APPLIED ARTS DIVISION
School of Academic & Skill Development
Fall Semester 2018

COURSE OUTLINE

BIOL 050

INTRODUCING BIOLOGY

87.5 HOURS
3 CREDITS

PREPARED BY: Gerald Haase, Instructor DATE: July 10, 2018

APPROVED BY Erica Bourdon, Chair DATE: July 10, 2018

APPROVED BY ACADEMIC COUNCIL:

RENEWED BY ACADEMIC COUNCIL:

APPLIED ARTS DIVISION
Biol 050
3 Credit Course
Fall Term, 2018

INTRODUCING BIOLOGY

INSTRUCTOR:	Gerald Haase	**OFFICE HOURS:**	Thursdays 2:30 – 4:30
OFFICE LOCATION:	Room A2320	**CLASSROOM:**	C1511
E-MAIL:	ghaase@yukoncollege.yk.ca	**TIMES:**	Please see below
TELEPHONE:	(867) 668-8757	**DATES:**	Please see below

COURSE OFFERING September 6, 2018 to December 14, 2018
Lectures: Tuesdays & Thursdays 1:00 – 2:25 p.m.
Labs: Mondays: 1:00 p.m. to 4:00 p.m. (Room A2805)

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 College.

PREREQUISITES

Sixty-five percent (65%) in high school science (grade 10), or Yukon College 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

Computer and internet access are required if not attending class face-to-face.

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

1. There are approximately thirty scheduled 1 ½-hour sessions generally consisting of:
   - review / topic introduction
   - viewing videos / online content
   - lecture / discussion / notes

2. The laboratories consist of seven three-hour sessions.

3. Material is tested in two three-hour exams.

4. Course activities, such as field trips and guest speakers, which are relevant to the subject material or to various cultural beliefs (e.g. First Nations), may be included. 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 Policies

The following is an excerpt from the Yukon College Academic Regulations and Procedures (2013) manual from section 4.01—Attendance:

4.01 Attendance

Students in all program areas are expected to attend classes. However, attendance requirements may vary from program to program. Special permission from the Dean or Chair is required if a student is enrolled in another course and the timetables for the two courses overlap. Attendance requirements are noted below.

- Individual instructors shall inform students of the attendance requirements for their course at the beginning of the semester.
- Admission to a lecture or laboratory may be refused by the instructor due to lateness or misconduct. Students who do not attend classes or submit assignments as required may be refused admission to further classes.
- Attendance at practicum activities and work placement activities (in Co-op programs) is required. Students shall notify the placement agency as well as the instructor whenever practicum/work attendance is not possible.
- Attendance for sponsored students will be reported to the sponsoring agency as required.

Attendance Policies -- Specific

Students must attend the laboratory sessions in order to submit a report. Students arriving late to a laboratory session may be refused entry, and will be assessed a late penalty.

Assignments

1. Material covered in this course is derived from 20 chapters of the textbook. Of these chapters, 15 assignments will be handed in (either typed or very neatly handwritten), with one or two chapters covered in each assignment. **The textbook is the primary resource of this course.** Assigned questions are meant to be representative; although only some questions from each chapter will be assigned, students should have a thorough knowledge of all material covered. Assignments are due two biology classes after the chapter is covered.
2. Supplementary and bonus assignments may also be assigned or offered.
3. After each of the 7 laboratories, a lab assignment is handed in. Due date for labs is one week after the lab is performed.

Tests

There are two examinations covering the contents as follows:

1. Midterm Exam - chapters 1-6, 23, 8, 9, 10
2. Final Exam - chapters 27-36

Seminar Presentation / Research Report

Students who select the research seminar will be required to research and present a topic relevant to Biology 050. The presentation should be no longer than 20 minutes. For students who select the seminar, no paper will be required.
Students who select the research report will be required to research and submit a report on a topic relevant to Biology 050. No class presentation will be required. Critical thinking questions are a prime source of research topics; students who choose their own topics will need to submit their topic ideas to the instructor for approval. **This is a formal research report; it is to be written according to CSE format. Students should be clear on the criteria before beginning the paper, and ensure that all relevant resources are utilized.**

EVALUATION

A final grade for the course will be assigned on the following basis:

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

Yukon College uses a letter grade system and calculates weighted grade point averages (GPA) on a 4.0 scale. Following are equivalents of the letter grades:

LETTER GRADE	PERCENTAGE EQUIVALENT	GRADE POINT
A+	95 – 100	4.0
A	86 – 94	4.0
A-	80 – 85	3.7
B+	75 – 79	3.5
B	70 – 74	3.0
B-	65 – 69	2.7
C+	62 – 64	2.5
C	58 – 61	2.0
C-	55 – 57	1.7
D	50 – 54	1.0
F	under 50	0.0

Rewrites

A rewrite for a failing grade on an examination (less than 50%) may be permitted at the instructor's discretion. These examinations will be written no earlier than two weeks after the date of the original examination. The mark will be recorded whether it is higher or lower than the original. However, a maximum mark of 65% will be awarded.

"**No Shows**"

A student who misses an examination will receive a mark of zero for that examination but may be permitted a rewrite. Exceptions may be made if a student receives prior permission from the instructor, or faces an emergency. Some form of documentation of the emergency may be required.

Note: The passing mark for this course is 50%. A mark of 65% or better is required for entrance into Biology 060.

REQUIRED TEXTBOOKS AND MATERIALS:

- Mader, Sylvia and Windelspecht, M., *Inquiry into Life, 15th Edition*
- Yukon College Laboratory Manual (supplied to students via course fees)
- Videos and animations as provided by the textbook website & Moodle site
- Laboratory materials as required (available for use at the campus or remotely)

ACADEMIC AND STUDENT CONDUCT

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

Cell phone ringers must be turned off while in class; use of phones is discouraged except for urgent messages (eg. child care) or research on topic.

Respectful communication is required at all times; this includes avoidance of swearing.

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 College.

YUKON FIRST NATIONS CORE COMPETENCY

Yukon College 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 College

program, you will be required to achieve core competency in knowledge of Yukon First Nations. For details, please see www.yukoncollege.yk.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 College Academic Regulations (available on the Yukon College 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@yukoncollege.yk.ca.

TOPIC OUTLINE / SPECIFIC LEARNING OUTCOMES

A. Cell Biology

- 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

B. Genetics

- Describe the principles of inheritance
- Solve basic genetics problems

C. Evolution

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

D. 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
  - -Plants – nonvascular and vascular
  - -Animals – invertebrates and vertebrates

E. 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