

<p>Course Description:</p> <p>This course enables students to further develop knowledge and skills in computer science. Students will use modular design principles to create complex and fully documented programmes according to industry standards. Student teams will manage a large software development project, from planning through project review. Students will also analyze algorithms for effectiveness. They will also investigate ethical issues in computing and further explore environmental issues, emerging technologies, areas of research in computer science and careers in the field.</p>	<p>Level: University</p> <p>Credit Value: 1.0</p> <p>Pre-requisite: ICS3U</p> <p>Department: Technology</p>
	<p>Course Fees: None</p>

<p>Textbooks & Resources:</p> <ul style="list-style-type: none"> • Growing Success: Assessment, Evaluation and Reporting in Ontario Schools • The Ontario Curriculum, Grades 10 to 12 Computer Studies, 2008 (revised) • Resource Book: None
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<p>Course Evaluation: Student Evaluation consists of three components...</p>											
<p>1) Learning Skills & Work Habits:</p> <p>Students are evaluated on 6 Learning Skills & Work Habits. The 6 essential skills are:</p> <ul style="list-style-type: none"> <li style="width: 50%;">• Responsibility <li style="width: 50%;">• Collaboration <li style="width: 50%;">• Organization <li style="width: 50%;">• Initiative <li style="width: 50%;">• Independent Work <li style="width: 50%;">• Self-Regulation <p>These six attributes are evaluated on a scale of Excellent (E), Good (G), Satisfactory (S) & Needs Improvement (N) and reported on the report card. They are not included in the course mark, unless specified in the curriculum expectations</p>											
<p>2) Term Mark (Assessment of Learning):</p> <p>Student performance standards for knowledge and skills are described in the curriculum Achievement Chart. The curriculum is assessed in four categories:</p> <table style="width: 100%;"> <tr> <td>• Knowledge Understanding</td> <td style="text-align: right;">14%</td> </tr> <tr> <td>• Thinking and Inquiry</td> <td style="text-align: right;">14%</td> </tr> <tr> <td>• Communication</td> <td style="text-align: right;">14%</td> </tr> <tr> <td>• Application</td> <td style="text-align: right;">28%</td> </tr> </table> <p>Evaluation of these four categories generates the term mark. The term mark accounts for 70% of the final mark.</p> <p>It is the students responsibility for submitting evidence of Learning.</p>		• Knowledge Understanding	14%	• Thinking and Inquiry	14%	• Communication	14%	• Application	28%		
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• Application	28%										
<p>3) Final Evaluation (Assessment of Learning):</p> <p>The final evaluation, administered at or towards the end of the course is based on the evidence shown to the right. The final evaluation accounts for 30% of the final mark.</p> <table style="width: 100%;"> <tr> <td colspan="2">The final evaluation consists of:</td> </tr> <tr> <td>Final Project Code</td> <td style="text-align: right;">12 %</td> </tr> <tr> <td>Final Project Class Work</td> <td style="text-align: right;">5 %</td> </tr> <tr> <td>Final Project Presentation</td> <td style="text-align: right;">3 %</td> </tr> <tr> <td>Exam</td> <td style="text-align: right;">10 %</td> </tr> </table>		The final evaluation consists of:		Final Project Code	12 %	Final Project Class Work	5 %	Final Project Presentation	3 %	Exam	10 %
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Final Project Code	12 %										
Final Project Class Work	5 %										
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<p>Final Mark = 70% Term Mark + 30% Final Evaluation</p>											
<p>For a detailed description on Course Evaluation, see “How Did I Get That Mark!” at www.satec.on.ca</p>											

<p>Course Conduct Policies: See Student Agenda.</p>
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Please retain this page in the front of your notebook for future reference.



**Scarborough Academy for Technology,
Environment & Computers @ WA Porter CI**

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Course Outline:

Unit	Description	Approximate Length	Unit Evaluation
1 Programming Concepts and Skills	Demonstrate the ability to use different data types and expressions when creating computer programs.	Week 1 Week 2 Week 3	Assignment 1 TEST 1
	<ul style="list-style-type: none"> - Console and Windows Applications - The .NET Framework Class Library - Data Types and Formatting data - Decision Making: Equality and Relational Operators - Using Control Statements like if and switch - Using increment, decrement and compound assignment operators - using Loop structures 		
	Describe and use modular programming concepts and principles in the creation of computer programs.	Week 4 Week 5 Week 6	Assignment 2 TEST 2
	<ul style="list-style-type: none"> - Creating methods within the main program - static Methods and static Variables - Scope of Declarations - Method Overloading - Recursion 		
	Apply the principle of modularity to design reusable code using classes	Week 7 Week 8 Week 9	Assignment 3 TEST 3
	<ul style="list-style-type: none"> - Introduction to Classes and Objects - Methods, Properties and Instance Variables - set and get Accessors - Overloaded Constructors - Data Abstraction and Encapsulation - Inheritance - Polymorphism - Composition 		
	Demonstrate the ability to use one-dimensional and two-dimensional arrays in computer programs	Week 10 Week 11	Assignment 4 TEST 4
	<ul style="list-style-type: none"> - Using arrays to store data and retrieve data from lists - Declare arrays, initialize arrays and refer to individual elements of arrays - Using the foreach statement - Pass arrays to methods - Declare and manipulate two-dimensional arrays 		
	Design programs using Files and Streams	Week 12	
	<ul style="list-style-type: none"> - Create, read, write and update files - Use classes File and Directory to obtain information about files and directories - Become familiar with sequential access file processing - Use classes FileStream, StreamReader and StreamWriter to read text from and write text to files. 		

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2 Software Development	Demonstrate the ability to manage the software development process effectively, through all of its stages - planning, development and closing. Apply standard project management techniques in the context of a student-managed team project.	Week 13 Week 14 Week 16 Week 16	Final Project and Presentation
3 Topics in Computer Science	Assess strategies and initiatives that promote environment stewardship with respect to the use of computers and related technologies. Analyze ethical issues and propose strategies to encourage ethical practices related to the use of computers. Analyze the impact of emerging computer technologies on society and the economy. Research and report on different areas of research in computer science and careers related to computer science.	Week 1 Week 2	Paper and Presentation

Note: Order units are delivered may change due to student needs and resources available during the course.

General Information:

Recommended Resources - Teacher provided Powerpoint Presentations
- <http://csharp.net-informations.com>

For Microsoft Visual C# 2008 Express Edition
-download: <http://www.dreamspark.com> .
-Registration Key: SECND-4T4WU-6JINC-WHAQM-ORD4H

For MSDN Visual C# - <http://msdn.microsoft.com/en-us/vcsharp/default.aspx>

For Framework Class Library <http://msdn.microsoft.com/en-us/library/ms306608.aspx>

For C# Tutorials - http://www.meshplex.org/wiki/Main_Page

How to Seek Extra Help - After school, twice a week

This course meets ICT SHSM program requirements.

