



Grade 11 Technological Design: Robotics and Control System Design TDR3M

Inspired Education.
Inspiring Students.

Teacher: **Teacher Name**

Prerequisite Course: None

Description and Overall Expectations: 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. **This course has an emphasis on Robotics and Control System Design.**

Technological Design Fundamentals: demonstrate an understanding of factors and relationships that affect technological design and the design process; 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; demonstrate an understanding of drafting standards, conventions, and guidelines for various types of drawings used to represent designs; demonstrate an understanding of a variety of tools, materials, equipment, and processes used to build, test, and evaluate models and prototypes; use appropriate terminology and communication methods to document, report, and present progress and results.

Technological Design Skills: use appropriate strategies and tools to research and manage design projects and related activities; apply appropriate methods for generating and graphically representing design ideas and solutions; create and test models and/or prototypes, using a variety of techniques, tools, and materials; 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: demonstrate an understanding of environmentally responsible design practices, and apply them in the technological design process and related activities; describe the relationship between society and technological development.

Professional Practice and Career Opportunities: describe and apply health, safety, and environmental practices related to technological design; identify career opportunities in fields related to technological design, and describe the training and education required for these careers.

Course Resources: [Key resource\(s\) along with supplementary resources / digital tools and sites / passwords; include replacement cost for resources if lost/damaged.](#)

Catholic Graduate Expectations: Our goal for all students is to experience an education based on our Catholic Graduate Expectations. (<http://www.iceont.ca>) We work in community to develop graduates that are:

- Discerning Believers Formed in the Catholic Faith Community
- Effective Communicators
- Reflective and Creative Thinkers
- Self-Directed, Responsible, Life-Long Learners
- Collaborative Contributors
- Caring Family Members
- Responsible Citizens

Assessment, Evaluation and Reporting: The primary purpose of assessment and evaluation is to improve student learning. Students will understand what is expected of them, using learning goals, and success criteria, based on the overall expectations. Feedback (self, peer, teacher) supports learning, and plays a critical role in academic achievement and success.

The development of learning skills and work habits is a key indicator of future success. The following learning skills and work habits will be developed, assessed, and reported during this course:

1. Responsibility fulfills responsibilities and commitments (*e.g. accepts and acts on feedback*)
2. Organization manages time to complete tasks and achieve goals (*e.g. meets goals, on time*)
3. Independent work uses class time appropriately to complete tasks (*e.g. monitors own learning*)
4. Collaboration works with others, promotes critical thinking (*e.g. provides feedback to peers*)
5. Initiative demonstrates curiosity and an interest in learning (*e.g. sets high goals*)
6. Self-Regulation sets goals, monitors progress towards achieving goals (*e.g. sets, reflects goals*)

Group work supports collaboration, an important 21st century skill. This will be assessed only as a learning skill. Homework may also be assessed as a learning skill. Evaluation completed in class will be based only on individual student work. Regular attendance is important to support group work, various forms of feedback, and to allow students to demonstrate evidence of their learning. Students are responsible for providing evidence of their own learning (with references where required), in class, within given timelines. Next steps in response to academic integrity issues, such as lack of work completion, plagiarism, or other forms of cheating, range from providing alternate opportunities, to a deduction of marks.

The achievement chart identifies four levels, based on achievement of the overall expectations:

Level 1	achievement falls below the provincial standard	(50-59%)
Level 2	achievement approaches the provincial standard	(60-69%)
Level 3	achievement is at the provincial standard	(70-79%)
Level 4	achievement surpasses the provincial standard	(80-100%)

The report card grade will be based on evidence of student performance, including observations, conversations and student products. Consideration will be given to more recent evidence (skill development) and the most consistent level of achievement.

Mark Breakdown:

Term Work (70%) will include a variety of assessment tasks designed to demonstrate students' development in their knowledge and understanding, thinking and inquiry, communication and application, of all overall expectations.

Summative evaluation (30%) takes place towards the end of the semester, is completed in class, and provides the final opportunity for students to demonstrate what they know, and the skills they have learned, based on the overall expectations. In Technological Design: Robotics and Control System Design TDR3M, the summative evaluation will consist of a rich summative assessment task (30%).

Awarding of Course Credit: Students who demonstrate evidence of achievement of overall expectations, **and** earn a mark of 50% or greater, will earn one credit for the course with the following exception:

Students who do not complete their summative evaluation (exam and/or end of year summative task) will not earn their credit regardless of their mark.

Student and Parent/Guardian Acknowledgement

We have read the above course outline and are aware of the student responsibilities to attend class on a regular basis and to provide evidence of learning within the established timelines.

Student's Name (print): _____ Student's Signature: _____

Parent/Guardian Name (print): _____ Parent/Guardian Signature: _____