

<b>Course Description:</b>  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.	<b>Level:</b>	University
	<b>Credit Value:</b>	1.00
	<b>Pre-requisite:</b>	SBI3U1
	<b>Department:</b>	SCIENCE
	<b>Teacher:</b>	Ms. S. Aziz
	<b>Course Fees:</b>	None

<b>Textbooks &amp; Resources:</b>
<ul style="list-style-type: none"> <li>· <i>The Ontario Curriculum, Grades 11 and 12 Science, Revised 2008</i></li> <li>· <i>Growing Success: Assessment, Evaluation and Reporting in Ontario Schools, First Edition, Covering Grades 1 to 12, 2010</i></li> <li>· <i>Biology 12, Fraser, D., LeDrew, B., Vavitsas A., White-McMahon, M., published by Nelson, 2012</i></li> </ul>

<b>Course Evaluation:</b> Student Evaluation consists of three components...									
<b>1) Learning Skills &amp; Work Habits:</b> Students are evaluated on 6 Learning Skills & Work Habits and are evaluated on a scale of Excellent (E), Good (G), Satisfactory (S) & Needs Improvement (N) and reported on the report card.	<b>The skills and habits consist of:</b> <ul style="list-style-type: none"> <li>· Responsibility</li> <li>· Organization</li> <li>· Independent Work</li> <li>· Collaboration</li> <li>· Initiative</li> <li>· Self-Regulation</li> </ul>								
	Skills and work habits are <b>not</b> included in the student's final mark unless specified in the curriculum expectations.								
<b>2) Term Mark (Assessment of Learning):</b> <i>It is the student's responsibility to submit evidence of the term's learning in a complete and timely manner.</i>  Student performance standards for knowledge and skills are described in the curriculum Achievement Chart. The curriculum expectations in science are grouped in <b>three categories</b> as follows:  <b>1. Understanding Basic Concepts</b> <b>2. Developing Skills of Investigation and Communication</b> <b>3. Relating Science to Technology, Society, and the Environment</b>	<b>The term evaluation consists of:</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;"><b>Knowledge</b></td> <td style="width: 20%; text-align: center;">35%</td> <td rowspan="3" style="width: 40%; text-align: center; background-color: #cccccc;"><b>70%</b></td> </tr> <tr> <td><b>Thinking, Investigation, &amp; Communication (TIC)</b></td> <td style="text-align: center;">25%</td> </tr> <tr> <td><b>Application</b></td> <td style="text-align: center;">10%</td> </tr> </table>		<b>Knowledge</b>	35%	<b>70%</b>	<b>Thinking, Investigation, &amp; Communication (TIC)</b>	25%	<b>Application</b>	10%
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<b>3) Final Evaluation (Assessment of Learning):</b> The <b>final written exam</b> will be administered during the school's final exam schedule. The final evaluation accounts for 30% of the final mark.	<b>The final evaluation consists of:</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">Summative evaluation (based on the entire course.)</td> <td style="width: 30%; text-align: center; background-color: #cccccc;"><b>30%</b></td> </tr> </table>		Summative evaluation (based on the entire course.)	<b>30%</b>					
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<b>Final Mark = 70% Term Mark + 30% Final Evaluations</b>									
For a detailed description on Course Evaluation, see "How Did I Get That Mark!" at <a href="http://www.satec.on.ca">www.satec.on.ca</a>									

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Scarborough Academy for Technology,



**Course Conduct Policies:** See Student Agenda.

<b>Course Outline:</b>			
Unit	Overall Expectations	Approximate Length	Major Unit Evaluation
<b>Biochemistry</b>	B1. analyse technological applications of enzymes in some industrial processes, and evaluate technological advances in the field of cellular biology; B2. investigate the chemical structures, functions, and chemical properties of biological molecules involved in some common cellular processes and biochemical reactions; B3. demonstrate an understanding of the structures and functions of biological molecules, and the biochemical reactions required to maintain normal cellular function.	6 weeks	Unit Test
<b>Metabolic Processes</b>	C1. analyse 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; C2. investigate the products of metabolic processes such as cellular respiration and photosynthesis; C3. demonstrate an understanding of the chemical changes and energy conversions that occur in metabolic processes.	4 week	Unit Test
<b>Molecular Genetics</b>	D1. analyse some of the social, ethical, and legal issues associated with genetic research and biotechnology; D2. investigate, through laboratory activities, the structures of cell components and their roles in processes that occur within the cell; D3. demonstrate an understanding of concepts related to molecular genetics, and how genetic modification is applied in industry and agriculture.	3 weeks	Unit Test
<b>Homeostasis</b>	E1. evaluate the impact on the human body of selected chemical substances and of environmental factors related to human activity; E2. investigate the feedback mechanisms that maintain homeostasis in living organisms; E3. demonstrate an understanding of the anatomy and physiology of human body systems, and explain the mechanisms that enable the body to maintain homeostasis.	4 weeks	Unit Test
<b>Population Dynamics</b>	F1. analyse 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; F2. investigate the characteristics of population growth, and use models to calculate the growth of populations within an ecosystem; F3. demonstrate an understanding of concepts related to population growth, and explain the factors that affect the growth of various populations of species.	2 weeks	Unit Test
<b>Scientific Investigation Skills and Career Exploration</b>	A1. demonstrate scientific investigation skills (related to both inquiry and research) in the four areas of skills (initiating and planning, performing and recording, analysing and interpreting, and communicating); A2. identify and describe careers related to the fields of science under study, and describe contributions of scientists, including Canadians, to those fields.	Integrated into each unit.	
<b>Note:</b>	All of the above units will include tests, quizzes, labs, and assignments.		
<b>Note: The order in which units are delivered may change due to student needs and resources available during the course</b>			

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**General Information:**

1 – As per SATEC school policy students are expected to come to class:

- in uniform and,
- with cell phones, mp3 players etc... unseen and not in use during class time.

2- To be successful in science, students are expected to:

- a) come to class prepared with pen/pencil, paper, binder and resources for your particular science course,
- b) demonstrate academic honesty with their own work and when working with others,
- c) complete assignments in a timely manner and,
- d) follow necessary safety rules and procedures of a science lab.

3- To seek extra help:

- a) speak to your Science Teacher and schedule a time to meet,
- b) use the school's homework club to access peer tutors and/or,
- c) speak to your guidance counsellor to arrange for a tutor.

**Science Department deadlines and plagiarism policy.**

- Each assignment will have a due date. Handing in an assignment **after the due date may result in a deduction of marks** at the discretion of the teacher.
- Students must be in class on dates of any major evaluations. IF you miss a major evaluation (i.e. unit test, exam, presentation) you must give your teacher a note **written and signed by your doctor or parent** stating the health reasons that kept you from class. Without a doctor's note, you will receive a mark of **zero** for that missed major evaluation
- If you know ahead of time that you will have an appointment, field trip, game, etc at the same time as the major evaluation, you must either arrange with your teacher to complete the evaluation before the scheduled date, or cancel your other plans so you can attend the evaluation.
- **Plagiarism includes:** copying another student's work; buying essays; copying and pasting Web info and calling it your own work; using information from print or Internet media without identifying the source.
- To avoid plagiarism:  
Do not cheat; Do not copy. Keep your eyes on your own paper during tests and exams. Do not steal intellectual property. Reference information properly (MLA)  
We only need to suspect cheating to penalize you.  
There will be no warnings, only marks of **zero**.

**This course meets Environment and ICT SHSM program requirements.**

