

**Junior College or Two-Year College Credits.** A maximum of 72 semester credits earned in a junior college or two-year college will be accepted as degree credits at UW-Eau Claire.

**Extension Credits.** Credits earned in credit outreach courses offered by UW-Eau Claire are treated as resident credits. Credits earned in extension courses offered by other units of the University of Wisconsin System are treated as transfer credits. All other (non-UW) extension and correspondence credits are normally limited to one-fourth of the total required for graduation from any curriculum.

**WTCS Credits.** A maximum of 72 semester credits earned in college parallel programs at Madison Area Technical College, Milwaukee Area Technical College, Nicolet Area Technical College, or Chippewa Valley Technical College may be accepted as degree credits at UW-Eau Claire. A set number of general education courses will be accepted from other technical schools. Occupational and technical courses may also be considered for transfer if the quality and content of the course work from the technical college is judged to be comparable to course work at UW-Eau Claire. Refer to the Transfer Credit Wizard ([https://my.uwec.edu/psp/PUBLIC/EMPLOYEE/HRMS/c/EAU\\_SS\\_CUSTOM.EAU\\_TRNCRDWZ.GBL](https://my.uwec.edu/psp/PUBLIC/EMPLOYEE/HRMS/c/EAU_SS_CUSTOM.EAU_TRNCRDWZ.GBL)) or contact the UW-Eau Claire Admissions Office for information about the current transfer policy.

**USAFI Credit.** UW-Eau Claire will accept up to 32 semester credits for work done through the United States Armed Forces Institute, under the provision for non-UW correspondence credit (see Extension Credits above).

**Activity Credit (band, chorus, drama, KINS 100-184 courses)** Students may count toward graduation no more than one credit of KINS 110-184 courses. Students may count toward graduation no more than four credits earned in any single activity course and no more than 12 credits resulting from any combination of activity courses (excluding KINS 110-184 courses).

**Other Restricted Credits.** For other University restrictions, see the following: Cooperative Education; Credit by Examination; Satisfactory/Unsatisfactory Registration; Transfer of Credits. College or departmental restrictions may also be placed on Independent Study (399-499 courses), Directed Study (395-495), and other types of credits.

### APPLICABILITY OF CREDITS TOWARD GRADUATION

	Credit Restrictions
<b>Satisfactory/Unsatisfactory</b>	
Total degree credit	maximum 12
Major, Standard	maximum 1 course
Major, Comprehensive	maximum 2 courses
Minor	maximum 1 course
<b>Credit by Examination</b>	
Total degree credit	maximum ¼ of total
Major or minor	maximum ½ of total
<b>Two-Year College Credits</b>	
Total degree credit	maximum 72 credits
<b>Activity credit (band, chorus, drama, KINS 100-184)</b>	
Total KINS 100-184	maximum 1 credit
Total Band, chorus, drama	maximum 12 credits
Single course band, chorus, drama	maximum 4 credits
<b>Extension credits</b>	
UW-System	no maximum
Other extension/correspondence	maximum ¼ of total
<b>USAFI</b>	

USAFI	maximum 32 credits
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## Liberal Education Core

The University of Wisconsin-Eau Claire measures learning outcomes to ensure that its graduates have achieved a liberal education and prepared themselves to contribute to a complex society. Upon graduation, each undergraduate will have met the five learning goals of our liberal education core and the 12 learning outcomes they comprise.

### LIBERAL EDUCATION CORE REQUIREMENTS

a minimum of  
36 credits

#### Knowledge Goal

Knowledge Outcome 1 (K1): Natural Sciences ( <a href="http://catalog.uwec.edu/undergraduate/attribute-k1/">http://catalog.uwec.edu/undergraduate/attribute-k1/</a> )	Two (2) learning experiences
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One experience in laboratory science must be selected from either K1 or K2.

Knowledge Outcome 2 (K2): Social Sciences ( <a href="http://catalog.uwec.edu/undergraduate/attribute-k2/">http://catalog.uwec.edu/undergraduate/attribute-k2/</a> )	Two (2) learning experiences
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One experience in laboratory science must be selected from either K1 or K2.

Knowledge Outcome 3 (K3): Humanities ( <a href="http://catalog.uwec.edu/undergraduate/attribute-k3/">http://catalog.uwec.edu/undergraduate/attribute-k3/</a> )	Two (2) learning experiences
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Knowledge Outcome 4 (K4): Fine Arts ( <a href="http://catalog.uwec.edu/undergraduate/attribute-k4/">http://catalog.uwec.edu/undergraduate/attribute-k4/</a> )	One (1) learning experience
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#### Skills Goal

Skills Outcome 1 (S1): Written and Oral Communication ( <a href="http://catalog.uwec.edu/undergraduate/attribute-S1/">http://catalog.uwec.edu/undergraduate/attribute-S1/</a> )	Two (2) learning experiences
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One S1 must meet the University Writing Requirement (<http://catalog.uwec.edu/undergraduate/graduation-requirements/#header10>)

