

## Stouffville District Secondary School

# ICS3U-Course Outline

<b>Board:</b>	YRDSB
<b>School:</b>	SDSS
<b>Curriculum Leader:</b>	Mr. A. Krnic
<b>Developing Teacher:</b>	Mr. A. Krnic
<b>Date of Revision:</b>	<b>Sept. 2021</b>
<b>Course Title:</b>	Computer Science, Grade 11, University
<b>Grade:</b>	11
<b>Course Code:</b>	ICS3U
<b>Credit Value:</b>	1.0
<b>Pre-requisite</b>	None
<b>Textbook:</b>	<b>None</b>
<b>Resources:</b>	<b><a href="https://replit.com">https://replit.com</a></b>
<b>Supplementary Resources:</b>	The Ontario Curriculum, Grades 10 to 12: Computer Studies, 2008 (revised) handouts, computer files, exemplars, PowerPoint presentations
<b>Course Description:</b>	<p>This course introduces students to computer science. Students will design software independently and as part of a team, using industry-standard programming tools and applying the software development life-cycle model. They will also write and use subprograms within computer programs. Students will develop creative solutions for various types of problems as their understanding of the computing environment grows.</p> <p>They will also explore environmental and ergonomic issues, emerging research in computer science, and global career trends in computer-related fields.</p>

### Learning Skills

Assessment of the learning skills will be done on an ongoing basis throughout the academic year by observations of students at work, checklists and interviews. This will include:

Classwork/homework (Work habits, homework and organization)  
 Completed work and seeking assistance (Organization and initiative)  
 Persistence and independence at tasks (Working independently and initiative)  
 Extension of task (Organization and initiative)  
 Achievement of group goals (Team work)

### Assessment Strategies

A variety of teaching/assessment strategies to address students' needs will be used during the school year.

*Formative assessments* will be ongoing through out the academic year. These *may* include:

- Diagnostic assessment
- Formative assessment
- Performance assessment
- Portfolio assessment
- Rubrics
- Checklists

### **Term Summative Evaluations (70% Term Work)**

- Tests, quizzes, projects, assignments and other forms of term summative evaluations will occur throughout the academic year and at the end of units of work as outlined in the accompanying course outline.
- Students will be provided with reasonable opportunities to master skills relating to the achievement of the curriculum expectations before assessment and evaluation occurs.
- Major evaluations will be announced at least one week in advance.
- Accommodations will be made for school activities, statutory holidays, religious days, cultural days, sports events and other occurrences that may impact on any scheduled evaluation. It is the student's responsibility to notify teachers of such absences in advance and to make up missed work.
- Absence on the day of an evaluation must be documented. If a student must miss an evaluation, s/he is expected to:
  - a. notify the teacher before the absence to arrange for an alternative date to make up the evaluation; or
  - b. in case of illness or unexpected absence, present a note to the teacher, signed by a parent or guardian, immediately upon their return to explain the absence. An alternate evaluation will then be scheduled at a mutually convenient time
- The Late Policy applies to all assignments and evaluations and will be discussed in class.
- Cheating will not be tolerated and will be dealt with appropriately.

### **Final Mark Calculation**

Final marks will be calculated as follows:

#### **Term Work: 70% Levels of Achievement:**

Knowledge and Understanding: 25%

Application: 25%

Thinking: 10%

Communication: 10%

Level 1: 50 - 59%

Level 2: 60 - 69%

Level 3: 70 - 79%

Level 4: 80 - 100%

#### **Final Summative Evaluations: 30%**

Final Programming Project 30%

### **Reporting**

**Report #1** 100% Term Work

**Report #2** 100% Term Work

**June Report** 70% Term Work + 30% Final Project

## **Unit Overviews**

### **Unit 1: Working in the Computing/Programming Environment**

**Periods:** 10

#### **Unit Description**

This unit focuses on basic computer and information science skills. Students identify hardware components, research ergonomic considerations, practise file management skills, access resources through local and wide area networks, and research the evolution of programming languages. They develop skills for success in the computer and information science environment. Students focus on the Computer and Information Science environment; students also examine respect for the environment and wise use of resources from a responsible perspective.

### **Unit 2: Beginning to Program**

**Periods:** 26

#### **Unit Description**

This unit focuses on basic programming structures. Students write simple programs, using variable assignment, repetition, and decision structures, and develop effective testing, validating, and documenting skills. They also explore roles of effective communicators and reflective thinkers when following a problem-solving model (e.g., user inputs a series of marks, each value is validated, the average is calculated, and a grade is assigned).

### **Unit 3: Problem Solving/Computers and Society**

**Periods:** 10

#### **Unit Description**

This unit focuses on using problem solving strategies in the computer science field as well as investigation into societal issues involving computer technology. This includes an exploration of careers in computer studies. Students also examine issues surrounding privacy, security, and ethical use of information.

### **Unit 4: Programming Part 2: Information Storage, modular programming and data structures**

**Periods:** 30

#### **Unit Description**

This unit focuses on the advanced features of programming. For example students learn about data storage and manipulation. In addition modular programming is introduced. Data structures such as arrays are taught. Common algorithms like the Bubble Sort are examined. Students are expected to incorporate as many of these more complex programming features in their final summative project.

### **Unit 5: Summative**

**Periods:** 20

Students will spend the last few weeks of class designing and developing an application that incorporates most, if not all, the concepts taught in the course. Example ideas include the following: video games, multimedia organizers, educational quizzes etc. This project comprises 30% of the course mark.

#### **Course Requirements:**

Students should create an account at <https://replit.com/login> as soon as possible. The vast majority of projects will require the use of this particular online program. A flash drive is also important to backup all your work.

