Biology
Biology Department

Faculty
Paul Weihe (chair), Russell Benedict, Glenn Barnett, Anya Butt, Ellen Du Pré, Lee Macomber, Paulina Mena, Nicole Palenske, Kristin Siewert

Statement of philosophy
Advances in such critical areas as the environment, genetics and medicine clearly show that biology is one of the most dynamic disciplines of our time; perhaps the only certainty is that no one knows which of its many facets will become important next. It is also clear that very few undergraduates enter college with a final decision on their ultimate vocational preference. The philosophy of the biology department reflects both of these realities by offering our students a strong foundation in biology without over-specialization. We emphasize an intellectual approach rooted in the college’s liberal arts tradition. The biology faculty use the framework of biology to develop the kinds of abilities that will serve students well no matter what paths their lives take: to think critically, analytically and independently; to communicate effectively; to search for an original approach; to solve problems efficiently; to achieve and maintain intellectual curiosity; and to demonstrate an understanding of human impact on the global environment. The result has been graduates who meet with success no matter where their life choices take them.

Student research in biology
The biology department is committed to fostering student research. In addition to state-of-the-art laboratories and equipment in the Vermeer Science Center, the College maintains the 80-acre Carlson-Kuyper Biology Field Station on Lake Red Rock.

Study abroad opportunities
For decades, the biology department has been at the forefront of promoting Central’s study abroad programs and the department will work with biology majors so they can obtain the benefit of an international study experience and still graduate in four years.

Major Communication Skills
Certification of communication skills for the biology major, encompassing reading, writing, speaking, listening, numeric, bibliographic and computer skills, is accomplished in two steps:

1. BIOL 130, 131, 221, 229 and 320. These courses all have integral components requiring satisfactory communication at a level appropriate for a science major. These include: writing term papers and formal laboratory reports; keeping a research notebook; presenting lab results to classmates; listening to presentations by classmates; conducting literature searches using computer data bases; reading and critiquing reports prepared by classmates; analyzing laboratory data.

2. BIOL 386. This seminar is taken after most of the above courses and provides further evaluation and development of communication skills. If these skills are inadequate for college work the instructor will award a grade of less than “C,” in which case the student must repeat the seminar. Usually the student should arrange remedial work before rescheduling, and BIOL 386 must be repeated until a grade of at least “C” is earned.

Biology Major Requirements (50-53 credits)

1. Complete all of the following:
   - BIOL 130 Diversity of Life (4)
   - BIOL 131 Introduction to Cells (4)
   - BIOL 221 Genetics (4)
   - BIOL 229 Principles of Ecology (4)
   - BIOL 320 Evolution (4)
   - CHEM 131 General Chemistry (4)
   - CHEM 235 Organic Chemistry I (4)
   - CHEM 236 Organic Chemistry II (4)

2. Complete BIOL 386 Biology Seminar (1) with a minimum grade of “C.”

3. Complete at least 6 credits from the following:
   - MATH 105 Introduction to Statistics (4)
   - or MATH 215 Applied Statistics (4)
   - MATH 109 Pre-calculus (3)
   - MATH 131 Calculus I (4)
   - MATH 132 Calculus II (4)
   - GEOG 320 Principles of GIS (3)
4. Complete three of the following (at least 11 credits):
   - BIOL 290 Topics in Biology (4)
   - BIOL 310 Tropical Ecology (3-4)
   - BIOL 315 Aquatic Toxicology with Lab (4)
   - BIOL 321 Comparative Vertebrate Anatomy (4)
   - BIOL 324 Field Botany (4)
   - BIOL 335 Functional Histology (4)
   - BIOL 341 Human Physiology (4)
   - BIOL 342 Mammalogy (4)
   - BIOL 343 Ornithology (4)
   - BIOL 345 Limnology (4)
   - BIOL 350 Conservation Biology and Ecology of Iowa (4)
   - BIOL 360 Human Anatomy (4)
   - BIOL 361 Microbiology (4)
   - BIOL 390 Topics in Biology (4)
   - CHEM 320 Biochemistry (4)

**Biology Minor Requirements (24 credits)**

1. **Complete all of the following:**
   - BIOL 130 Diversity of Life (4)
   - BIOL 131 Introduction to Cells (4)
   - BIOL 221 Genetics (4)
   - BIOL 229 Principles of Ecology (4)
   - BIOL 320 Evolution (4)

2. **Complete one of the following:**
   - BIOL 290 Topics in Biology (4)
   - BIOL 321 Comparative Vertebrate Anatomy (4)
   - BIOL 324 Field Botany (4)
   - BIOL 335 Functional Histology (4)
   - BIOL 341 Human Physiology (4)
   - BIOL 342 Mammalogy (4)
   - BIOL 343 Ornithology (4)
   - BIOL 345 Limnology (4)
   - BIOL 350 Conservation Biology and Ecology of Iowa (4)
   - BIOL 360 Human Anatomy (4)
   - BIOL 361 Microbiology (4)
   - BIOL 390 Topics in Biology (4)
   - CHEM 320 Biochemistry (4)