

# Biology/Life Science

- The Biology major prepares students for careers in the biological sciences and for entrance into graduate programs in the biological sciences. Biology is also considered a pre-professional major that prepares students for entrance into professional programs such as medicine, pharmacy, dentistry, optometry, chiropractic, physical therapy, occupational therapy, mortuary science, and veterinary medicine programs.
- The Life Science major prepares students for jobs in biological sciences industry and in secondary education.

## BIOLOGY COURSES

<b>BIO 100:</b>	<b>General Biology</b>
<b>BIO 101:</b>	<b>General Biology Lab</b>
<b>BIO 200:</b>	<b>Cell Biology</b>
<b>BIO 300:</b>	<b>Genetics</b>
<b>BIO 305:</b>	<b>Molecular Genetics</b>
<b>BIO 340:</b>	<b>Evolution</b>
<b>CHEM 151:</b>	<b>General Chemistry I</b>
<b>CHEM 152:</b>	<b>General Chemistry II</b>
<b>BIO 398/498:</b>	<b>Thesis Research I &amp; II</b>
<b>MATH 111:</b>	<b>Pre-calculus Mathematics</b>

Two of the following four:

<b>CHEM 251:</b>	<b>Organic Chemistry I</b>
<b>CHEM 252:</b>	<b>Organic Chemistry II</b>
<b>PHY 111-112:</b>	<b>Introductory Physics I &amp; Lab</b>
<b>PHY 113-114:</b>	<b>Introductory Physics II &amp; Lab</b>

**15 hours in Biology electives with at least nine credits at the upper level, such as: Human Anatomy and Physiology I & II, Microbiology, Plant Physiology, Ecology, Electron Microscopy, Parasitology, Ichthyology, Herpetology**

## LIFE SCIENCE COURSES

<b>BIO 100-101:</b>	<b>General Biology &amp; Lab</b>
<b>BIO 200:</b>	<b>Cell Biology</b>
<b>BIO 300:</b>	<b>Genetics</b>
<b>BIO 305:</b>	<b>Molecular Genetics</b>
<b>BIO 340:</b>	<b>Evolution</b>
<b>CHEM 151:</b>	<b>General Chemistry I</b>
<b>BIO 499:</b>	<b>Biotic Problems</b>

15 hours of electives in Biology — at least seven hours must be 300 or above

## Facilities & Equipment

- 32 station computer lab
- 1500 sq. ft. greenhouse
- 16 foot jon boat with 40 horse motor
- Hydrolab water quality multiprobe (temperature, pH, dissolved oxygen and conductivity) and field computer
- Turbidity meter
- Water Quality Lab equipped to monitor nitrogen, phosphorus, suspended solids and fecal coliform bacteria

### Student Projects

All Biology majors are required to complete a two-course thesis research project. In conjunction with a faculty advisor, students choose a subject of interest. Working with their advisor, students conduct a literature review in their junior year (BIO 398) and a hands-on project regarding their chosen subject their senior year (BIO 498). This culminates in a written report and oral presentation to the science faculty. Some examples are listed below:

#### Anthony Giannini

Assessment of Genetic Diversity in Iowa Trout Populations

#### Betty Ganfield

Salmonella Contamination in Turtles

#### Josh Larson

Meningeal Worm Infection in White-tail Deer in Northeast Iowa

All Life Science majors are required to complete a one-course research project. In conjunction with their faculty advisor, students choose a subject of interest. Working with their advisor, students conduct a literature review and perform hands-on research regarding their chosen subject (BIO 499). This culminates in a written report and oral presentation to the science faculty. Some examples are listed below:

#### Joshua Carr

Waterfowl Survey at Sweet Marsh

#### Dan Anderson

Survey of Iowa's Deer Population

#### Corey Meyer

Survey of Native Prairie Plants

## Internships

Pre-professional students (pre-med, pre-vet, etc.) may choose to complete an internship (BIO 303: Experiences in Health Science Careers).

Typically, students will “job shadow” a health care professional in their field of interest. This experience can help them make a decision about whether this is the career path they would like to choose. The health care professional also may become an important reference for students when applying to professional schools.

Upper Iowa students have completed internships with physicians, chiropractors, physical therapists, pharmacists, veterinarians, dentists, optometrists, morticians, pathologists, and cardiac rehab specialists.

## Career Opportunities

Biology majors have been successful in pursuing many career avenues. Some of the most popular choices of Upper Iowa Biology majors include:

Biological Sciences lab positions  
Biological Science industrial positions  
Graduate School in the Biological Sciences  
Professional Schools (Medical, Dental, Veterinary, Chiropractic, etc.)

Here's a few examples of what some of our recent Biology graduates are doing:

### **Anthony Giannini**

Graduate Student—Genetics, Purdue University

### **Joshua Larson**

Graduate Student—Animal Science, Drexel University

### **Ryan Kramer**

Graduate Student—Palmer Chiropractic College

### **Anita Erikson**

Employed by Integrated DNA Technology, Cedar Rapids

Here's a few examples of what some of our recent Life Science graduates are doing:

### **Joshua Carr**

County Position—Cherokee, Iowa

### **Dan Anderson**

Science Teacher—MFL-MarMac

### **Corey Meyer**

Iowa DNR—Otter Creek

## Activities & Resources

- Science and Environmental Club
- Work-study positions in the Division of Science and Mathematics.

## Faculty

### **Dr. Lew Churbuck,** **Associate Professor**

B.A. Upper Iowa University  
M.A. University of Northern Iowa  
Honorary Doctorate Upper Iowa

### **Dr. Scott Figdore,** **Professor**

B.S. Penn State University  
M.S., Ph.D. University of Wisconsin

### **Dr. Rick Klann** **Delano Professor of Science**

B.A. Westminster College  
M.A., Ph.D. University of Missouri

### **Dr. Erik Olsen** **Associate Professor**

B.A. Juanita College  
Ph.D. Dartmouth College



## Office of Admissions

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