

Winston Churchill Collegiate Institute

Course Syllabus



General Information

Course Title	BIOLOGY 12 UNIVERSITY
Course Code	SBI4U
Department	SCIENCE
Office Location	A112
Office Hours	8 :45 am – 3 :30 pm

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

Prerequisite: Biology, Grade 11, University Preparation

Curriculum strands

Biochemistry

- Analyze technological applications of enzymes in some industrial processes, and evaluate technological advances in the field of cellular biology;
- Investigate the chemical structures, functions, and chemical properties of biological molecules involved in some common cellular processes and biochemical reactions;
- Demonstrate an understanding of the structures and functions of biological molecules, and the biochemical reactions required to maintain normal cellular function.

Metabolic Processes

- Analyze the role of metabolic processes in the functioning of biotic and abiotic systems, and evaluate the importance of an understanding of these processes and related technologies to personal choices made in everyday life;
- Investigate the products of metabolic processes such as cellular respiration and photosynthesis;
- Demonstrate an understanding of the chemical changes and energy conversions that occur in metabolic processes.

Molecular Genetics

- Analyze some of the social, ethical, and legal issues associated with genetic research and biotechnology;
- Investigate, through laboratory activities, the structures of cell components and their roles in processes that occur within the cell;
- Demonstrate an understanding of concepts related to molecular genetics, and how genetic modification is applied in industry and agriculture.

Homeostasis

- Evaluate the impact on the human body of selected chemical substances and of environmental factors related to human activity;
- Investigate the feedback mechanisms that maintain homeostasis in living organisms;
- Demonstrate an understanding of the anatomy and physiology of human body systems, and explain the mechanisms that enable the body to maintain homeostasis.

Population Dynamics

- Analyze the relationships between population growth, personal consumption, technological development, and our ecological footprint, and assess the effectiveness of some Canadian initiatives intended to assist expanding populations;
- Investigate the characteristics of population growth, and use models to calculate the growth of populations within an ecosystem;
- Demonstrate an understanding of concepts related to population growth, and explain the factors that affect the growth of various populations of species.

Course Materials & Replacement Costs

Textbook: Nelson Biology 12, Fraser et al (replacement cost \$100.00)

It is the responsibility of the student to return the same textbook they signed out at the beginning of the semester. If a textbook is not returned, the replacement cost must be paid before a new textbook is issued. Students failing to return their textbook or pay the replacement fee will not receive their report cards and timetables for the following school year, until their textbook is returned or the replacement cost is paid.

Expectations

- Students are expected to take responsibility for their own learning, to attend all classes, to use their class time effectively and to complete homework on a daily basis.
- Students are expected to come to class with the following materials: Textbook, Binder, Paper, Graph Paper, Pen(s), Pencil(s), Calculator & Ruler.
- No food or drink is allowed in the classroom.

Evaluation

Seventy percent of a student's final grade will be based on assessments and evaluations conducted throughout the term. Thirty percent of the final grade will be based on a final evaluation administered towards the end of the course.

Term Work (70%)

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|---------------------------------------------------------------------------|------------------------|
| ▪ Knowledge & Understanding
(Includes tests, quizzes & homework) | 35% / 24.5% final mark |
| ▪ Thinking & Investigation
(Includes lab reports & tests) | 20% / 14% final mark |
| ▪ Communication
(Includes classroom/homework assignments, ISU & Tests) | 20% / 14% final mark |
| ▪ Application
(ISU, assignments & tests) | 25% / 17.5% final mark |

Final Evaluation (30%)

Details of the final summative evaluation will be available towards the end of the semester.

If a student misses the Final Exam or any component of the final summative evaluation, they must bring in a medical certificate explaining their absence in order to avoid a mark of zero.

All information above is tentative and may change as the Science department deems

Learning Skills & Work Habits

Students are evaluated not only on the content they have learned, but also by the six (6) learning skills and work habits that evaluate key student habits and are considered essential skills. These learning skills and work habits evaluated on your report card are:

Responsibility

Collaboration

Organization

Initiative

Independent Work

Self-Regulation

These six (6) attributes are evaluated on a scale of Excellent (E), Good (G), Satisfactory (S) and Needs Improvement (N).

Missed Quiz, Test & Assignment Policy

If a student is absent for a quiz, the student will be permitted to write the quiz if:

-  A signed note is provided from the parent/guardian of the student excusing he/she for the missed class due to illness or an appointment.
-  A student is excused due to an excursion or athletic activity

A student will only be allowed to write the quiz if it has not yet been marked and returned to the other students. If the student is excused from the quiz for the above two (2) reasons and the quiz has been returned the student will be granted a "no mark."

It is the student's responsibility to make arrangements ahead of time for any tests/quizzes that are missed. Failure to do so may result in a mark of zero for the student.

Late Assignments/Work Policy

Teachers will assign due dates for various assignments, work and presentations. Students are expected to submit their work on or before the assigned due date. Late assignments and work will be accepted if:

-  A signed note is provided from the parent/guardian of the student excusing him/her for the missed class due to illness or appointment. The reason for the absence, the date of the absence and contact information for the parent/guardian must be included on the note.

If the student is absent in class due to an excursion/sporting activity, it is still the responsibility of the student to deliver the assignment/work prior to the due date/time.

If the assignment is late, 2% will be deducted from the mark for every day the work is late. Once the assignment has been marked and returned students will no longer be allowed to submit an assignment and will receive a mark of zero (0).

Note: The policies applicable to late assignments are in line with the guidelines as outlined in the Ministry of Education Policy document *Growing Success: Assessment, Evaluation, and Reporting in Ontario Schools* (page 43). Should a student wish to appeal the decision of the teacher as a result of extenuating circumstances he/she can bring it to the attention of the teacher, department Assistant Curriculum Leader and Vice Principal for review.

Missed Test and Final Exam Policy

If a student is absent for a unit test or final exam a doctor's note must be provided for the student's absence. The doctor's note should identify the date(s) of the absence(s) and medical office contact information. The note must be received by the teacher and office the day upon his/her return.

Upon receipt of the note the teacher will enter a 'no mark' or provide an alternative test. If a doctor's note is not provided, the student will be given a mark of zero (0).

Should a student miss a test or final exam for vacation purposes a mark of zero (0) will be assigned.

Academic Honesty (Plagiarism) Policy

Students are expected to demonstrate academic honesty on all assignments, presentations, tests and examinations. Cases of academic dishonesty will be dealt with on a case-by-case basis, and will involve an investigation, communication with the student and the parent/guardian, and a mark of zero (0) for the plagiarized work.

Students will be taught that plagiarism or cheating is:

-  Copying, reproducing or paraphrasing significant portions of someone else's published or unpublished material, and
-  Representing these as one's own thinking by not acknowledging the appropriate source, or by failing to use appropriate quotation marks

Students will also be taught how to accurately and appropriately document the information and ideas of others to avoid plagiarizing.

This applies to all assignments including lab reports, diagrams, essays, and computer projects. Different forms of writing require different types of acknowledgement and/or documentation. Whether the student has an opportunity to demonstrate his/her learning in another assignment will be at the discretion of the teacher and/or Vice Principal/Principal