

SOUTH CARLETON HIGH SCHOOL

Ottawa-Carleton District School Board

COURSE OUTLINE

SBI4U - GRADE 12 University Prep Biology

Credit Value: 1 credit

Hours: 110

Prerequisite: SBI3U

Expectations

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 the achievement of detailed knowledge and the refinement of skills needed for further study in various branches of the life sciences and related fields.

Big Ideas

Unit Title	Biology Focus For Learning Expectations
Biochemistry	<ul style="list-style-type: none">• 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.• Biological compounds play important structural and functional roles in cells of all living organisms.
Metabolic Processes	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• Population growth follows predictable patterns.• The increased consumption of resources, and production of wastes associated with population growth in specific, stresses that affect Earth's sustainability.• Technological developments can contribute to or help offset the ecological footprint associated with population growth and the consumption of natural resources.

*NOTES: a. Specific learning expectations are available for each unit of study. b. The sequence of topics may not be exactly as listed above.

Accommodations for Exceptional Students

The Science department makes every effort to accommodate the identified needs of exceptional (IPRC'd) students and will attempt to differentiate curriculum delivery methods, student modes of expression, and assessment methods as recommended by the student's individual education plan (IEP).

Career Planning

The Science department makes every effort to ensure that students are aware of career opportunities related to various fields of science under study, and describe the contributions of scientists, including Canadians, to those fields.

Technology and Textbooks

The school will supply all necessary laboratory resources and materials.

Textbook: *Biology 12 McGraw Hill Ryerson* by Susan Gerards and Sharon Ramlochan (pdf version only)

Evaluation

Term Evaluations (70%)	Summative Evaluation (30%)
Students will be evaluated according to the overall expectations of the Ontario curriculum. <i>Assessment tools include both summative and formative tasks including but not limited to; tests/quizzes, assignments, projects, lab reports, skill based performance tasks and rich assessment tasks</i>	<i>The exam portion of the summative will occur during the exam period in Jan/June and will evaluate the whole semester's work. All students must be present.</i> <i>Project or assignment summative evaluation will be completed before the exam period begins.</i>

More information on South Carleton High School's policy on Assessment and Evaluation, on Academic Integrity, on punctuality, absenteeism and examinations can be accessed on our school website.