


Earl of March Secondary School

Course Outline

	COURSE TITLE:	TECHNOLOGICAL DESIGN	CODE:	TDJ3M
	SUBJECT AREA:	TECH	RESOURCES:	Google Classroom
	TEACHER NAME:	Mr. Heidt, Mr. Martin	DATE:	Sept. 2019
	PREREQUISITE:	None (Open)	Fee for Course Enhancement:	\$25.00 + safety glasses (\$5.00) - can bring own

COURSE DESCRIPTION:

This course provides students with opportunities to apply the principles of technological design to challenges in communications, manufacturing, electronics, transportation, architecture, industrial and consumer products, health and safety equipment, and environmental services. Students will identify user needs, estimate labour and material costs, analyze material characteristics, and illustrate design solutions, using traditional and computer-based methods. They will also acquire the basic design skills required for post-secondary studies in engineering manufacturing, architecture, and construction. Focus will support robotics and the FIRST robotics program here at the Earl of March.

COURSE DESTINATION: Preparation for related courses such as: MANUFACTURING, COMPUTERS, and TECHNOLOGICAL DESIGN as well as FIRST Robotics Club and Electric Vehicle (EV) Club membership.

COURSE UNITS:

Unit:	Description:	Length:	Assessment Strategies:
1	Safety & Organization - Floor Plan & Outline	1 week	Assignments, peer assessment
2	Design Processes & Planning - CardStuff	1 week	Group research, & peer assessment
3	Areas of Design - 3D CAD, Graphic, Architecture	5 weeks	Assignments, practical activities, quizzes
4	Tools, Equipment & Processes - Woodworking	5 weeks	Assignments, practical activities, presentation
5	Structural & Mechanical Analysis - Trebuchet	3 weeks	Assignments, practical activity, demonstration
6	System Design and Integration - Race Car Theme	3 weeks	Assignments, practical activity, demonstration
7	Presentation Portfolio	1 week	Assignment, presentation

OVERALL EXPECTATIONS: By the end of the course students will...

- A1. demonstrate an understanding of factors and relationships that affect technological design and the design process;
- A2. describe appropriate strategies, techniques, and tools for researching, organizing, planning, and managing design projects and related activities, with an emphasis on financial, human, and material resources;
- A3. demonstrate an understanding of drafting standards, conventions, and guidelines for various types of drawings used to represent designs;
- A4. demonstrate an understanding of a variety of tools, materials, equipment, and processes used to build, test, and evaluate models and prototypes;
- A5. use appropriate terminology and communication methods to document, report, and present progress and results.
- B1. use appropriate strategies and tools to research and manage design projects and related activities;
- B2. apply appropriate methods for generating and graphically representing design ideas and solutions;
- B3. create and test models and/or prototypes, using a variety of techniques, tools, and materials;
- B4. use a variety of formats and tools to create and present reports summarizing the design process and to reflect on decisions made during the process.
- C1. demonstrate an understanding of environmentally responsible design practices, and apply them in the technological design process and related activities;
- C2. describe the relationship between society and technological development.
- D1. describe and apply health, safety, and environmental practices related to technological design;
- D2. identify career opportunities in fields related to technological design, and describe the training and education required for these careers.

EVALUATION OF STUDENT ACHIEVEMENT

Student achievement is measured relative to curriculum expectations available at the link below:

<http://www.edu.gov.on.ca/eng/curriculum/secondary/2009teched1112curr.pdf> (pg 328-333)

Term Work: 70% (Knowledge/Understanding, Thinking/Inquiry, Communication, Application)

Culminating Activities: 30% Final practical project

Learning Skills: including: Responsibility, Organization, Independent Work, Collaboration, Initiative, and Self-Regulation are evaluated on each Report Card as: **E** (excellent); **G** (good); **S** (satisfactory); or **N** (needs improvement).

ASSESSMENT OF ACHIEVEMENT BY COURSE ACTIVITY

Tasks	Ministry Expectations												
	A1	A2	A3	A4	A5	B1	B2	B3	B4	C1	C2	D1	D2
Safety Floor Plan			✓				✓						
Card - Product Design	✓	✓			✓					✓			
Areas of Design Modules			✓	✓			✓				✓		✓
Tools & Processes - Table				✓		✓	✓	✓		✓		✓	
Trebuchet - Build & Test	✓	✓			✓	✓		✓	✓	✓		✓	
System Design - Car	✓	✓			✓	✓		✓	✓	✓		✓	
Portfolio Presentation			✓	✓			✓				✓		✓

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

Marks recording will be done in MaMa - the School Board provided marks recording app.

CLASSROOM EXPECTATIONS

- Come to class on time and be prepared and willing to actively participate in every lesson.
- Ask the teacher for extra help if needed and treat others with respect and courtesy.
- Bring a 3-ring binder or equivalent with paper, pen, pencil, ruler, calculator, an available laptop is recommended.
- Distractions such as phones or MP3 players not to be used in class and internet use not to be abused.
- Take the initiative, be a team player, co-operative with peers, complete homework, and make your best effort.
- A focus on student project-driven teams, learning and innovating to solve challenging problems, come up with working solutions, gaining new knowledge, skills, experiences, and understanding of this course field area.

Best way to contact, is through e-mail: thomas.heidt@ocdsb.ca , craig.martin@ocdsb.ca

Student's Signature

Parent's Signature

Student's Name Printed

Parent's Name Printed