

DIVISION OF APPLIED ARTS

BIOL 050

Introduction to Biology I

3 Credits

Fall, 2020



COURSE OUTLINE

BIOL 050

INTRODUCTION TO BIOLOGY I

3 CREDITS

PREPARED BY: Annie-Claude Letendre, Instructor

DATE: June 8, 2020

APPROVED BY:

DATE:

APPROVED BY SENATE:

RENEWED BY SENATE:



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COURSE TITLE

INSTRUCTOR: Annie-Claude Letendre

OFFICE LOCATION: A2208

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TELEPHONE: 867.456.6984

OFFICE HOURS: tbd

CLASSROOM: Online via Zoom

TIME: M/W/R 1:00-15 pm

DATES: Monday/Wed./Thurs.
Sept. 2nd – Dec. 18th, 2020

COURSE DESCRIPTION

Introducing Biology covers the principles of many aspects of biology similar to those described by the ABE Articulation, Advanced Level, of British Columbia. This course deals with the scientific method, the chemical and physical background for biology, plant tissues, microscopy, plant nutrition, movement and transport, basic genetics, animal behaviour, evolution, ecology, photosynthesis, cell division, and the classification of living organisms and viruses. Biology 050 is articulated with B.C. and Alberta Advanced Biology courses and is a prerequisite for Biology 060 (which could lead to a university biology program) as well as for the Renewable Resources program at Yukon University.

PREREQUISITES

Sixty-five percent (65%) in high school science (grade 10), or Yukon University Science 030 including units in Human Biology and Introductory Chemistry, or permission of the instructor. Students may be asked to demonstrate writing skills. Students must be at an English 050 (English 11) writing level.

RELATED COURSE REQUIREMENTS

It is highly recommended that all students have access to a computer or other device and Internet to do their studies. The minimum specifications for a student device are as follows:

Requirement	Windows-based PC	Apple Mac/macOS-based PC
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Operating System	Windows 10	macOS X
Web Browser	Firefox, Edge or Google Chrome	Firefox, Edge or Google Chrome
RAM/Memory	4 GB	4 GB
Storage	5 GB of available space	5 GB of available space

EQUIVALENCY OR TRANSFERABILITY

Biol 050 is equivalent to Yukon and B.C. High School Biology 11 and is transferable to academic institutions throughout B.C. and Alberta. See Learning Outcome 1 for specific transferability.

LEARNING OUTCOMES

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

1. Meet the competencies as stated for ABE Advanced Level Biology as stated in the current edition of the B.C. Provincial Government's publication Adult Basic Education: A guide to Upgrading in British Columbia's Public Post-Secondary Institutions – An Articulation Handbook at <http://www.bctransferguide.ca/search/abe> .
2. Explain the basic concepts of biology covering similar material to that of Yukon Biology 11, as described in the course description above.
3. Enter science programs, especially those related to biological sciences such as a health program or Renewable Resources Management, or further biology courses.
4. Demonstrate an appreciation of biology within the course context as well as in a larger perspective, such as the relation of biology to chemistry and physics, First Nations attitudes towards life, and the role of biology in socio-economics.

Laboratory Skills – Learning Outcomes

Upon successful completion of this course, the student will be able to: a. Conduct lab and field procedures safely and ethically b. Demonstrate familiarity with common lab and field

equipment and its use c. Demonstrate microscope skills d. Collect and record data effectively
e. Analyze and interpret data collected f. Communicate results and conclusions

COURSE FORMAT

There are approximately thirty scheduled sessions generally consisting of: review / topic introduction, viewing videos and/or online content, lecture, and/or discussion. The laboratories consist of seven three-hour sessions. Student input on potential activities will be encouraged at the beginning of this course. Traditional medicines (plants), traditional foods and nutrition (implications of changes), and why plants grow in one area and not another are some of the possible topics to explore.

ASSESSMENTS:

Attendance & Participation: Students **must** attend the laboratory sessions in order to submit a report. Students arriving late to a laboratory session may be refused entry.

Assignments: typed assignments will be handed, with one or two chapters from the textbook covered in each assignment. The textbook is the primary resource of this course.

Seminar: Students will be required to research and present a topic relevant to Biology 050. The presentation should be no longer than 10 minutes.

Tests: There are two examinations covering the contents.

EVALUATION:

Assignments	20%
Midterm Exam	25%
Labs	20%
Seminar	10%
Final Exam	25%
Total	100%

REQUIRED TEXTBOOKS AND MATERIAL

Concepts of Biology 1st Canadian Edition, Charles Molnar and Jane Gair, OpenStax College

Yukon University Laboratory Manual and Laboratory Kit

ACADEMIC AND STUDENT CONDUCT

Information on academic standing and student rights and responsibilities can be found in the current Academic Regulations that are posted on the Student Services/ Admissions & Registration web page.

PLAGIARISM

Plagiarism is a serious academic offence. Plagiarism occurs when a student submits work for credit that includes the words, ideas, or data of others, without citing the source from which the material is taken. Plagiarism can be the deliberate use of a whole piece of work, but more frequently it occurs when students fail to acknowledge and document sources from which they have taken material according to an accepted manuscript style (e.g., APA, CSE, MLA, etc.). Students may use sources which are public domain or licensed under Creative Commons; however, academic documentation standards must still be followed. Except with explicit permission of the instructor, resubmitting work which has previously received credit is also considered plagiarism. Students who plagiarize material for assignments will receive a mark of zero (F) on the assignment and may fail the course. Plagiarism may also result in dismissal from a program of study or the University.

YUKON FIRST NATIONS CORE COMPETENCY

Yukon University recognizes that a greater understanding and awareness of Yukon First Nations history, culture and journey towards self-determination will help to build positive relationships among all Yukon citizens. As a result, to graduate from ANY Yukon University program, you will be required to achieve core competency in knowledge of Yukon First Nations. For details, please see www.yukonu.ca/yfnccr.

ACADEMIC ACCOMMODATION

Reasonable accommodations are available for students requiring an academic accommodation to fully participate in this class. These accommodations are available for students with a documented disability, chronic condition or any other grounds specified in section 8.0 of the Yukon University Academic Regulations (available on the Yukon University website). It is the student's responsibility to seek these accommodations. If a student requires an academic accommodation, he/she should contact the Learning Assistance Centre (LAC): lac@yukonu.ca.

TOPIC OUTLINE

A. Cell Biology

- Identify the levels of biological organization
- Describe organic macromolecules and their monomers: proteins, carbohydrates, lipids, and 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

B. Evolution

- Cite evidence for evolutionary theory
- Explain the mechanisms of evolution
- Discuss the origin of life

C. Diversity 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, nonvascular and vascular plants, invertebrate and vertebrate animals

D. Ecology

- Describe energy flow and nutrient cycles within ecosystems
- Characterize ecosystems and the interactions therein
- Describe ecological changes over time
- Define biosphere and characterize biomes
- Explore and analyze ecological issues, such as climate change, habitat destruction and/or restoration, biodiversity, species extinctions, environmental stewardship

Laboratory Skills

Seven dedicated laboratory and/or fieldwork activities, wherein biology learners will:

- Conduct lab and field procedures safely and ethically
 - Demonstrate familiarity with common lab and field equipment and its use
 - Demonstrate microscope skills
 - Collect and record data effectively
 - Analyze and interpret data collected
 - Communicate results and conclusions
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