Brampton Centennial Secondary School

Computer Science Course Outline ICS4U0

Prerequisite:	None	*Teacher:*	Ms. Gorski
Semester:	Quadmester 4, 2020	*Room:*	129
Course Website:	http://www.gorskicompsci.ca/ICS4U.html	*Supplies:*	Computer, headphones.
Course Language:	Java using Android Studio (or Eclipse)		

Overarching Learning Goals:

1. **Modular Design**: Students will plan and code Android Apps using methods and objects.
2. **Algorithms:** Students will analyze programs based on algorithm trade-offs.
3. **Social and Ethical Issues:** Students will describe the impact of computers and technologies on society.

Unit Outline:

Units of Study	Curriculum Content	Activities/Projects
1. Android Development	XML, multiple classes, objects, GUI design, typography, testing.	Sheets, Programs, Virtual Test
2. Modularity	Methods, subdivision, String data, recursion, PDLC, careers.	Sheets, Programs, Virtual Test
3. App Project	Unit 1 & 2, SDLC: Analysis, Design, Code, Reflection.	Tic Tac Toe or Dice Project
4. Algorithms	Efficiency, 2D Arrays, sorts and searches, Internet algorithms.	Sheets, Programs, Virtual Test
5. App Project	Unit 4, SDLC: Analysis, Design, Code, Reflection.	Grid Game Project
6. Data Persistence	Objects, encapsulation, files, ADTs, Stack, Queue, BSTs. UML diagrams.	Sheets, Programs, Virtual Test
7. Card Game	Unit 7, SDLC: Analysis, Design, Code, Reflection.	Card Game Project
8. Other Topics	Careers in computer science. BST. Linked Lists, Impact on the environment, Privacy.	Sheets, Programs.

Course Specific Assessment Details:

Teachers use informed professional judgment to determine a student's final grade. Grades are based on evidence from observations, conversations and products.

Category	%	Learning Goals	Observations	Conversations	Products
Knowledge and Understanding	 30%	• Computer science content and understanding	• Participation • Listening and speaking skills.	• Question Response • Conferencing.	• Completion of basic coding exercises.
Communication	 20%	• Explaining concepts and social issues. • Designing user-interfaces.	• User Interface Design Choices. • Written expressions.	• Group Work • Classroom contributions.	• User interface design. • Terminology • Written explanations. • Code Documentation.
Application	 30%	• Use of computing constructs to write code.	• Program problem solving • Manipulative use (robots, circuits)	• Conferencing • Question response	• Use of computing constructs to write code.
Thinking	 20%	• Design diagrams. • Complex problems. • Engineering decisions.	• Project Self-Assessment	• Asking relevant questions	• Planning Skills. • Research. • Creative thinking. • Decision Making.

Determining the Grade:

Teachers determine students' report card grades by using their professional judgment. They interpret student evidence of learning and look at the student's most consistent level of achievement over time and give special consideration to more recent evidence demonstrated by the student. Student evidence of learning includes evidence gathered from **observations**, **conversations** and student **products** collected over a period of time (triangulation of data).

Final Mark Calculation = 50% Curriculum Units (1, 2, 4, 6, 8) + 50% Project Units (3, 5, 7)

There are no final exams in the Quadmester Model.

Learning Skills and Work Habits:

Learning Skills and Work Habits allow students to know how to learn more effectively, develop their potential as independent and autonomous learners and to take ownership over their own learning. While strong Learning Skills and Work Habits do contribute to a student's ability to be successful at school, they are evaluated separately from student achievement of course expectations.

Learning Skills	The student:
Responsibility	Fulfils responsibilities and commitments within the learning environment; completes and submits class work, homework, and assignments according to agreed-upon timelines; takes responsibility for and manages own behaviour.
Organization	Devises and follows a plan and process for completing work and tasks; establishes priorities and manages time to complete tasks and achieve goals; identifies, gathers, evaluates, and uses information, technology, and resources to complete tasks.
Independent Work	Independently monitors, assesses, and revises plans to complete tasks and meet goals; uses class time appropriately to complete tasks; follows instructions with minimal supervision
Collaboration	Accepts various roles and an equitable share of work in a group; responds positively to the ideas, opinions, values, and traditions of others; builds healthy peer-to-peer relationships through personal and media-assisted interactions; works with others to resolve conflicts and build consensus to achieve group goals; shares information, resources, and expertise and promotes critical thinking to solve problems and make decisions.
Initiative	Looks for and acts on new ideas and opportunities for learning; demonstrates the capacity for innovation and a willingness to take risks; demonstrates curiosity and interest in learning; approaches new tasks with a positive attitude; recognizes and advocates appropriately for the rights of self and others.
Self-Regulation	Sets own individual goals and monitors progress towards achieving them; seeks clarification or assistance when needed; assesses and reflects critically on own strengths, needs, and interests; identifies learning opportunities, choices, and strategies to meet personal; needs and achieve goals; perseveres and makes an effort when responding to challenges.

Timelines and School Day Length:

School start and end times for students will remain the same as in previous years, though students will have a shortened day in the classroom. Students who are scheduled to be at school in-person will start at their regular start times and will be dismissed after 150 minutes of in-person learning. Once they arrive home, it is expected they will join their classmates with distance learning.

Missed Summative Assessments – Term:

Students who know ahead of time that they will miss an assessment are to discuss the situation beforehand with the subject teacher. Students should be prepared to complete any missed assessment on ***the first day of return*** to school or as negotiated with the teacher. Students who are absent on the day of the assessment for reasons such as illness, field trip or suspension are responsible for:

- The work covered and assigned during the class
- The handing in of assignments at a time previously negotiated with a teacher
- The writing of any missed tests at a time previously negotiated with the teacher

After a legitimate prolonged absence (more than two days) the student is to make arrangements with the subject teacher immediately upon returning to school for an alternative date for the missed assessment. Students who miss an in-class summative assessment for an unauthorized reason may lose the opportunity to complete the task. At reporting time, the teacher will use professional judgment to determine if the student has missed key evaluations or too many evaluations. If there is insufficient evidence of achievement to validate a passing grade, the credit will be in jeopardy.