

BIOLOGY

PROGRAM OVERVIEW

Capital's biology program is designed to prepare students for direct placement in biology-related jobs or admission to graduate school (either master's or Ph.D. programs). Pre-professional tracks within the biology department are available to those who desire admission to medical, dental, veterinary or pharmacy schools.

Biology majors take a set of core courses to acquire foundational knowledge then build on this core knowledge with electives that allow students to explore molecular and organismal studies in biology. Most courses within the biology program include hands-on laboratory components or field experiences.

CAREERS AND PLACEMENT

Recent graduates of Capital's biology program have chosen one of four pathways:

- Direct placement into jobs that include Battelle, Nationwide Children's Hospital, Abbott Labs, Chemical Abstract Services, and Anheuser-Busch
- Admission to graduate school for a master's degree or Ph.D. in disciplines including genetic counseling, nutrition, public health, microbiology, and immunology
- Admission to professional schools – medical, dental, veterinary, physician assistant, and pharmacy
- Partnering with the education department to obtain teaching licensure

EXPERIENTIAL LEARNING

Students are encouraged to participate in internships and laboratory and field-based research opportunities that may lead to presentations at regional or national scientific meetings. Short-term field courses allow students to study biology and environmental science topics, and become involved in the broader community.

AS A GRADUATE, YOU WILL BE PREPARED TO:

- Demonstrate a working knowledge of the core areas of biology including molecular, genetic, microbiological, organismal, evolutionary, and ecological as they apply to the diverse nature of the field
- Retrieve, critically evaluate, and explain information from the relevant scientific literature
- Use the scientific method to formulate research questions and hypotheses
- Use appropriate data collection and computational analysis tools (including laboratory equipment and statistical analyses) to collect and analyze scientific data individually and collaboratively
- Communicate biological information effectively and appropriately for the discipline to different audiences in multiple formats
- Conduct actions and experiments responsibly and ethically

WHAT ARE OUR GRADS DOING NOW?

- Enrolled in medical, veterinary, physician assistant, or graduate research programs
- Science Writing
- Neuro-operative Technology
- Parks and Recreation Management
- Teaching
- Public Health
- Animal Caretaker
- Pharmaceutical Liaison
- Medical Device Sales
- Medical Research
- Zoo Keeper

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FACILITIES

Eight laboratories in the Battelle Hall of Sciences are used for biology teaching and research. A two-story greenhouse is also available for faculty and student research. State-of-the art laboratory components allow students to analyze genetic materials in multiple ways from samples grown in controlled laboratory conditions or from samples collected in the field, while the molecular biology laboratory has equipment to perform DNA fingerprinting analyses and a real time qPCR system. Two cadavers are used in the anatomy lab while physiology students perform ECG's, measure lung volumes, and stimulate skeletal muscle using iWorx technology.

Capital University's Primmer Outdoor Learning Center in the Hocking Hills region is a 74-acre property with seven ecosystems, including a 15-acre wetland, a secondary growth deciduous woodlot with groundwater seeps which feed into small streams, and restored prairie habitats. This center is used by students and faculty for research and service projects focused on ecological restoration, biological conservation, and environmental sustainability.

Four Year Sample Schedule of a Biology Major

First Year Fall

15 credit hours
Foundations of Biology I - 4
Principles of Chemistry I - 4
Biology Seminar - 1
Math (as placed) - 3
Signature Learning - 3

First Year Spring

17-18 credit hours
Foundations of Biology II - 4
Principles of Chemistry II - 4
Math - 3-4
Signature Learning - 3
Signature Learning - 3

Second Year Fall

16 credit hours
Genetics - 4
Calculus - 4
Biology Seminar - 1
Language - 4
Signature Learning - 3

Second Year Spring

16-18 credit hours
Microbiology - 4
Biology Elective - 2-4
Signature Learning - 3
Signature Learning - 3
Language - 4

Third Year Fall

16-18 credit hours
Research Methods - 3
General Physics I - 4
Signature Learning - 3
Biology Elective - 3-4
Elective - 3-4

Third Year Spring

14-15 credit hours
General Physics II - 4
Internship OR
Individual Study - 3
Biology Seminar - 1
Biology Elective - 3-4
Signature Learning - 3

Fourth Year Fall

13-16 credit hours
Biology Elective - 3-4
Biology Seminar - 1
Signature Learning - 3
Ecology - 4
Elective - 2-4

Fourth Spring

15-17 credit hours
Molecular Biology - 4
Electives - 5-6
Biology Elective - 3-4
Signature Learning - 3

All courses subject to availability and advisor approval. All undergraduates must demonstrate that Signature Learning goals have been met.

