

GLOBAL CHANGE BIOLOGY CERTIFICATE

Perhaps the biggest challenge of the 21st century is anticipating and addressing the consequences of global change for biological systems. Society depends on living organisms (e.g., for food, resources, medicines), and on the biological processes these organisms support, such as the maintenance of water quality, erosion control, and pollination. Facing this challenge requires an deep understanding of the biology of the organisms involved. This knowledge lays a foundation for many disciplines including biomedical sciences, biotechnology, conservation, management, and restoration. The Global Change Biology Certificate will address these needs by focusing on the biological consequences of global change.

General Certificate Requirements

Additional requirements for graduation can be found on the Degree/Certificate Requirements for Graduation page (<https://catalog.umn.edu/academics/graduation-requirements/>).

Unless otherwise noted in individual program requirements, a minimum grade point average of 2.00 in all work attempted at the University of Minnesota-Morris is required for graduation. Please see the Academic Policies and Procedures page (<https://catalog.umn.edu/academics/policies-procedures/>) for information on how your GPA is calculated.

Courses taken to satisfy the requirements of a major, minor, or certificate program must be completed with a grade of C- or better unless a higher grade is noted in the program requirements.

Post-Secondary Certificate - Global Change Biology

Course Requirements

Code	Title	Hours
Complete all of the following courses:		
BIOB 272	Genetics and Evolution	4
BIOB 260	Cellular and Molecular Biology	4
BIOB 435	Comparative Animal Physiology	3
BIOE 370	General Ecology	3
BIOE 448	Terrestrial Plant Ecology	4
Complete two of the following courses:		6-9
BIOE 416	Alpine Ecology	
BIOE 428	Freshwater Ecology	
BIOE 439	Stream Ecology	
BIOE 447	Ecosystem Ecology	
BIOE 458	Forest and Fire Ecology	
BIOO 433	Plant Physiology	
BIOO 470	Ornithology	
BIOO 475	Mammalogy	
Total Hours		24-27