WESTERN TECHNICAL - COMMERCIAL SCHOOL
COURSE OUTLINE

COURSE TITLE:	Technological Design	**CODE:**	TDJ3/4M1
SUBJECT AREA:	Tech	**RESOURCES:**	www.mfranzen.ca
TEACHER NAME:	Mr. Franzen	**DATE:**	Sept. 2022
PREREQUISITE:	None, Recommend TDJ2OR	**COURSE COST MATERIAL FEE:**	None

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 FIRST robotics and the Robo program here at Western.

COURSE DESTINATION: MANUFACTURING, CONSTRUCTION, PROGRAMMING, COMPUTERS, ENGINEERING, TRANSPORTATION AND ROBOTICS

COURSE UNITS:

Unit	Description	Length	Evaluation Strategies
1	Safety & Careers - intro, organization, safety, journals, project ideas, and career pathways	3 Weeks	Research, poster, assignments, journal, peer fb, presentation
2	Engineering Communication - technical sketching, ortho-ISO, custom ortho robot design	3 Weeks	Journal, presentation, assignments, peer fb, practical activities
3	Structure and Materials - materials & measurement, joints, frame, and 3D Model	3 Weeks	Journal, assignments, observation, peer fb, practical activities
4	Driven Mechanisms - Gears, gearbox to wheel, drive train, and 1st Function	3 Weeks	Journal, assignments, observation, peer fb, practical activities
5	Functions and Integration - Body base, pneumatics, 2nd and 3rd function	3 Weeks	Journal, assignments, observation, peer fb, practical activities
6	Robot Assembly- Robot build, function supports, drawings and presenting	2 Weeks	Journal, assignments, observation, peer fb, practical activities
7	Learning showcase portfolio report	1 Week	Review, reporting, peer fb

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.

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, and a flash memory stick.
- Distractions such as phones - texting, gaming, etc not to be used in class and internet use, not to be abused.
- Continually expand and report on your unique learning with new related course knowledge, skills, and values.
- Take the initiative, be a team player, be co-operative with peers, complete homework, and make your best effort.

ATTENDANCE MISSED TESTS AND EVALUATIONS

- Bring a note from parents the day after an absence to explain the absence.
- Be aware that a mark of zero will be assigned to students who miss presentations, tests or assignments without a valid explanation. It is the student's responsibility to make arrangements, ahead of time, for any evaluations that are missed. If a student misses an evaluation for an unforeseen reason such as illness or family emergency, the student must bring a note signed by a parent or guardian and be prepared to write/make-up the evaluation immediately upon return to school.

ACADEMIC INTEGRITY

- Plagiarism and/or copying will result in a mark of ***zero*** for everyone involved. Further action may be taken including suspension from school. Teachers will clearly define and discuss consequences of plagiarism with students at the beginning of each semester.

LATE ASSIGNMENTS

- All assignments must be handed in to the teacher on the due date, before class starts that day. Late mark of 10% will be deducted from assignments handed in past the due date, prior to the cut off date. A mark of zero will be assigned if the assignment is handed-in after the cut-off date.

MISSED EXAMINATIONS

- Students are required to write all scheduled examinations. A student who misses any examination due to illness must present a medical note, stating that the doctor was aware that a medical reason prevented the student from writing the exam.

TEACHING/ASSESSMENT/EVALUATION STRATEGIES

Learning Activities: Demonstrations, presentations, journals, illustrations, tutorials, hands-on activities, computers, digital work, practical projects, videos, design process, 3D spacial awarness, engineering and drawing standards

Culminating Activities: Technical report, journal entries, project reviews, related images, summaries, and conclusion

EVALUATION OF STUDENT ACHIEVEMENT

Student achievement is measured relative to curriculum expectations across four weighted Achievement Categories (Knowledge/Understanding, Thinking/Inquiry, Communication, and Applications).

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

Culminating Activities: 30% Final projects and learning showcase portfolio

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).

WESTERN TECHNICAL-COMMERCIAL SCHOOL
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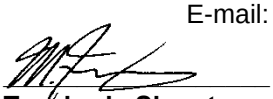
For online access to class journal, content, student marks and resouces: www.mfranzen.ca,
E-mail: Michael.Franzen@tdsb.on.ca, Extra help is avliable in the mornings before class



Teacher's Signature	**Student's Signature**	**Parent's Signature**
Mr. Franzen		
Teacher's Name printed	Student's Name Printed	Parent's Name Printed