SBI4U
Biology
Grade 12 University Preparation
2016-17

General Course Information

Prerequisite(s):	SBI3U
Teacher:	_____ (Science office, 416-395-3290 ext 20095)
Department:	Science
Assistant Curriculum Leader:	S. Evans, K. Fischer
Extra Help:	Available upon request.
Textbook and Replacement Cost:	Biology 12 (Nelson 2012)
Material Required:	Textbook, calculator, notebook, graph paper

Course Description

This course provides students with the opportunity for in-depth study of the concepts and processes that occur in biological systems. Students will study theory and conduct investigations in the areas of biochemistry, metabolic processes, molecular genetics, homeostasis, and population dynamics. Emphasis will be placed on achievement of detailed knowledge and the refinement of skills needed for further study in various branches of the life sciences and related fields. Further information about this course can be found at http://www.edu.gov.on.ca/eng/curriculum/secondary/science1112curr.pdf

Course Information

Strands of Study (Units)	Number of Lessons
Biochemistry	18
Metabolic Processes	18
Molecular Genetics	18
Homeostasis	18
Population Dynamics	6

*Note: The order and duration of the units may be subject to change.

Biochemistry

- Technological applications that affect biological processes and cellular functions are used in the food, pharmaceutical, and medical industries.
- Biological molecules and their chemical properties affect cellular processes and biochemical reactions.
- Biochemical compounds play important structural and functional roles in cells of all living organisms.

Metabolic Processes

- All metabolic processes involve chemical changes and energy conversions.
- An understanding of metabolic processes enables people to make informed choices with respect to a range of personal, societal, and environmental issues.

Molecular Genetics

- DNA contains all the genetic information for any living organism.
- Proteins control a wide variety of cellular processes.
- Genetic research and biotechnology have social, legal, and ethical implications.

Homeostasis

- Organisms have strict limits on the internal conditions that they can tolerate.
- Systems that maintain homeostasis rely on feedback mechanisms.
- Environmental factors can affect homeostasis.

Population Dynamics

- Population growth follows predictable patterns.
- The increased consumption of resources and production of waste associated with population growth result in specific stresses that affect Earth's sustainability.

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Teaching Strategies
You will have opportunities to learn and be assessed (formative assessment) before evaluations. Teaching strategies which may be used (but are not limited to) are: quizzes, tests, problem-sets, laboratory activities, hands-on activities, independent study, problem-based learning, role-plays, and simulations.

Assessment and Evaluation:

To promote student success, ongoing assessment and feedback is given regularly to the students. A variety of assessment and evaluation strategies are used in this course. Expectations are evaluated based on the provincial curriculum expectations and the strands and/or categories outlined in the ministry document.

Evaluation of the achievement of the overall curriculum expectations is based on the achievement chart for science. The achievement chart for science can be found at www.edu.gov.on.ca. Guidelines are consistent throughout the province. Marks are weighted according to the achievement chart categories (Knowledge/Understanding, Thinking/Inquiry, Application and Communication)

These categories help guide the creation of assessment and evaluation tools.

Each student's term mark will be in the form of a percentage grade based on their achievement in the following areas:

Knowledge/Understanding	30%
Application	25%
Communication	20%
Thinking/Investigation	25%

The breakdown of the final mark is as follows:

Term Evaluation	70%
Culminating Assignment	5%
Final Evaluation	25%

The final evaluation will be completed during the examination period and will be a written exam.

In addition to students' performance in the achievement categories, students will also be assessed on their performance in the following learning skills:

- Responsibility
- Organization
- Independent Work
- Collaboration
- Initiative
- Self-Regulation

For specific policies on assessment and evaluation, and academic honesty, please refer to School Procedures in the student agenda.