TEJ 4M

Computer Engineering Technology, Grade 12

Teacher	Mr. Roller gordon.roller@ocdsb.ca Room 266, Computer/Engineering Lab
Required Materials	Binder, lined paper, pen / pencil, **laptop*** *** Recommended**
Course Enhancement Fee	**No Fee** (but materials for student projects may need to be purchased depending on project selection and can be costly)

Course Profile

This course extends students' understanding of computer systems and computer interfacing with external devices. Students will develop an understanding of internal buses, storage devices, electronic circuits, control systems, and network addressing/routing. They will learn to build computer systems and connection media to specific requirements, using appropriate procedures, tools and equipment. The student will learn to maintain and troubleshoot computer hardware and software. They will demonstrate an understanding of programming concepts, and create programs that interact with external devices. Students will examine related environmental and societal issues, and will explore postsecondary pathways leading to careers in computer technology.

Prerequisite: Introduction to Computer Engineering, Grade 11, University/College Preparation. Also note that you **must** be enrolled in Manufacturing Engineering and/or Computer Engineering for consideration to the school's First Robotics team.

Course Outline

This is a project course. Students will work individually or in pairs to create a useful hardware product for a client. The teacher will act as the manager and students will be required to document their product requirements, work schedule, as well as their progress. Students will learn about product design cycles, part procurement, schematic capture, electronics, software/hardware interfacing, systematic debugging strategies and how to record results within a beta testing matrix. They will capture their final product design in a hardware design document.

Course Evaluation

Course evaluation is divided into 70% term work and 30% final summative task. Details of how the 70% term mark is derived are included below. For explanations of the Ministry expectations, please follow this link:

http://www.edu.gov.on.ca/eng/curriculum/secondary/2009teched1112curr.pdf

Tasks	Ministry Expectations														
	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	C1	C2	D1	D2	D3
Ergonomics/Security/Careers Research Presentation													✔	✔	✔
History of the Internet Quiz											✔	✔			
Product Life Cycle Assignment															✔
Addressing the Curriculum Assignment											✔	✔			
Hardware Requirement Specification Document	✔	✔	✔	✔	✔										
Preliminary Design Document						✔	✔	✔	✔	✔					
Journals						✔	✔	✔	✔	✔					
Alpha Test Analysis						✔	✔	✔	✔	✔					
Beta Demo and Testing Matrix						✔	✔	✔	✔	✔					
Final Prototype Curriculum Expectations	✔	✔	✔	✔	✔										

When assigning new work, the evaluation rubric is provided at that time. Google Classroom is used extensively to assign and track various assignments.