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		
AUTHOR:	Leslie Dafoe		
DATE:	Sept. 2011	**PREVIOUS OUTLINE DATED:**	Jan. 2011
APPROVED:	"Marilyn King"		Sept/11
	CHAIR, HEALTH PROGRAMS		**DATE**
TOTAL CREDITS:	3		
PREREQUISITE(S):	Grade 10 Academic stream science or equivalent, with permission of the instructor.		
HOURS/WEEK:	3		

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 plants and animals with respect to the acquisition of nutrients (digestion) and gases (respiration), the transport of those nutrients and gases throughout the organism (circulation), the diversity of life on Earth and the anatomy, growth and functions of plants.

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.

10. Demonstration of an understanding of the main processes and mechanisms used by plants for growth and development.
11. Demonstration of an understanding of the ecological role played by plants in supplying both nutrients and energy to other organisms.

III. TOPICS:

1. Cellular structure and functions
2. Genetic continuity
3. Internal systems and regulation
4. The diversity of living things
5. Plant anatomy, growth and function

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Campbell, N.A., J.B. Reece, E.J. Simon (2007). *Essential Biology with Physiology, 3e.* Toronto. Benjamin Cummings.

Campbell, N.A., J.B. Reece, E.J. Simon (2007). *Study Guide Essential Biology with Physiology, 3e*. Toronto, Benjamin Cummings.

As a bonus to students, these two texts have been packaged together for a single price that is less than the price of the two separate texts. This same text package will also be required for Bio 122 in semester two of the Pre-Health Sciences curriculum.

V. EVALUATION PROCESS/GRADING SYSTEM:

1. The pass mark for this course is **50%**. It is composed of unit tests, unit assignments, a mid-term exam and a final exam.

2. Evaluation Methods:

Units Tests (3 in total)	30%
Unit Assignments (2 in total)	20%
Mid-term Exam	20%
Final Exam	30%

The mid-term exam will consist of course material from the beginning of the course until the mid-term date. The final exam will consist of material from the mid-term exam to the end of the course.

3. Students who receive a mark of below 50% may be eligible to write a supplemental exam. The following criteria apply:
   - received at least 47-49% in the overall mark
   - attended at least 80% of the classes
   - received at least 55% on the midterm exam and on at least 2 of the classroom tests and/or assignments.

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

4. Students missing the unit tests for any reason will **NOT** be able to write them at any other date; a grade of zero will result for that test.

5. All assignments are due 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.

6. Students missing the mid-term exam or final exam **because of illness or other serious reason** must contact and inform the professor via SCAAT student email, phone or personal note, **before** the exam (759-2554 ext. 630). 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 exam. **It is the student's responsibility** on his/her first day back at school to contact the professor to arrange to write the exam. Failure to notify the professor at this time will result in a mark of "0".

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

8. **MIDTERM GRADES:** The determination of midterm grades as “S” or “U” will be based on the cumulative grades of all tests and assignments completed up to the date of submission of midterm grades. Any student who does not achieve a passing grade on the majority of graded work will receive a “U” grade at midterm. Those who do receive a "U" grade at midterm are encouraged to schedule a meeting with the professor for additional help towards success in the course.

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

Grade	Definition	Grade Point Equivalent
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.

NOTE: Mid Term grades are provided in theory classes and clinical/field placement experiences. Students are notified that the midterm grade is an interim grade and is subject to change.

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 on the portal form part of this course outline.