

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



SAULT
COLLEGE

COURSE OUTLINE

COURSE TITLE: Biology Fundamentals

CODE NO. : BIO 112 **SEMESTER:** 1

PROGRAM: Pre-Health Sciences, General Arts and Science

AUTHOR: Leslie Dafoe

DATE: June 2015 **PREVIOUS OUTLINE DATED:** June 2014

APPROVED: *"Marilyn King"* *Aug. 2015*

	CHAIR, HEALTH PROGRAMS	DATE
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TOTAL CREDITS: 3

PREREQUISITE(S): Grade 10 Academic stream science or equivalent, with permission of the instructor.

HOURS/WEEK: 3

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For additional information, please contact the Chair, Health Programs

School of Health, Wellness and Continuing Education

(705) 759-2554, Ext. 2689

I. COURSE DESCRIPTION:

This course will utilize students' previous exposure to biology and build on that foundation through expansion of topics dealing with biological systems including cell anatomy and physiology, the process of genetic inheritance through meiosis and mitosis, Mendelian inheritance patterns, regulation of the internal environment in animals with respect to the acquisition of nutrients (digestion), gases (respiration), and the transport of nutrients and gases throughout the organism (circulation). This course also provides an introduction to biodiversity and taxonomy.

This curriculum is preparatory for continuation in a Health Sciences educational stream and career path.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the student will demonstrate the ability to understand and to utilize appropriate terminology related to:

1. Descriptions of the structure and function of cells and their organelles.
2. Descriptions of cell transport and the role of the plasma membrane in these processes.
3. Descriptions of the way in which cell structure and function influence tissue, organ and organism structure and function, and the relation to technological and environmental applications.
4. Demonstration of an understanding of the mechanics of mitosis and meiosis as well as the importance of meiosis in gene transmission and the inheritance of traits as proposed by Mendel.
5. Demonstration of an understanding of some of the landmark scientific discoveries leading to the modern definition of the gene, the advent of the fields of molecular biology and biotechnology and their importance in the medical, social, economic and political aspects of human life.
6. Descriptions of the ways in which the circulatory, digestive and respiratory systems of both plants and animals play a role in the maintenance of these organisms' internal environment.
7. Relate how personal lifestyle choices made by people can also influence the ability to maintain the internal environment and therefore health of a human body.
8. Demonstration of an understanding of the diversity of life on Earth as established through phylogeny and taxonomy.

9. Demonstration of an understanding of the shared characteristics that illustrate the unifying principles of life amongst the diversity of living organisms on Earth.

III. TOPICS:

1. Cellular structure and functions
2. Genetic continuity
3. Internal systems and regulation
4. The diversity of living things

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Campbell, N.A., J.B. Reece, E.J. Simon (2016). *Essential Biology with Physiology* (5e). Toronto: Benjamin Cummings/Pearson Education.

This text will also be required for BIO122 in semester two of the Pre-Health Sciences curriculum.

Sault College Learning Management System (D2L)

V. EVALUATION PROCESS/GRADING SYSTEM:

1. The pass mark for this course is **50%**. It is composed of unit tests, a unit assignment, and two exams.

2. Evaluation Methods:

Unit Tests (4 x 10% each)	40%
Assignment	10%
Mid-term Exam	25%
Final Exam	25%

1. Assignments are to be submitted before or at the **beginning** of lecture on their due date. After the lecture has started, all assignments will be considered late and a late penalty will be applied. Late submissions of assignments will have their values reduced at a rate of 10% per day after the due date. After 10 days the assignment will be evaluated as a zero.

2. Students missing a test or exam **because of illness or other serious reason** must contact and inform the professor via College student email, phone or personal note, **before** the test/exam begins. Those students who have notified the professor of their absence, according to policy, will be eligible to arrange an opportunity as soon as possible to write the exam at another time. Those students who **do not notify the professor** will receive a zero grade for that test or exam. **It is the student's responsibility** on his/her first day back at school to contact the professor to arrange to write the test or exam.

3. Students receiving overall marks that are borderline (59, 69, 79, 89) **may**, at the professor's discretion, have their mark advanced to the next grade category **if they have attended at least 80% of the classes.**

4. Students who receive an overall mark that is below 50% **may** be eligible to write a supplemental exam. The following criteria apply:
 - 47-49% in the overall mark
 - at least 55% on the midterm exam and two tests and/or assignments.
 - at least 80% of the classes were attended

The supplemental exam will cover the whole semester (entire course). It will be comprised of multiple choice questions and diagrams.

The following semester grades will be assigned to students in post-secondary courses:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 – 100%	4.00
A	80 – 89%	
B	70 - 79%	3.00
C	60 - 69%	2.00
D	50 – 59%	1.00
F (Fail)	49% and below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field /clinical placement or non-graded subject area.	
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.	
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.	
NR	Grade not reported to Registrar's office.	
W	Student has withdrawn from the course without academic penalty.	

Note: For such reasons as program certification or program articulation, certain courses require minimums of greater than 50% and/or have mandatory components to achieve a passing grade. It is also important to note, that the minimum overall GPA required in order to graduate from a Sault College program remains 2.0.

If a faculty member determines that a student is at risk of not being successful in their academic pursuits and has exhausted all strategies available to faculty, student contact information may be confidentially provided to Student Services in an effort to offer even more assistance with options for success. Any student wishing to restrict the sharing of such information should make their wishes known to the coordinator or faculty member.

VI. SPECIAL NOTES:

Attendance:

Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session.

VII. COURSE OUTLINE ADDENDUM:

The provisions contained in the addendum located in D2L and on the portal form part of this course outline.