



**Glendale Secondary School
Technology Course Outline
Computer Science, Grade 12
University Preparation, ICS4U**



TEACHER: Mr. Tait **PREREQUISITE:** ICS3U **HOURS:** 110 **CREDIT VALUE:** 1

DEPARTMENT HEAD: Mrs. Ciprietti **TEXTBOOK:** None

GUIDELINE: The Ontario Curriculum, Grades 10 to 12, Computer Studies

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.

STRANDS and OVERALL EXPECTATIONS:

A. Programming Concepts and Skills

By the end of this course, students will:

- 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 subprograms to solve a variety of problems;
- A4. use proper code maintenance techniques when creating computer programs.

B. Software Development

By the end of this course, students will:

- 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.

C. Designing Modular Programs

By the end of this course, students will:

- C1. demonstrate the ability to apply modular design concepts in computer programs;
- C2. analyse algorithms for their effectiveness in solving a problem.

D. Topics in Computer Science

By the end of this course, students will:

- 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.

(Curriculum documents, with all overall and specific expectations are available at: <http://www.edu.gov.on.ca/eng/curriculum/secondary/>)

The primary purpose of assessment and evaluation is to improve student learning

ASSESSMENT

The process of assessing student learning is continuous and on-going. Teachers use information gathered through assessments to provide feedback for students, to guide instruction and develop individual learning goals for students. This is assessment *for* learning. Students use this feedback to continuously improve their achievement and set individual learning goals. This is assessment *as* learning. Information from assessments informs the teacher's professional judgment, but is not used in determining the student's level of achievement.

EVALUATION

Evaluation is the process of determining a level of student achievement of the Overall Expectations for a course, which is recorded as a mid-term or final grade on a report card.

Students will be given numerous and varied opportunities to demonstrate their achievement of the Overall Expectations across the four categories of achievement (Knowledge & Understanding, Thinking, Communication and Application). Evidence of student achievement of the Overall Expectations is collected over time from three different sources - observations, conversations and student products.

To be successful students **must demonstrate achievement of EACH of the Overall Expectations** for the course. If a student is missing evidence of achievement of one or more of the Overall Expectations then a lower limit will be determined by the teacher.

In determining a report card grade teachers use their professional judgment to interpret the evidence of student achievement which reflects the student's most consistent level of achievement with special considerations given to the more recent evidence.

The final grade is determined by the following breakdown:

70 % - evaluations made at the end of units throughout the semester.

30% - final demonstrations of learning (culminating activities and/or final examinations)

REPORT CARDS

Student progress is reported at 3 times during the semester.

Interim Report - October and March. Reports on student Learning Skills and Work Habits with next steps for improvement.

Mid-term Report Card - November and April. Reports on student achievement of the Overall Expectations to date. **Incomplete achievement** is reflected on Mid-term Report Cards, but replaced when learning has been demonstrated.

Final Report Card - February and July. Reports on student achievement of all of the Overall Expectations.

ACADEMIC HONESTY

Students are responsible for being academically honest in all aspects of their schoolwork. Academic dishonesty includes a variety of behaviours including cheating, plagiarism, facilitating or aiding academic dishonesty, and the unauthorized access or manipulating of student records, work and computer programs. Such behaviours impede the learning process and threaten the educational environment for all students.

Intentional academic dishonesty will result in disciplinary consequences. Teachers and parents should support students in striving for excellence and producing work with integrity.

ATTENDANCE AND LEARNING SKILLS

There is a direct link between good attendance and success at school. Students are expected to attend classes regularly and on time. Evidence of student achievement is gathered during classes through observations and learning conversations.

Learning Skills play an important role in a student's level of achievement. Students will be assessed on the following learning skills: responsibility, organization, independent work, collaboration, initiative, and self-regulation.

CELL PHONES/PERSONAL ELECTRONIC DEVICES

Teachers will determine when personal electronic devices, including cell phones, will be used as instructional tools/supports. At other times these devices (with the exception of electronic translators) are not to be used and must be turned off and be stored away. Consequences for inappropriate use of these devices may include removal of the device from the learning environment.

SCHOOL WIDE SUPPORTS

- ☺ Student Support Team (formerly know as Learning Resource)
 - In-class help
 - Test and exam support
 - Alternate learning environment
- ☺ English Language Learner Support Team
 - Lunch-time help
 - Test and exam support
- ☺ Math lunch-time help
- ☺ Math Homework Help - on-line support
- ☺ Information via school website @ <http://schools.hwdsb.on.ca/glendale/>
- ☺ School wide access to password protected wireless network
 - Access to on-line resources
- ☺ Literacy Coaching
- ☺ Literacy @ Lunch
- ☺ Learning Commons @ Lunch
- ☺ Paper and electronic calendars
- ☺ Teacher/department Lunch-time/before/after school help