


<p>Guelph Collegiate Vocational Institute Upper Grand District School Board Course Outline</p> 	<p>Department: Science</p> <p>Course Title: Biology</p> <p>Course Type: University Preparation</p> <p>Grade: 12</p> <p>Course Code: SBI 4U</p> <p>Credit Value: 1</p>

<p>Department Head: Carrie Warren</p> <p>Teachers: Ron Wight</p> <p>Teacher email: (not mandatory)</p> <p>Date of Development: September 2015</p>

<p>Curriculum Document: (copy subject-specific document from secondary curriculum website http://www.edu.gov.on.ca/eng/curriculum/secondary/2009science11_12)</p>	<p>Course Prerequisites/Corequisites:</p> <p>SBI 3U (required prerequisite)</p> <p>SCH 3U (highly recommended)</p>
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Course Description:

The course provides in-depth study of unifying concepts of biology and processes common to biological systems; and builds on the introduction provided in SBI 3U. Students explore the details of biochemistry, molecular genetics, metabolic processes, population dynamics, and homeostasis, in preparation for post-secondary study in various branches of the life sciences.

Term Work (70% of the final mark)**Unit Title, Big Ideas, and Unit Culminating Tasks**

Biochemistry: The structure and function of biological macromolecules required to maintain normal cell function.

Culminating Tasks: Enzyme Lab Report, Unit Test

Molecular Genetics: The structure and function of DNA and RNA, and their role in protein synthesis. Advances in genetics during the 20th and 21st centuries and the modern applications of these concepts.

Culminating Tasks: Lab Quiz, Unit Test

Metabolic Processes : The biochemical pathways organisms use in cellular respiration and photosynthesis to create metabolically useful energy.

Culminating Tasks: Fermentation Lab Report, Unit Test

Population Dynamics: The effects of relationships within ecosystems and other factors that regulate and limit population growth; including the effects of human populations.

Culminating Tasks: Toronto Zoo Assignment, Unit Test

Homeostasis: The complexity of homeostatic processes involved in maintaining of water, ionic, thermal and acid-base equilibria; and how the excretory, endocrine, and nervous systems interact to maintain homeostasis.

Culminating Tasks: Homeostasis Lab Report, Unit Test

Culminating Tasks/Exams (30% or the final mark)**Course Culminating Task/Exams and Description**

Final Exam

Based on the range of students' learning needs, a selection from the strategies listed below may be utilized. Refer to [list of teaching and assessment strategies](#).

Teaching Strategies: structured overview, explicit teaching, mastery lecture, demonstrations, case studies, inquiry, reading for meaning, concept attainment, field trip, conducting experiments, model building, reports, homework, assigned questions, discussion, laboratory groups, problem solving

Assessment and evaluation strategies: formative quizzes, formative and summative lab reports and lab quizzes, formative and summative assignments, summative unit tests, final exam

Textbooks/Learning Resource Materials (align with Policy 603)

Nelson Biology 12 (2003)
Nelson Biology 11 (2002)

Fees for Learning Materials/Activities

Learning Materials/Activities	Cost

Please refer to the [GCVI Student Handbook](#) for our school policies on:

- academic integrity
- late and missed assignments