



Biology, Provincial Level (Human Biology) – BIOL 090

Adult Education/Adult Upgrading Program

Course Outline

COURSE IMPLEMENTATION DATE: Pre 1998
OUTLINE EFFECTIVE DATE: September 2021
COURSE OUTLINE REVIEW DATE: April 2026

GENERAL COURSE 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: This course is delivered face-to-face, hybrid, and in a directed studies format. Labs must be done face-to-face.

ABE Credits: 3

Hours for this course: 112.5 hours

Typical Structure of Instructional Hours:

Instructional Activity	Duration
Lecture Hours	67.5
Seminars / Tutorials	
Laboratory / Studio Hours	30
Practicum / Field Experience Hours	
Other Contact Hours (Guided Practice)	15
Total	112.5

Practicum Hours (if applicable):

Type of Practicum	Duration
On-the-job Experience	N/A
Formal Work Experience	N/A
Other	N/A
Total	

Course Outline Author or Contact:

Ben Heyde, BSc, MSSE

Signature

APPROVAL SIGNATURES:

Department Head

Joy Brown

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Department Head Signature

Dean Signature

EDCO

Valid from: September 2021 – April 2026

Education Council Approval Date

COURSE PREREQUISITES AND TRANSFER CREDIT:**Prerequisites:** None**Flexible Assessment (FA):**

Credit can be awarded for this course through FA

 Yes No

Learners may request formal recognition for flexible assessment at the College of the Rockies through one or more of the following processes: External Evaluation, Worksite Assessment, Demonstration, Standardized Test, Self-assessment, Interview, Products/Portfolio, Challenge Exam. Contact an Education Advisor for more information.

Transfer Credit: For transfer information within British Columbia, Alberta and other institutions, please visit <http://www.cotr.bc.ca/Transfer>.

Students should also contact an academic advisor at the institution where they want transfer credit.

Prior Course Number: N/A

Textbooks and Required 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 <http://go.cotr.bc.ca/tuition/tCalc.asp> 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

Options

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- ◆ Local topics
- ◆ Nutrition
- ◆ Photosynthesis
- ◆ Public health issues

Please refer to the *Adult Basic Education: A Guide to Upgrading in British Columbia's Public Post-Secondary Institutions Articulation Handbook*. This handbook is available online at the Ministry of Advanced Education for the Government of BC.

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

EVALUATION AND ASSESSMENT: Face-to-Face Delivery

Assignments	% 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	<u>30%</u>
Total	100%

Directed Studies Delivery

Assignments	% Of Total Grade
Unit Tests and/or Midterm Exams	30%
Unit Quizzes and Assignments	20%
Lab Report(s) and Assignments	15%
Lab Exam(s)	<u>5%</u>
Final Exam	<u>30%</u>
Total	100%

Hybrid Delivery (online lecture, face-to-face labs)

Assignments	% 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	<u>30%</u>
Total	100%

Please see the instructor's syllabus for specific classroom policies related to this course, such as details of evaluation, penalties for late assignments, and use of electronic aids.

EXAM POLICY:

Students must attend all required scheduled exams that make up a final grade at the appointed time and place.

Individual instructors may accommodate for illness or personal crisis. Additional accommodation will not be made unless a written request is sent to and approved by the appropriate Department Head prior to the scheduled exam.

Any student who misses a scheduled exam without approval will be given a grade of "0" for the exam.

COURSE GRADE:

Course grades are assigned as follows:

Grade	A+	A	A-	B+	B	B-	C+	C	C-	D	F
Mark (Percent)	≥ 95	94-90	89-85	84-80	79-75	74-70	69-65	64-60	59-55	54-50	< 50

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

ACADEMIC POLICIES:

See www.cotr.bc.ca/policies for general college policies related to course activities, including grade appeals, cheating and plagiarism.

COURSE CHANGES:

Information contained in course outlines is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational, employment, and marketing needs. The instructor will endeavour to provide notice of changes to students as soon as possible. The instructor reserves the right to add or delete material from courses.