Westmount High School
Established in 1873
A College Board Advanced Placement School

CollegeBoard inspiring minds

STANDARDS & PROCEDURES

Department or Subject:	Robotics Secondary 3

Term 1 (20%)		
Competencies Targeted	***Evaluation Methods***	***General Timeline***
Competency 1: Develop the essential knowledge of engineering principals in robotics applications; to understand technical objects, to analyze technological systems and create solutions to complex technological challenges. **Competency 2 (Practical)** Demonstrate the engineering skills required to design, manufacture and program technical objects, mechanisms, and robotic systems; and apply those solutions to real world technological problems.	Evaluations may include some **or** most of the following: **Participation**: includes personal involvement with all aspects of the classes, behaviour, verbal responses, and completion of all in-class activities. **Robotics Portfolio:** students are expected to complete all in-class worksheets and assignments and organize them in their binders (portfolio) to be evaluated at the end of each term. **Computer and Robotics Work**: students are expected to use the computer and robotics technology safely and responsibly. **Tool Use, Machines and Safety Protocols**: students are expected to use all tools and machines properly and to exhibit behavior that reflects the established safety protocols in the robotics lab environment. **Homework**: not all work will be done or completed in class. It is expected that you do some work at home and meet the due date(s) required. **Presentations or Projects**: varied **Group Presentations/Assignments:** varied	Assessments & evaluations are assigned and compiled throughout the term. There are no mid-term or final exams. There will be an end of year robotics portfolio evaluation.
Communication to Students and Parents	***Other Pertinent Information [Topics Examined]***	
Teachers may communicate with parents: • Google Classroom • Agenda notes • Report cards • Emails • Phone Calls	• Safety Protocols in Robotic Lab Settings • Algorithmic Thinking • Critical Thinking and Problem Solving • Principals of Design Thinking • Engineering Design Process • Technical Objects • Solution-Based Collaborative Thinking • FIRST Philosophy • 3D Design and Printing Models with TinkerCad • FIRST Tech Challenge Competition Kick-Off (Sept. 10th, 2022)	

<table>
<tr><th colspan="3">Term 2 (20%)</th></tr>
<tr><th>Competencies Targeted</th><th>Evaluation Methods</th><th>General Timeline</th></tr>
<tr><td>Competency 1: Develop the essential knowledge of engineering principals in robotics applications; to understand technical objects, to analyze technological systems and create solutions to complex technological challenges.

Competency 2 (Practical) Demonstrate the engineering skills required to design, manufacture and program technical objects, mechanisms, and robotic systems; and apply those solutions to real world technological problems.</td><td>Evaluations may include some or most of the following:

Participation: includes personal involvement with all aspects of the classes, behaviour, verbal responses, and completion of all in-class activities.
Robotics Portfolio: students are expected to complete all in-class worksheets and assignments and organize them in their binders (portfolio) to be evaluated at the end of each term.
Computer and Robotics Work: students are expected to use the computer and robotics technology safely and responsibly.
Tool Use, Machines and Safety Protocols: students are expected to use all tools and machines properly and to exhibit behavior that reflects the established safety protocols in the robotics lab environment.
Homework: not all work will be done or completed in class. It is expected that you do some work at home and meet the due date(s) required.
Presentations or Projects: varied
Group Presentations/Assignments: varied</td><td>Assessments & evaluations are assigned and compiled throughout the term. There are no mid-term or final exams. There will be an end of year robotics portfolio evaluation.</td></tr>
<tr><td>Communication to Students and Parents</td><td colspan="2">Other Pertinent Information [Topics Examined]</td></tr>
<tr><td>Teachers may communicate with parents:
Google Classroom
Agenda notes
Report cards
Emails
Phone Calls</td><td colspan="2">Smart Cities and Nations
Artificial Intelligence
Programming Principles:
Conditional Statements
Design and Program Flow
Graphical Interface
Functions
Logic Statements
Loops and Variables
Metrics
3D Design and Printing Models with TinkerCad</td></tr>
</table>

Term 3 (60%)

Competencies Targeted	***Evaluation Methods***	***General Timeline***
Competency 1: Develop the essential knowledge of engineering principals in robotics applications; to understand technical objects, to analyze technological systems and create solutions to complex technological challenges. **Competency 2 (Practical)** Demonstrate the engineering skills required to design, manufacture and program technical objects, mechanisms, and robotic systems; and apply those solutions to real world technological problems.	Evaluations may include some **or** most of the following: **Participation**: includes personal involvement with all aspects of the classes, behaviour, verbal responses, and completion of all in-class activities. **Robotics Portfolio:** students are expected to complete all in-class worksheets and assignments and organize them in their binders (portfolio) to be evaluated at the end of each term. **Computer and Robotics Work**: students are expected to use the computer and robotics technology safely and responsibly. **Tool Use, Machines and Safety Protocols**: students are expected to use all tools and machines properly and to exhibit behavior that reflects the established safety protocols in the robotics lab environment. **Homework**: not all work will be done or completed in class. It is expected that you do some work at home and meet the due date(s) required. **Presentations or Projects**: varied **Group Presentations/Assignments:** varied	Assessments & evaluations are assigned and compiled throughout the term. There are no mid-term or final exams. There will be an end of year robotics portfolio evaluation.
Communication to Students and Parents	***End of Year Evaluation***	***Other Pertinent Information [Topics Examined]***

Teachers may communicate with parents:
• Google Classroom
• Agenda notes
• Report cards
• Emails
• Phone Calls
	No formal end of year evaluation. However, there will be an end of year assessment for the students robotics portfolio	• Robot Systems & Construction
		• Motion Transmission Systems
		• Motion Transformation Systems
		• Electrical Systems & Circuits
		• FIRST Robotics Competition
		• 3D Design and Printing Models with OnShape
		  ▪ CAD FTC Bots
		  ▪ CAD FRC BOT
		• FRC Kick-Off (January 7th, 2023)

Additional Information / Specifications (e.g.,materials required):

1” Binder Loose-leaf and graph paper Pencil Case (pencils, pens, etc) Compass Set Ruler