** Harbord Collegiate Institute **

**Computer Engineering Technology (TEJ 3M)**

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| **Business and Information Technology Department**Teacher*:* **Mr. D. Oei**Scheduled Hours*:* **110** | Ministry curriculum policy document: **The Ontario Curriculum Grades 11 and 12 – Technological Education – 2009**Credit Value*:* **1** Prerequisite: **None** |

**Course Description**

This course examines computer systems and control of external devices. Students will assemble computers and small networks by installing and configuring appropriate hardware and software. Students will develop knowledge and skills in electronics, robotics, programming, and networks, and will build systems that use computer programs and interfaces to control and/or respond to external devices. Students will develop an

awareness of related environmental and societal issues, and will learn about college and university programs leading to careers in computer technology.

**Course Content Overview**

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| **Course Strands** | **Concepts** |
| A. Computer Technology Fundamentals | A1. Computer HardwareA2. Computer SystemsA3. Electronics, Robotics, and Computer InterfacingA4. Networking ConceptsA5. Data Representation and Digital Logic |
| B. Computer Technology Skills | B1. Hardware SolutionsB2. Computer SystemsB3. Electronics, Robotics, and Computer InterfacingB4. Network Setup and ManagementB5. Computer Programming |
| C. Technology, The Environment, and Society | C1. Technology and the EnvironmentC2. Technology and Society |
| D. Professional Practice and Career Opportunities | D1. Health and SafetyD2. Ethics and SecurityD3. Career Opportunities |

 **Assessment of Student Achievement**

The mark for the course will be based on term work worth 70% and a summative evaluation worth 30%. The four achievement categories of knowledge and skills, encompassing all the curriculum expectations in this course will be weighted as follows:

Knowledge and Understanding 25%

Thinking 25%

Communication 20%

Application 30%

Due dates for assessments are set by the teacher and communicated to students during class and posted on the online classroom. Due dates are **firm**. The teacher may refuse late work if the student gains an unfair advantage over those that have met the due date. A mark of “0” may be recorded for any missed work as specified by Ministry policy and TDSB guidelines.

**Learning Skills Assessment**

These skills will be assessed throughout the course and reflected on the report card.

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| **Skills** | **Rating Scale** |
| Responsibility Organization Independent Work Collaboration Initiative Self-Regulation | E – ExcellentG – GoodS – SatisfactoryN – Needs Improvement |

**Strategies for Assessment and Evaluation of Student Performance**Assessment strategies are appropriate to the course type and to the students’ range of learning needs. Some of the strategies used: assessment for learning (surveys, questions, conferences), assessment as learning (quizzes, questions, conferences, discussions, demonstrations, learning logs, portfolios) and assessment of learning (tests, presentations, in-class assignments, case studies, conferencing, portfolios) and peer assessment.

**Teaching and Learning Strategies**Teaching and learning strategies in this course reflect the appropriate balance of theoretical components and practical applications. In addition, teaching and learning strategies are appropriate to the range of students’ learning needs. Some of the strategies used are case studies, connecting theory with applications through field trips and guest speakers, brainstorming, videos, authentic projects, higher order thinking activities, learning centres, readings, interactive learning objects, research, discussions/debates, journaling, word walls, and the socratic/direct instruction.

**Classroom Expectations**:

* Academic Honesty – Students are expected to be academically honest. They are expected to submit their own work, so that the mark received reflects their own academic achievement.
* Online Code of Conduct: <http://www.tdsb.on.ca/communications/code_of_online_conduct/occ.html>
* Respect for Property – no food or drink in the lab

**Provisions for Student Success**

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| **Teacher Support** | **Student Responsibilities** |
| * Extra help by appointment
* School lab time
* derek.oei@tdsb.on.ca
 | * Organize a binder to assist with your studies
	+ Hardware, OS, and Networking
	+ Data and Digital Logic
	+ Programming and Interfacing
	+ Society Connections
	+ Culminating Activity
* Set and focus on realistic goals for each class
* Record daily achievements to set and meet new challenges
* Home study in preparation for each class to support your learning
* Take advantage of extra help and school lab time to assist in meeting goals
* Provide peer help to consolidate your learning and increase confidence
* Ask questions and look for answers
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#### **Program Planning Considerations**

Some students in this course may have special needs. If the student has any challenges such as hearing, visual, and learning disorders, or anything else which could affect his or her grades, the student must see the teacher by the end of the first week of classes to discuss accommodations. Private appointments can be arranged to discuss individual needs.

**Incorporation of Board and Ministry Policies**This course is aligned with ministry and board policies as well as initiatives for environmental education, equity and inclusive education, financial literacy education, career education, cooperative education and health and safety. Policies are incorporated in the course through authentic and higher order thinking assignments.