



## BIOL-090 – Biology-Provincial Level (Human Biology)

### College Preparation and Upgrading

**Effective Term & Year:** Fall 2022  
**Course Outline Review Date:** 2026-04-01

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

#### Description:

Students in this course are introduced to biochemistry, cell structure, and cellular processes (respiration, protein synthesis, cell division) as foundations for understanding human anatomy and physiology. The major human organ systems are covered in detail. Laboratory experiences include experiments, demonstrations, and some dissection. Knowledge of general chemistry is essential in understanding much of the material in this course.

#### Program Information:

BIOL 090 is equivalent to Grade 12 Biology and can be used toward the BC Adult Graduation Diploma.

**Delivery Methods:** On-campus (Face-to-Face), Hybrid – On-campus (Face-to-Face) and Online, Directed/Guided Studies

**Credit Type:** ABE Credits

**Credits:** 3

#### Instructional Activity and Hours:

Activity	Hours
Classroom, Directed Studies or Online Instruction	82.5
Seminar/Tutorials	
Laboratory/Studio	30
Practicum/Field Experience	

---

Co-op/Work Experience	
Other	
Total	112.5

---

**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.

---

**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.

---

**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:

Avissar, Y., Choi, J., DeSaix, J., Jurukovski, V., Wise, R., & Rye, C. (2012). *Biology*. Rice University. Retrieved from <https://openstax.org/details?biology>

Fowler, S., Roush, R., & Wise, J. (2013) *Concepts of Biology*. Rice University. Retrieved from <https://openstax.org/details?concepts-biology>

Molnar, C., & Gair, J. (2013). *Concepts of Biology – 1st Canadian Edition*. Rice University.

Retrieved from <https://opentextbc.ca/biology/>

Various authors (2015). CK-12 Foundation. Various modules have been edited and retrieved from <http://www.ck12.org>

(optional) Mader, Sylvia. *Inquiry into Life*. 14th ed. The McGraw Hill Companies Inc., 2014.

*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:

### **A. Cell Biology**

- Explain the role of molecules, including water, carbohydrates, proteins, lipids, and nucleic acids
- Describe major structures and functions of cells and their components, including
  - the basic mechanisms of protein synthesis
  - the basic mechanisms of membrane transport
  - the basic mechanisms of DNA replication
- Describe the role of enzymes and their importance to cellular processes.
- Outline the processes of cellular respiration
- Describe and compare mitosis and meiosis

### **B. Genetics**

- Describe the principles of inheritance
- Solve basic genetics problems
- Describe the role of DNA

### **C. Human Biology**

- Apply the concept of homeostasis
- Demonstrate knowledge of integration of tissues, organs, and systems
- Identify structures and describe functions of at least six of the following:
  - Skeleto-muscular system
  - Digestive system
  - Cardiovascular system
  - Blood and immunity
  - Respiratory system
  - Endocrine system

- Nervous and sensory system
- Excretory system
- Reproductive system

## Options

The following topics may be included:

- Bioethics
- Biotechnology
- Cancer
- Human development
- Local topics
- Nutrition
- Photosynthesis
- Public health issues

## Laboratory Skills

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

- Write a formal lab report
- 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
- Communicate results and conclusions

---

## Course Topics:

A. Cell Biology

B. Genetics

C. Human Biology

The following topics may be included:

- Bioethics
- Biotechnology
- Cancer
- Human development
- Local topics

- Nutrition
- Photosynthesis
- Public health issues

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: On-Campus (face-to-face)

Assessment Type	% of Total Grade
Unit Tests and/or Midterm Exams	30%
Unit Quizzes and Assignments	10%
Lab Report(s) and Assignments	20%
Lab Exam	10%
Final Exam	30%
Total	100%

### Assessment Type: Online

Assessment Type	% of Total Grade
Unit Tests and/or Midterm Exams	20%
Online Activities and Assignments	20%
Lab Report(s) and Assignments	20%
Lab Exam	10%
Final Exam	30%
Total	100%

### Assessment Type: Directed/Guided Studies

Assessment Type	% of Total Grade
Unit Tests and/or Midterm Exams	30%
Unit Quizzes and Assignments	20%
Lab Report(s) and Assignments	15%
Lab Exam(s)	5%
Final Exam	30%
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.