Course Information Sheet
Technological Education: TDJ 3M

This course examines how technological design is influenced by human, environmental, financial, and material requirements and resources. Students will research, design, build, and assess solutions that meet specific human needs, using working drawings and other communication methods to present their design ideas. They will develop an awareness of environmental, societal, and cultural issues related to technological design, and will explore career opportunities in the field, as well as the college and/or university program requirements for them.

TDJ 3M focuses on these expectations from the Ministry of Education's curriculum:

TECHNOLOGICAL DESIGN FUNDAMENTALS

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.

TECHNOLOGICAL DESIGN SKILLS

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.

TECHNOLOGY, THE ENVIRONMENT, AND SOCIETY

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.

PROFESSIONAL PRACTICE AND CAREER OPPORTUNITIES

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.

Your final mark will be calculated based on the Ministry of Education's Achievement Chart for this course as follows: Knowledge/Understanding: 20%; Thinking: 20%; Communication: 20%; Application: 40%.

70% of the final mark will be based on work completed throughout the course. 30% will be based on the final evaluation.

Course: Technological Design, TDJ3M **Instructor:** K. Edwards

1. **Course Introduction**
   - Class Routines and Expectations
   - Careers and Opportunities Relating to Technological Design
2. **Drafting Methods and Techniques**
   - Freehand Sketching
   - Drafting Fundamentals: Manual Drafting & Computer Aided Design and Drafting (CADD)
   - Multi-view Orthographic and 3D Modelling of Detail Drawings and Assembly Working Drawings
   - Dimensioning
3. **Graphic Design**
   - Graphic Design Layout
   - Promotional Materials: designing, drawing & cutting vinyl decals, sign making
4. **Consumer Product Engineering**
   - Design Process (S.P.I.C.E.), Work Orders
   - Product Design, Prototype Construction, 3D Printing and Testing
5. **Materials & Cost Estimating**
   - Evaluating Material Properties
   - Calculating Costs for Designs
6. **Architectural Drafting and Design**
   - Design & Drafting: Independent designed Site Plans, Floor Plans and Elevations

Assessment and Evaluation of Student Performance:

Assessment is a systematic process of collecting information or evidence about student learning. It may involve the use of checklists, rating scales, and rubrics. Strategies may include diagnostic, formative and summative assessments, performance tasks, teacher and student (self and peer) assessment, and individual and group assessment.

Evaluation is the judgment made about the assessments of student learning based on established criteria. Final evaluations reflect the teacher's informed professional judgment of each student's most consistent level of performance in each category of the Achievement Chart.

Due Dates: Students are expected to participate in their learning through assessment and evaluation as scheduled. If an extension is needed, then it must be communicated to the teacher by the student. Difficulty with meeting this expectation will be reflected through Learning Skills.

Missed Evaluations: Every reasonable effort will be made to evaluate student learning fairly following participation in learning activities and assessments. Students should arrange for early evaluations if they expect to be absent (i.e. field trip, extracurricular activities). If no evidence is available for evaluation then a mark of "zero" may be given. Circumstances will be considered on an individual basis.

Additional Information: While attendance is not evaluated with a mark or grade it is critical to success in this course. Completion of all assigned work is essential for the expectations of the course to be met. If a student misses a class it is his/her responsibility to find out what homework / assignments have been given during the absence and to catch up on that work. If extra time is required, students should arrange with the teacher to use the classroom facilities at lunch, before school or after school. Equipment is available to sign-out and software is available for download so students can complete work at home.