ORIGINAL COURSE IMPLEMENTATION DATE: September 1988
REVISED COURSE IMPLEMENTATION DATE: January 2023
COURSE TO BE REVIEWED (six years after UEC approval)**:** June 2028
Course outline form version: 09/08/2021

OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

Course Code and Number: BIO 093	**Number of Credits:** 3 Course credit policy (105)
Course Full Title: Provincial Level Biology **Course Short Title:**	
Faculty: Faculty of Education, Community, and Human Development	**Department:** Upgrading and University Preparation

Calendar Description:

Mammalian organ systems will be studied in detail. Organic and basic chemical processes will be used as a basis of study for the organ systems investigated. Laboratory skills are developed in a series of laboratory sessions designed to enhance the learning outcomes associated with the lecture material.

Prerequisites (or NONE):	One of the following: (C- or better in one of Anatomy and Physiology 12 or Biology 12) or (C+ or better in one of Biology 11, Life Sciences 11, or BIO 083). Note: Chemistry 11 or CHEM 083, and/or Principles of Mathematics 11, Applications of Mathematics 11, Foundations of Mathematics 11, Pre-calculus 11, or MATH 085 are highly recommended.
Corequisites (if applicable, or NONE):	NONE
Pre/corequisites (if applicable, or NONE):	NONE

Antirequisite Courses *(Cannot be taken for additional credit.)*

Former course code/number: **N/A**

Cross-listed with: **N/A**

Equivalent course(s): **N/A**

(If offered in the previous five years, antirequisite course(s) will be included in the calendar description as a note that students with credit for the antirequisite course(s) cannot take this course for further credit.)

Typical Structure of Instructional Hours

Lecture/seminar	45
Supervised laboratory hours (science lab)	45
Total hours	**90**

Scheduled Laboratory Hours

Labs to be scheduled independent of lecture hours: ☒ No ☐ Yes

Course Details

Special Topics course: **No**
(If yes, the course will be offered under different letter designations representing different topics.)

Directed Study course: **No**
(See policy 207 for more information.)

Grading System: **Letter grades**

Delivery Mode: **May be offered in multiple delivery modes**

Expected frequency: **Every semester**

Maximum enrolment (for information only)**: 24**

Prior Learning Assessment and Recognition (PLAR)

PLAR is available for this course.

Transfer Credit *(See **bctransferguide.ca**.)*

Transfer credit already exists: **Yes**

Submit outline for (re)articulation: **Yes**
(If yes, fill in transfer credit form.)

Department approval	**Date of meeting:**	January 18, 2022
Faculty Council approval	**Date of meeting:**	March 4, 2022
Undergraduate Education Committee (UEC) approval	**Date of meeting:**	June 17, 2022

Learning Outcomes *(These should contribute to students' ability to meet program outcomes and thus Institutional Learning Outcomes.)*

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

Human Biology:

A. Cell Biology
   a. Explain the role of molecules, including water, carbohydrates, proteins, lipids, and nucleic acids
   b. Describe major structures and functions of cells and their components, including the basic mechanisms of gene expression, membrane transport, and DNA replication.
   c. Describe the role of enzymes and their importance to cellular processes
   d. Outline the processes of cellular respiration
   e. Describe and compare mitosis and meiosis

B. Genetics
   a. Describe the principles of inheritance
   b. Solve basic genetics problems
   c. Describe the role of DNA in heredity
   d. Explore modern applications of genomics and biotechnology

C. Human Biology
   a. Apply the concept of homeostasis
   b. Demonstrate knowledge of integration of tissues, organs, and systems
   c. Identify structures and describe functions of at least six of the following
      i. Skeleto-muscular system
      ii. Digestive system
      iii. Cardiovascular system
      iv. Blood and immunity
      v. Respiratory system
      vi. Endocrine system
      vii. Nervous and sensory system
      viii. Excretory system
      ix. Reproductive system

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

After completion of BIO 093 students will meet the outcomes described for Biology Provincial Level in the 2021-2022 ABE Articulation Guide available at https://www.bctransferguide.ca/search/abe.

Recommended Evaluation Methods and Weighting *(Evaluation should align to learning outcomes.)*

Final exam:	30%	Midterm exam:	20%		%
Quizzes/tests:	15%	Lab work:	35%		%

Details:

NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.

Texts and Resource Materials *(Include online resources and Indigenous knowledge sources. Open Educational Resources (OER) should be included whenever possible. If more space is required, use the Supplemental Texts and Resource Materials form.)*

	Type	Author or description	Title and publication/access details	Year
1.	Textbook	Mader	Inquiry Into Life 16 Ed.	2020
2.	Other		BIO 093 Lab Manual UFV Course Pack	2015
3.				

Required Additional Supplies and Materials *(Software, hardware, tools, specialized clothing, etc.)*

Lab Coats

Course Content and Topics

Lecture Topics:

- Scientific Method
- Classification of Life
- Energy and Laws of Thermodynamics
- Measurement and the Metric System
- Basic Chemistry
- Organic Chemistry (the 4 basic types of macromolecules)
- Cell Structure and Function
- Cell Membranes
- Cell Cycle and Mitosis
- Photosynthesis
- Enzymes
- Cellular Respiration
- Human Organization
- Homeostasis
- Musculoskeletal System
- Digestion
- Nutrition
- Cardiovascular system
- Blood
- Respiratory System
- Excretory System
- Immune System
- Meiosis
- Genetics, including basic problem solving
- DNA Structure and Protein Synthesis
- Cancer

Options: The following topics may be included:

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

Laboratory Topics (at least 7 labs will typically be chosen) examples include:

- Microscopy and measurement
- pH and Buffers
- Osmosis
- Cell Structure
- Organic Chemistry
- Cell Cycle and Mitosis
- Mammalian Tissues
- Digestive and Skeletal Systems
- Blood and Circulatory System
- Respiratory, Reproductive and Excretory Systems
- Meiosis and Genetics