

ART HISTORY MINOR (ARTH)

Students with an art major who elect the art history minor must replace ART107 Art History Survey I, ART108 Art History Survey II, ART215 History of 19th-Century Art, ART216 History of 20th-Century Art on the major with studio courses.

Required Courses..... 15 hours

ART107 Art History Survey I (3 hrs)
ART108 Art History Survey II (3 hrs)
ART215 History of 19th-Century Art (3 hrs)
ART216 History of 20th-Century Art (3 hrs)
ART428 Seminar in 20th-Century Art (3 hrs)

Restricted Elective Courses..... 6 hours

Six hours from art history courses selected in consultation with art history minor advising coordinator.

Minor Total..... 21 hours

DEPARTMENT OF BIOLOGY

Campus Address: 316 Mark Jefferson

Internet: www.emich.edu/public/biology/bioweb.htm

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See pages 253, 254, 283, 322 and 359 for course descriptions.

The biology major provides a broad foundation in biology, with the opportunity to specialize in a number of different areas within biology: ecology and organismal biology, microbiology, physiology and cell and molecular biology. It also provides the necessary background for students pursuing careers in medicine, veterinary medicine, dentistry and other health-related fields. Students planning to teach biology at the secondary level should also select the biology major. The biology major prepares students for job opportunities in private industry, government agencies, academic institutions and in diverse fields ranging from ecology and environmental biology to biomedical research and biotechnology. The biology major also prepares students for graduate work in various specializations in biology at major research universities across the country.

The department prides itself on a student-oriented approach supported by intense faculty dedication to integration of high-quality instruction in the classroom with sophisticated field and laboratory research beyond the classroom. In this way, the department provides a comprehensive experience augmenting coursework with practical scientific experiences for students. Opportunities in biology are supported by an array of facilities within the department, including: a Terrestrial and Aquatic Ecology Research Facility (with both greenhouse and laboratory facilities), a Molecular Biology Research Facility (with a DNA sequencing laboratory), zoological museums, an herbarium, an electron microscopy suite and a variety of other specialized research laboratories. Opportunities for field research are available at the EMU Loesell Field Laboratory near campus and the Parsons Property in Traverse City. Field-oriented courses are offered at the EMU Kresge Environmental Education Center at Lapeer, the Conservation Training School at Higgins Lake, and the Institute for Tropical Marine Ecology in Dominica. Students interested in off-campus programs are encouraged to visit the Biology Department web site.

The department currently sponsors the Xi Delta chapter of Beta Beta Beta, the national biological honorary society. All biology majors and minors are encouraged to participate in its activities. Pre-professional students are encouraged to join the Organization for Pre-Professional Students and pre-veterinary students are encouraged to join the Pre-Veterinary Medicine Association. Internships or co-op positions are available with

outside employers. In addition, faculty members have periodic openings for undergraduate research assistants through externally funded grants. The department offers approximately \$50,000 in scholarships and fellowships to students each year. Scholarships for scholastic excellence are provided by the Mary Goddard, Minnie Neary, Bert Johnson, Grace Wertenberger and Fred and Ford Bryan endowments for study in biology. The Meta Hellwig endowment provides major support of fellowships each year to foster student research collaboration with faculty, as well as special study scholarships for off-campus learning experiences. In addition, the department has had the pleasure of offering for more than 15 years an annual, non-endowed scholarship from the Federated Garden Club of Michigan. Further information and application criteria for these awards can be obtained from the departmental office.

Departmental advising procedures are posted on the Web site and opposite the biology office (316 Mark Jefferson), or this office may be contacted for additional information.

Special Advising Requirements

Prospective biology majors/minors should declare their majors/minors through the Academic Advising Center (Pierce Hall) as soon as possible after their admission to the University.

To graduate with a major in biology, the student must meet with a biology faculty adviser. This meeting must take place as early as possible but no later than the end of the sophomore year. All transfer students must contact a biology faculty adviser during their first semester at EMU.

Students intending to apply to a doctoral medical program (M.D., D.O., D.V.M., D.P.M., D.C., O.D., D.D.S.) are strongly urged to attend the annual pre-professional orientation and to meet with the pre-professional adviser during their first semester. Students may declare their interests by including one of the pre-professional program codes along with their major and minor.

Biology majors and minors who elect teacher certification must be admitted into the College of Education.

Biology majors who elect a botany or zoology minor must file an approved program of required/elective courses for the minor with their faculty adviser and undergraduate coordinator. Program changes will require prior written approval of the faculty adviser and undergraduate coordinator. Minors in either botany or zoology are not approved teaching minors for secondary teacher certification.

Conservation and resource use minor electives must be approved by the advising coordinator. Substitutes on the approved program will count toward its completion only if approved by the coordinator.

Graduate study leads to a master of science degree in biology with students choosing a concentration in general biology, ecology and organismal biology or molecular and cellular biology. These programs are described in the graduate catalog.

Required courses at the 300-level or higher that were taken 10 or more years ago must be retaken or the student must demonstrate current knowledge in that field. Current knowledge can be demonstrated by: 1) passing a department or national biology exam, 2) publishing a peer reviewed paper in the field, or 3) teaching a college level course in that field.

BIOLOGY MAJOR (BIO)

Majors should start with BIOL110 Introductory Biology I followed by BIOL120 Introductory Biology II in their freshman year. Majors without high school biology should take BIOL105 Introductory Biology for Non-majors before taking BIOL110. (Although BIOL105 will not count toward the biology major, credit earned in this course will count toward the 124 hours required for graduation.) Chemistry courses should also be started at the same time as the biology courses in order to fulfill the requirements for the 300- and 400-level biology courses.

The core biology lectures and laboratory should be completed no later than the end of the junior year. Because BIOL301 Genetics is a pre- or corequisite for both BIOL305 and BIOL315, it should be completed as soon as possible to avoid any delay in graduation. The 15 semester hours of electives allow the student to specialize; courses should be chosen in consultation with an adviser. Although some electives can be taken as early as the sophomore year, most will be taken in the junior and senior years. Students are strongly advised to elect the remaining core course as one of their electives.