A. Y. Jackson S. S.
www.ayjackson.ca

ICS4U1
Computer Science
Grade 12, University Preparation
2025 – 2026

General Course Information

Prerequisite:	ICS3U, Introduction to Computer Science, Grade 11, University Preparation
Teacher:	Ms. I. Lam (Room 232, X20115)
Department:	Computer Studies / Technology
Assistant Curriculum Leader:	Mr. M. Fenty
Extra Help:	By appointment with teacher
Textbook and Replacement Cost:	None
Material Required:	Notebook / Binder, USB Drive, Java Development Kit (JDK) 1.5 or later, a Java IDE of your choice

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.
The course is organized into four strands:

- Programming Concepts and Skills
- Software Development
- Designing Modular Programs
- Topics in Computer Science

A detailed list of the course expectations can be found at Ontario Ministry of Education Website.

Assessment and Evaluation

To promote student success, ongoing assessment and feedback will be given regularly to the students. A variety of assessment and evaluation strategies will be used in this course, including programming assignments, written quizzes and tests. Expectations will be evaluated based on the provincial curriculum expectations and the achievement levels outlined in the ministry document.

Expectations are organized into four categories of knowledge and skills. The categories and their corresponding weighting is as follows:

Knowledge and Understanding	20%
Thinking	25%
Communication	20%
Application	35%

Each student's final mark will be in the form of a percentage grade based on their achievement in the 4 categories on the achievement chart. The breakdown of the final mark is as followed:

Term Evaluation	70%
Final Evaluation	30%

The final Evaluation will be completed during the final 6 weeks of the course and may include a variety of summative activities including an exam, a presentation, a seminar, or an essay or another writing assignment.

In addition to students' performance in the achievement categories, students will also be assessed on their performance in the following learning skills:

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

For specific policies on assessment and evaluation, and academic honesty, please refer to *School Procedure*s in the student agenda.

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Overall Course Expectation

By the end of this course, students will:

- demonstrate the ability to use different data types and expressions when creating computer programs;
- describe and use modular programming concepts and principles in the creation of computer programs;
- design and write algorithms and subprograms to solve a variety of problems;
- use proper code maintenance techniques when creating computer programs;
- demonstrate the ability to manage the software development process effectively, through all of its stages – planning, development, production, and closing;
- apply standard project management techniques in the context of a student-managed team project;
- demonstrate the ability to apply modular design concepts in computer programs;
- analyse algorithms for their effectiveness in solving a problem;
- assess strategies and initiatives that promote environmental stewardship with respect to the use of computers and related technologies;
- analyse ethical issues and propose strategies to encourage ethical practices related to the use of computers;
- analyse 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.

Unit Summary

Unit Title	Approx. # of Hours
Unit 1: Review of Grade 11 Concepts and Introduction	15
Unit 2: Introduction to Modular Programming	25
Unit 3: Designing and Analyzing Algorithms	25
Unit 4: Other Topics in Computer Science	15
Unit 5: Software Development Life Cycle & Team Project	30

Classroom Expectation

- Academic Honesty – Students are expected to be academically honest by submitting their own original work, and the mark received is intended to reflect their own academic achievement.
- Online Code of Conduct as in the school agenda or https://www.tdsb.on.ca/About-Us/Policies-Procedures-Forms/Online-Code-of-Conduct
- Respect for Property – no food or drink in the lab
- Policy on late or missed evaluations as in the school agenda