



COURSE OUTLINE 2019-2020

Course Name:	Computer Science Grade 12	Course Code:	ICS4U
Course Type:	Grade 12 University Preparation	Credit Value:	1.0
Teacher(s):	T. Ward		

Course Description:

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 programs, according to industry standards. Student teams will manage a large software development project, from planning through to project review. Students will also analyse algorithms for effectiveness. They will investigate ethical issues in computing and further explore environmental issues, emerging technologies, areas of research in computer science, and careers in the field.

Prerequisite: Introduction to Computer Science, Grade 11, University Preparation

http://www.edu.gov.on.ca/eng/curriculum/secondary/computer10to12_2008.pdf

Course Overall Expectations:

Strand	Overall Expectations
Programming Concepts and Skills	A1. demonstrate the ability to use different data types and expressions when creating computer programs; A2. describe and use modular programming concepts and principles in the creation of computer programs; A3. design and write algorithms and sub-programs to solve a variety of problems; A4. use proper code maintenance techniques when creating computer programs
Software Development	B1. demonstrate the ability to manage the software development process effectively, through all of its stages – planning, development, production, and closing; B2. apply standard project management techniques in the context of a student-managed team project.
Designing Modular Programs	C1. demonstrate the ability to apply modular design concepts in computer programs; C2. analyse algorithms for their effectiveness in solving a problem.
Topics in Computer Science	D1. assess strategies and initiatives that promote environmental stewardship with respect to the use of computers and related technologies; D2. analyse ethical issues and propose strategies to encourage ethical practices related to the use of computers; D3. analyse the impact of emerging computer technologies on society and the economy; D4. research and report on different areas of research in computer science, and careers related to computer science.

Assessment and Evaluation Strategies:

The purpose of assessment and evaluation is to improve student learning. Assessment and evaluation is based on the provincial curriculum expectations and the achievement levels outlined in the curriculum document. In order to ensure that assessment and evaluation are valid and reliable, and that they lead to the improvement of student learning, teachers use a variety of strategies throughout the course, including: providing students with feedback about their work (known as assessment for learning), helping to set learning goals and monitor their own progress (known as assessment as learning), and evaluation and reporting of progress in the form of grades and marks (known as assessment of learning).

Unit Overviews	Assessment and Evaluation Methods (May include major evaluations)
Review of Programming in Java (review of ICS3U)	Quizzes, Performance Task, Unit Test
Object Oriented Programming in Java	Quizzes, Performance Task, Unit Test
GUI Programming in Java	Quizzes, Performance Task
Random Access Files, Sorting, Searching, Vectors	Quizzes, Performance Task, Unit Test
Project Management	Project Management Research, Group Project
Independent Research	Written Report and/or Electronic Presentation
Final Exam	Written

Assessment and Evaluation Categories and Weights:

Achievement Chart Categories	
Category	Percentage
Knowledge/Understanding	25
Thinking/Inquiry	25
Communication	20
Application	30

Evaluation/Weight of Marks	
Evaluation	Percentage (subject to change when necessary)
Term Evaluation	70
Final Evaluation	30
<ul style="list-style-type: none"> • Exam 	

Learning Skills and Work Habits Assessment:

The development of learning skills and work habits is an integral part of student learning. These skills are:

- Responsibility
- Organization
- Independent Work
- Collaboration
- Initiative
- Self-Regulation

Learning skills and work habits influence student achievement and are included as a formal part of the assessment and evaluation process. Learning skills and work habits will be assessed through a variety of teacher strategies. (e.g. observation, student /teacher conference, self-reflection, checklists, exit cards, etc.) These important learning skills and work habits will be formally reported on the Provincial Report Card according to the following scale: E- Excellent, G- Good, S- Satisfactory, N- Needs Improvement.

General Policies:

1. Student Roles and Responsibilities

Students are expected to:

- be responsible for providing evidence of their achievement of the overall expectations within the time frame specified by the teacher, and in a form approved by the teacher;
- all course work is to be stored daily on the school network;
- understand that there will be consequences for not completing assignments for evaluation and/or for submitting those assignments late;
- use class time productively;
- in extenuating circumstances, request an extension from the teacher before the due date.

Mark deductions for late and missed assignments may apply to major assignments only. Typical deductions are 10% for the first school day and 5% for each school day thereafter to a maximum of 30%.

Test Policy:

According to the Growing Success Document (2010) a student must fulfill his/her responsibilities and commitments within the learning environment, including completing all types of assessments according to agreed-upon timelines. It is the department expectation that all students will write tests on the date set out by the classroom teacher. In the event of an illness, emergency, or other significant situation, an exception can be made, provided sufficient documentation is given to the classroom teacher. Please note that parental approval is not a legitimate reason for missing an evaluation. If an acceptable absence is known prior to the assessment date, alternate arrangements must be made with the classroom teacher in advance. If this expectation is not met, the evaluation will be completed but may not contribute to the student's course marks.

2. Attendance:

Students are expected to come to class prepared with what they need to get their work done. Regular attendance is essential. There are some assignments which will be completed in class and marks can only be obtained if you are present to do the work. The school policy on attendance will be strictly adhered to. Students are entirely responsible for work missed during an absence.

3. Assignment Submission

Students are expected to use class time productively. All assignments are expected to be submitted at the beginning of class on the due dates established. Students who have a problem with an assignment submission must talk to the teacher before the due date to discuss the extenuating circumstances and negotiate a later due date. Late assignments will receive a mark penalty as set out in the Board's Assessment and Evaluation Policy. Late assignments will not be accepted after the assignment has been marked and returned to students or discussed in class.

4. Collaboration/Plagiarism

Academic honesty is required in all work submitted for grading. Students must complete all assignments and projects on their own. However, they may discuss assignment specifications and requirements with others in the class to be sure they understand the problem. Cheating and plagiarism are serious offences which will not be condoned. Assignments which show evidence of copying are subject to the Board's plagiarism policy. Respect for the intellectual property of others is expected in this course, as in other courses. Cite all information obtained from other authors, books, magazines, or web sites.

5. Use of School Computers

Students are expected to behave in an appropriate manner while logged into the school network and/or wifi. Any inappropriate use of language, use of the network for purposes other than course-related activities, or malicious actions taken against others through the network are not permitted. Remember, all actions within the network are monitored. Be aware that accessing non-course-related sites during class is not permitted. Students who visit such sites will have their accounts disabled.

References:

TVDSB Assessment & Evaluation Policy, September 2011;

Growing Success - Assessment and Evaluation, and Reporting in Ontario Schools, 2010.

Student Planner and School Web site