Cameron Heights Collegiate Institute

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Subject	Grade	Level	Code	Prerequisite
Computer Science	12	University/College	ICS4UI/ICS4CI	ICS3UI/ICS3CI

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.

Ministry Document

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

Unit of Study	Overall Expectations* (Essential Understandings)	Assessment (All term marks approximate)
Programming Fundamentals	• 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 • Use proper code maintenance techniques when creating computer programs	• Assignment – 17 % • Test – 17 %
Data Structures	• Demonstrate the ability to apply modular design concepts in computer programs	• Project – 17 %
Algorithms	• Design and write algorithms and subprograms to solve a variety of problems • Analyse algorithms for their effectiveness in solving a problem • 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	• Project – 17 %
Summative Project	Single project to assess all overall expectations within the units of study	30% for final project

*All overall expectations carry forward to subsequent units.

Overall Expectations for Every Unit:

- 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