

# Biology

## Introductory Advising Guide 2009 - 2010

### About the major:

Biology is the science of “life.” It includes an array of subdisciplines such as ecology, evolution, botany, zoology, genetics, microbiology, and molecular biology. Biological expertise is a vital component of the solutions to many problems facing our civilization from human health and disease to loss of biodiversity and environmental quality. A UW-Eau Claire biology major is designed to provide students the opportunity to integrate, interpret, and translate biological phenomena and environmental observations and then use this information to make meaningful decisions.

### Majors:

- Standard major: Biology, Liberal Arts or Teaching
- Comprehensive major: Ecology and Environmental Biology
- Comprehensive major: Microbiology
- Comprehensive major: Organismal Biology
- Comprehensive major: Biochemistry/Molecular Biology

### Minors:

- Biology, General or Teaching
- Environmental Science
- Marine Science
- Pre-Professional Health Science

Students can pursue a comprehensive major (60 credits) in Biology and select from one of three emphases: Ecology and Environmental Biology, Microbiology, or Organismal Biology. A standard major (36 credits) is also offered that requires no specific advanced coursework; these students take advanced courses in any area of biology depending upon one’s interest; The standard major requires a minor. Core requirements for biology majors are [Biol 110 \(Ecology and Evolution\)](#), [Biol 111 \(Cell Biology and Genetics\)](#), and [Biol 211 \(Organismal Form and Function\)](#). After completing these courses, biology majors take additional advanced courses in areas of interest and complete the major with a capstone course.

The Departments of Biology and Chemistry also offer a comprehensive major in Biochemistry/Molecular Biology in partnership. This 81 credit major requires a minimum of 35 credits in biology plus additional coursework in chemistry and physics. Students in this major begin with [Biol 111 \(Cell Biology and Genetics\)](#).

Students with the intention of pursuing a pre-professional program (pre-medicine, pre-dentistry, pre-veterinary medicine, pre-optometry, and pre-physician’s assistant) need to know that these programs are NOT majors. Pre-professional students often choose one of the biology majors to meet their program requirements, however, a student can choose ANY major.

### Required GE or University courses:

Liberal arts students choose a Bachelor of Science degree in the College of Arts and Sciences. Teaching majors earn a B.S. in the College of Education and Human Sciences.

#### Category IA:

[Engl 305](#) or [308](#) (Scientific Communication) is recommended for many students; [Comm 202 \(Fundamentals of Speech\)](#) is required for teaching majors.

#### Category IB:

[Math 114 \(Calculus I\)](#)

#### Category II:

Some biology and chemistry courses can apply.

#### Categories III and IV:

Met with requirements for the B.S. in the appropriate college.

### Essential Courses:

- Courses in general chemistry (Chem 103 and 104 [or 115 and 213]) are required for all biology majors.
- Comprehensive majors in Microbiology and Organismal require Organic Chemistry I and II (Chem 325 and 326) and Biochemistry (Chem 352).
- [Math 114 \(Calculus I\)](#) is required for all biology majors.

### Courses to be avoided:

- [Biol 100 \(General Biology\)](#)
- [Biol 130 \(Human Sexual Biology\)](#)
- [Biol 151 \(Biology of Humans\)](#)
- [Biol 180 \(Conservation of the Environment\)](#)
- [Biol 196 \(Human Nutrition\)](#)
- [Biol 195 \(Plants and Society\)](#)

These courses do not count in any biology major.

### Information for exploring students:

- Join organizations such as the Biology Club, a Pre-professional club, Molecular Movement, or The Conservationists depending upon specific interests.
- [Biol 130 \(Human Sexual Biology\)](#), [Biol 151 \(Biology of Humans\)](#), [Biol 180 \(Conservation of the Environment\)](#) and [Biol 196 \(Human Nutrition\)](#) are useful for exploring Biology, but do not count towards the major.
- [Biol 180](#) is required for the environmental science minor or for teaching certification.

### Admission:

Students interested in any biology major should complete 4 years of coursework in high school mathematics.

Students who have not had sufficient high school math may be required to complete appropriate coursework prior to starting biology courses at UWEC. Entry level college math course is determined by score on mathematics placement test taken prior to summer orientation.

A minimum of a year of high school chemistry is also strongly recommended.

### Helpful Tips:

#### Program Readiness

Students pursuing a biology major start at different levels of readiness, particularly with respect to math and chemistry skills.

- Math readiness - students need to be qualified to take [Math 109 \(Algebra for Calculus\)](#) to begin Chem 103 and Biol 110. Students are strongly encouraged to take [Math 112 \(Precalculus Mathematics\)](#) or [Math 113 \(Trigonometry\)](#), if necessary, for preparation for [Math 114 \(Calculus I\)](#). Math 114 is required for any biology major and is a prerequisite for many chemistry and physics courses.
- Starting one's first semester with a course in chemistry, biology, math, and general education III or IV is desirable, but requires a high level of maturity. It is better to spread these courses out if a student is not prepared to study efficiently for long hours.
- Beginning students should plan to work no more than 10 hours per week. A biology major is very intensive and requires a great deal of time for study (40-50 hours per week).

### Contact information:

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UW-Eau Claire respects individual differences.

This guide complements rather than substitutes for individual advising.



For instructions about how to declare this major:

[www.uwec.edu/registrar/chgofmajor/procedures/](http://www.uwec.edu/registrar/chgofmajor/procedures/)