Skills Outcome 2 (S2): Mathematics ( <a href="http://catalog.uwec.edu/undergraduate/attribute-S2/">http://catalog.uwec.edu/undergraduate/attribute-S2/</a> )	One (1) learning experience
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One S2 to meet the University Mathematics Requirement (<http://catalog.uwec.edu/undergraduate/graduation-requirements/#header11>)

Skills Outcome 3 (S3): Creativity ( <a href="http://catalog.uwec.edu/undergraduate/attribute-S3/">http://catalog.uwec.edu/undergraduate/attribute-S3/</a> )	One (1) learning experience
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#### Responsibility Goal

Responsibility Outcome 1 (R1): Equity, Diversity, and Inclusivity ( <a href="http://catalog.uwec.edu/undergraduate/attribute-R1/">http://catalog.uwec.edu/undergraduate/attribute-R1/</a> )	Two (2) learning experiences
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One R1 must satisfy Design for Diversity (<http://catalog.uwec.edu/undergraduate/attribute-DDIV/#header13>)

Responsibility Outcome 2 (R2): Global Perspectives ( <a href="http://catalog.uwec.edu/undergraduate/attribute-R2/">http://catalog.uwec.edu/undergraduate/attribute-R2/</a> )	One (1) learning experience
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Responsibility Outcome 3 (R3): Civic and Environmental Issues ( <a href="http://catalog.uwec.edu/undergraduate/attribute-R3/">http://catalog.uwec.edu/undergraduate/attribute-R3/</a> )	One (1) learning experience
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#### Integration Goal

Integration Outcome 1 (I1): Integration ( <a href="http://catalog.uwec.edu/undergraduate/attribute-I1/">http://catalog.uwec.edu/undergraduate/attribute-I1/</a> )	Two (2) learning experiences
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#### Service-Learning Goal

Service-Learning ( <a href="http://catalog.uwec.edu/undergraduate/attribute-SL/#header13">http://catalog.uwec.edu/undergraduate/attribute-SL/#header13</a> )	30 hours
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## College Degree Requirements

### Bachelor of Arts or Bachelor of Science Degree (B.A./B.S.)

**University Graduation Requirements.** All candidates for degrees must fulfill the requirements for credits, curriculum, GPA, and University residency as specified in the section of this catalog titled University Graduation Requirements (<http://catalog.uwec.edu/undergraduate/graduation-requirements/>).

**College Graduation Requirements: Grade Point Averages.** All candidates for degrees in the College of Arts and Sciences must earn minimum resident and total GPAs of 2.00 in the major, the minor, and the certificate. The resident and total GPAs for the major are computed using all attempted credits applicable to the major including those offered by departments other than the major department. The resident and total GPAs for the minor and the certificate are computed similarly.

**Major-Minor and Major-Certificate Requirements.** A standard major (a minimum of 36 credits) must be supplemented by a minor (a minimum of 24 credits) or by a certificate (12 to 18 credits) to meet graduation requirements for completing a first and second degree program. No minor or certificate is required with a Comprehensive Major (60 or more credits) or with two majors of 36 or more credits each.

Certain degree programs, which include Comprehensive Majors, may require more than the minimum of 120 credits for graduation.

Acceptable academic program combinations are determined at the college level. A major and a minor or a major and certificate or two majors (if available) may not be elected in the same department or program, except in the approved combinations listed here (<http://catalog.uwec.edu/undergraduate/arts-sciences/#academicprogramtext>).

**College Credits.** Earn at least 90 credits in courses offered by the College of Arts and Sciences.

### Bachelor of Arts Degree in the College of Arts and Sciences (B.A.)

Fulfillment of all University Graduation Requirements (which includes the Liberal Education Core); all College-level degree requirements (major and minor/certificate emphases, GPAs, earning at least 90 credits in Arts and Sciences course work); foreign language competency at the 102 level. Foreign language competency may be met in one of two ways: (1) Achieve a score on the foreign language placement test that qualifies the student to enter the 201-level course in a foreign language. (2) Earn a grade of at least C (not C-) or a mark of S in a 102-level foreign language course (or AIS 112 or AIS 122 or CSD 103).

### Bachelor of Science Degree in the College of Arts and Sciences (B.S.)

Fulfillment of all University Graduation Requirements (which includes the Liberal Education Core); all College-level degree requirements (major and minor/certificate emphases, GPAs, earning at least 90 credits in Arts and

Sciences course work); mathematics competency at the MATH 111, MATH 112 or MATH 113 level. Mathematics competency can be met in one of three ways:

(1) Achieve a score on the mathematics placement test that qualifies the student to enter MATH 114. (2) Earn a grade of at least C (not C-) or a mark of S in MATH 111, MATH 112, or MATH 113. (3) Achieve a satisfactory score on the MATH 112 competency test. This test may be attempted no more than two times.

