BIOL-151 – Biology of the Environment

University Arts and Science

Effective Term & Year: Fall 2022
Course Outline Review Date: 2024-04-01

Program Area: Math and Sciences

Description:

Biology 151 focuses on environmental and ecological topics within biology from a local perspective. BIOL 151 helps inform students about local and global environmental issues, current events, and new and emerging technologies from a scientific perspective. Students, with the help of their instructor, will design and implement a research project that focuses on a local environmental issue and present it to members of the community.

Program Information:

This course is designed as a one semester lecture/lab offering for non-science majors. This course is a required course for the Environmental Studies Certificate and is a lab science elective for the Teacher Education Program, Bachelor of Business Administration Degree Program, Sustainable Business Program, and other Arts majors with an interest in environmental issues.

Note: BIOL 151 does not meet the requirements for a science major's course and therefore cannot be substituted for BIOL 101 or BIOL 102.

Delivery Methods: On-campus (Face-to-Face)

Credit Type: College of the Rockies Credits

Credits: 3

Course type/s: Lab Sciences, Sciences

Instructional Activity and Hours:

Activity	Hours
Classroom, Directed Studies or Online Instruction	45
Seminar/Tutorials	
Laboratory/Studio	45
Practicum/Field Experience	
Co-op/Work Experience	
Other	
Total	90

Course Requisites:

None

Flexibile Assessement: Yes

In some cases students may be able to apply for recognition of prior learning outside the classroom. This flexible assessment process provides equivalent course credit. It is a rigorous process that may include external evaluation, worksite assessment, demonstration, standardized test, self-assessment, interview, products/portfolio, and challenge exam, or other measures as appropriate. Tuition fees apply. Contact an education advisor for more information.

Course Transfer Credit:

For information about receiving transfer credit for courses taken at either British Columbia or Alberta institutions, please see https://www.bctransferguide.ca/ or https://transferalberta.alberta.ca . For more transfer credit information, please visit https://www.cotr.bc.ca/Transfer

All requests for course transfer credit from institutions in British Columba or elsewhere should go to the College of the Rockies Enrolment Services office.

Textbook Resources:

Textbook selection varies by instructor and may change from year to year. At the Course Outline Effective Date the following textbooks were in use:

Withgott, J., Laposata, M. and Murck, B.(2017). *Environment: The Science Behind the Stories*

(3rd Canadian Edition*).* Pearson Education

Please see the instructor's syllabus or check COTR's online text calculator https://textbook.cotr.bc.ca/ *for a complete list of the currently required textbooks.*

Learning Outcomes:

Upon the successful completion of this course, students will be able to:

- apply the scientific method to complete a group research project that focuses on an environmental problem that exists in the local community and communicate the results of the project to members of the local community. Recommend strategies that may improve sustainability regarding the environmental issue;
- incorporate the concept of the triple bottom line, nested systems of sustainability, and environmental ethics to an environmental problem that occurs in the community;
- identify potential problems that may affect the biodiversity of the ecosystem as well as factors that may contribute positively to the health of the system;
- identify the major subsystems within a given ecosystem and discuss how living and nonliving entities interact within the system;
- identify multiple environmental biology groups and/or advocates within the local community and describe their specialties and roles in environmental biology;
- critically analyze non-peer reviewed articles regarding environmental topics for accurate and comprehensive information, expertise of the presenting author, as well as provide an opposing point of view;
- research new and emerging technology in the field of environmental biology and use the concepts presented in the course to make an informed opinion on their value and potential impact;
- design and implement scientific experiments related to environmental biology using common laboratory equipment and procedures within a small group; and
- critically evaluate results from scientific experiments.

Course Topics:

- Overview of Human Activities, Sustainability, and Biodiversity
- The Scientific Method
- Basic Ecological Principles
- Abiotic and Climate Factors
- Ecosystems
- Biotic Factors and Species Interactions
- Climate and Terrestrial Biodiversity
- Aquatic Biodiversity
- Sustaining Biodiversity
- Environmental Ethics

- Agricultural Sustainability
- Current events and new technology regarding environmental biology issues

See instructor's syllabus for the detailed outline of weekly readings, activities and assignments.

Evaluation and Assessments

Assessment Type: On-Campus (face-to-face)

Assessment Type	% of Total Grade
Assignments	10%
Midterms	20%
Final Exam (Cumulative)	30%
Lab Assignments/Lab Quizzes	20%
Lab Project	20%
Total	100%

Grade Scheme

A+	A	A-	B+	B	B-	C+	C	C-	D	F
>=90	89-85	84-80	79-76	75-72	71-68	67-64	63-60	59-55	54-50	<50

Evaluation Notes: A grade of "D" grants credit, but may not be sufficient as a prerequisite for sequential courses.

Evaluation Notes Comments:

Note: Attendance at all laboratory sessions and exams is required. However, arrangements can be made for documented illness or bereavement. Lecture attendance is strongly recommended and students are responsible for all course material covered in lecture and assigned readings. Lab skills are essential to the further understanding of the course material, therefore, in order to pass the course, a passing grade (50% or greater) is required for both the laboratory portion and lecture portion of the course.

Exam Attendance:

Students must attend all scheduled exams at the appointed time and place. Instructors may approve an alternate exam to accommodate an illness or personal crisis. Department heads will consider other written requests. Any student who misses a scheduled exam without prior approval will receive a "0" on the exam.

Academic Policies:

College of the Rockies policies related to courses can be found at https://cotr.bc.ca/about-us/college-policies/ and include the following:

- Policy 2.4.3 Students with Documented Disabilities
- Policy 2.4.4 Student Conduct (plagiarism, other cheating, behavioral misconduct)
- Policy 2.5.8 Academic Performance
- Policy 2.5.3 Grade Appeal
- Policy 2.4.9 Student Concerns Re Faculty

Course Changes:

The College of the Rockies updates course outlines regularly to meet changing educational, employment and marketing needs. The instructor will notify students in writing of any updates to this outline during the semester. The instructor reserves the right to revise, add or delete material while meeting the learning outcomes of this course outline.