



## BIOL-080 – Biology – Advanced Level

### College Preparation and Upgrading

**Effective Term & Year:** Fall 2022

**Course Outline Review Date:** 2025-09-01

**Program Area:** Upgrading for Academic and Career Entry

#### Description:

Biology 080 students study the scientific method and apply this process to laboratory procedures. The theory of evolution is introduced along with general studies of microorganisms, plants, and animals. Principles of ecology are introduced using examples from local ecosystems. Laboratory experiences include field sampling.

#### Program Information:

Biology 080 is equivalent to Grade 11 Biology.

**Delivery Methods:** Directed/Guided Studies

**Credit Type:** ABE Credits

**Credits:** 0

#### 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	
<b>Total</b>	<b>90</b>

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**Course Requisites:**

None

**Flexible Assessment:** 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.

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**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 Columbia or elsewhere should go to the College of the Rockies Enrolment Services office.

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**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:

Campbell, Neil A. et al. 2007. *Modern Biology*. 3rd Edition. Pearson Prentice-Hall.

Simon, Eric J. et al. 2010. *Campbell Essential Biology*. 4th Edition. Pearson.

*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.*

Textbooks for Directed Studies are available on loan from the COTR Library.

## Learning Outcomes:

All Biology 80 – Advanced Biology learning outcomes follow those outlined in the current edition of Adult Basic Education: A Guide to Upgrading in British Columbia’s Public Post-Secondary Institutions – An Articulation Handbook. <https://www.bctransferguide.ca/search/abe> (2019-2020 ABE Articulation Guide).

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

- identify the levels of biological organization;
- describe organic macromolecules and their monomers: proteins, carbohydrates, lipids, nucleic acids;
- describe the cell theory;
- describe and compare major structures and their functions in prokaryotic and eukaryotic cells;
- outline the processes of photosynthesis and cellular respiration and explain their roles in living systems;
- explain cell division in terms of sexual and asexual reproduction;
- cite evidence for evolutionary theory;
- explain the mechanisms of evolution;
- discuss the origin of life;
- demonstrate an understanding of classification;
- identify major taxonomic groups;
- identify structures and distinguishing characteristics and describe life processes for the following groups: viruses, bacteria, protists, fungi, plants – nonvascular and vascular, animals – invertebrates and vertebrates;
- describe energy flow and nutrient cycles within ecosystems;
- characterize ecosystems and the interactions therein;
- describe ecological changes over time;
- define biosphere and characterize biomes; and
- explore and analyze ecological issues, such as: climate change, habitat destruction and/or restoration, biodiversity, species extinctions, environmental stewardship.

## Laboratory Skills

All biology courses must include a minimum of seven dedicated laboratory and/or fieldwork activities, wherein biology learners will:

- demonstrate familiarity with common lab and field equipment and its use;
- conduct lab and field procedures safely and ethically;
- demonstrate microscope skills;
- collect and record data effectively;
- analyze and interpret data collected; and
- communicate results and conclusions

The following topics may be included:

- First peoples' ecological knowledge and practices
- Bioethics
- Ethnobotany
- Resource management
- Applied ecology
- Methods in ecology
- Behavioural ecology
- Genetics
- Parasitology
- Local topics

### Course Topics:

- Cell Biology
- Evolution
- Diversity of Life
- Ecology
- Laboratory Skills

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

*The outcomes of this course meet and are consistent with the outcomes prescribed for Computer Studies: Fundamental Level in the Adult Basic Education in British Columbia Colleges – An Articulation Handbook –*

<https://www.bctransferguide.ca/wp-content/uploads/2022/08/abeguide2223.pdf>

## Evaluation and Assessments

### Assessment Type: Directed/Guided Studies

Assessment Type	% of Total Grade
Assignments	15%
Labs	20%
Chapter Tests	20%
Midterms	20%
Final Exam	25%
Total	100%

## Grade Scheme

A+	A	A-	B+	B	B-	C+	C	C-	D	F
>=95	94-90	89-85	84-80	79-75	74-70	69-65	64-60	59-55	54-50	<50

**Pass requirements:** None

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

### 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.