## Major Requirements

### Liberal Arts (Code 080-001)

This emphasis provides extensive exposure to topics in ecology, field biology, and biological conservation. It is intended for students who are interested in field research, environmental monitoring and management, or natural resource conservation, or who desire strong preparation for graduate programs in ecology, environmental biology, or related fields. Research or internship is strongly recommended.

The emphasis requires completion of the core, the required credits as listed below, and biology electives to total at least 60 credits.

### Core Requirements for All Biology Majors

Ecology and Environmental Biology Emphasis (Code 080-001); Microbiology Emphasis (Code 080-002); Biology, Liberal Arts (Code 080-203).

Code	Title	Credits
BIOL 221	Foundations of Biology I	4
BIOL 222	Foundations of Biology II	3
BIOL 223	Foundations of Biological Inquiry	2
<b>Total Credits</b>		<b>9</b>

### Core Requirements for Biology, Liberal Arts

All students who pursue a Liberal Arts Comprehensive Major in Biology are also required to complete MATH 114, and CHEM 105, CHEM 106, and CHEM 109, or CHEM 115, in addition to the 60 credits required for the major.

### Biology, Ecology and Environmental Biology Emphasis, Comprehensive Major

Code	Title	Credits
<b>Required Courses</b>		
BIOL 180	Environmental Biology and Conservation	3
or GEOG 178	Planet Earth: Conservation of the Environment	
BIOL 308	Evolution	3
BIOL 318	Plant Form and Function	4-5
or BIOL 319	Animal Form and Function	
BIOL 321	Ecology	3
BIOL 323	Genetics	3
BIOL 383	Biostatistics	4
<b>Elective Courses</b>		
Biological Sciences <sup>1</sup>		
Select at least three of the following courses		
BIOL 311	General Entomology	
BIOL 318	Plant Form and Function <sup>2</sup>	
or BIOL 319	Animal Form and Function	
BIOL 325	Plant Systematics	
BIOL 328	Conservation Biology	

BIOL 332	Field Botany
BIOL 338	Vegetation Ecology
BIOL 340	Ornithology
BIOL 345	Invertebrate Zoology
BIOL 356	Vertebrate Biology
BIOL 360	Vertebrate Design and Evolution
BIOL 362	Field Zoology
BIOL 365	Animal Behavior
BIOL 376	Aquatic Ecology
BIOL 379	Biology of Fishes

Additional biology courses not specifically excluded from the biology major may be used to complete the 48-credit total in biology.

### Physical Sciences

Select any 12 credits from the following course list. Up to 12 credits maximum will be applied toward the comprehensive major. <sup>3</sup>

GEOG 304	Introduction to Geomorphology
GEOG 335	Geographic Information Systems I
GEOG 336	Geospatial Field Methods
GEOG 337	Geographic Information Systems II
GEOG 338	Remote Sensing of the Environment
GEOG 340	Climatology
GEOG 345	Quaternary Environments
GEOG 350	Soils and the Environment
GEOG 355	Biogeography
GEOG 361	Environmental Hazards
GEOG 363	Watershed Analysis
GEOG 364	Fluvial Processes and Landforms
GEOG 435	Geographic Information Systems III
GEOG 438	Remote Sensing Data Analytics
GEOG 455	Web Geographic Information Systems
GEOL 110	Physical Geology
or GEOL 115	Environmental Geology
GEOL 301	Earth Resources and Sustainability
GEOL 304	Global Environmental Change
GEOL 308	Water Resources
GEOL 315	Hydrogeology I
PHYS 211	General Physics
PHYS 231	University Physics I
CHEM 213	Quantitative Analysis
CHEM 304	Environmental Chemistry
CHEM 325	Organic Chemistry I with Laboratory

<sup>1</sup> May include Marine Science II - Marine Biology from the Gulf Coast Research Laboratory.

<sup>2</sup> Select the course not chosen to fulfill requirements from the required course list.

<sup>3</sup> May include Marine Science I - Oceanography from the Gulf Coast Research Laboratory.

## Program Learning Outcomes

Students completing this program will be expected to meet the following learning outcomes:

- Demonstrate an understanding of foundational biological principles in the areas of cell/molecular biology, genetics, evolution, ecology, diversity of life, and structure & function of organisms.
- Understand and apply basic research methods in biology including research design, data analysis, and communication.
- Work collaboratively to explore and solve problems.
- Apply theories, concepts, findings, and methods of biology to problems/issues in society.
- Understand how biological theories, concepts, findings, and methods relate to other disciplines.
- Demonstrate competence in mathematics, statistics, and computer technology as tools for revealing and characterizing complex patterns in biological systems
- Understand and apply scientific reasoning and methods in learning science and/or in conducting biological research.
- Communicate scientific ideas and results in a variety of formats.
- Understand how to organize and evaluate data/information related to measuring diversity using field-specific recommended structures and criteria.