Earl of March Secondary School
Mathematics for College Technology Grade 12, College Preparation (MCT4C)
Revised: March 2021

Course Description
This course enables students to extend their knowledge of functions. Students will investigate and apply properties of polynomial, exponential, and trigonometric functions; continue to represent functions numerically, graphically, and algebraically; develop facility in simplifying expressions and solving equations; and solve problems that address applications of algebra, trigonometry, vectors, and geometry. Students will reason mathematically and communicate their thinking as they solve multi-step problems. This course prepares students for a variety of college technology programs.

Prerequisite: Functions and Applications, Grade 11, University/College Preparation, or Functions, Grade 11, University Preparation

Curriculum: The major strands and the overall expectations for the course are summarized below.
To learn more about the curriculum follow this link.
By the end of the course students will. . .

A. Exponential and Functions
- solve problems involving exponential equations graphically, including problems arising from real-world applications;
- solve problems involving exponential equations algebraically using common bases and logarithms, including problems arising from real-world applications.

B. Polynomial Functions
- recognize and evaluate polynomial functions, describe key features of their graphs, and solve problems using graphs of polynomial functions;
- make connections between the numeric, graphical, and algebraic representations of polynomial functions;
- solve polynomial equations by factoring, make connections between functions and formulas, and solve problems involving polynomial expressions arising from a variety of applications.

C. Trigonometric Functions
- determine the values of the trigonometric ratios for angles less than 360[degree symbol], and solve problems using the primary trigonometric ratios, the sine law, and the cosine law;
- make connections between the numeric, graphical, and algebraic representations of sinusoidal functions;
- demonstrate an understanding that sinusoidal functions can be used to model some periodic phenomena, and solve related problems, including those arising from real-world applications.

D. Applications of Geometry
- represent vectors, add and subtract vectors, and solve problems using vector models, including those arising from real-world applications;
- solve problems involving two-dimensional shapes and three-dimensional figures and arising from real-world applications;
- determine circle properties and solve related problems, including those arising from real-world applications.

Earl of March Homework Policy - Helping Learning "Stick"
Learning requires a sincere commitment to work and study. Choosing to do homework is an essential part of a student's educational development. Homework helps students improve their academic and study skills, and is critical in the reinforcement of ideas and concepts presented in class. Also, homework helps students develop responsibility, independence, perseverance, time management skills and curiosity. The Ontario Curriculum emphasizes that there is a direct relationship between effort and student achievement. Homework will be assigned to students based upon reasonable expectations, and with the understanding that many students are involved in a variety of worthwhile activities outside of the school setting.

Assessment Strategies

A variety of teaching/assessment strategies to address students' needs will be used during this course. Formative assessments will be ongoing throughout the academic year and students will receive descriptive feedback intended to help them improve their learning. The chart below outlines achievement levels with some quality descriptors. Levels will be used when assigning marks in this course.

Level	Descriptors
R: not a passable level of achievement	Insufficient demonstration of understanding
1: much below the provincial standard	Limited understanding, weak, lacking purpose
2: approaching the provincial standard	Some understanding, simplistic, somewhat purposeful
3: the provincial standard	Considerable understanding, solid, standard, purposeful, effective
4: surpassing the provincial standard	Consistent, thorough understanding, in depth, insightful to a purpose, efficient

Evidence of Student Achievement

Students may demonstrate their understanding of the course material in a wide variety of ways. Evidence of student achievement may come from observations, conversations, and students products. Student products may include tests, assignments, performance tasks, and examinations. A balanced combination of a student's Knowledge and Understanding, Thinking, Communication, and Application will be assessed. These 4 categories will not be separately evaluated. Instead, they will be *"considered as interrelated, reflecting the wholeness and interconnectedness of learning." – from the Ontario Ministry of Education curriculum documents.*

Source of Evidence		Description
	Observations	The teacher may record evidence of student achievement observed as students work on investigations in class.
	Conversations	The teacher may record evidence of student achievement elicited during a conversation with a student
P r o d u c t s	Tests	There will be major unit tests.
	Assignments	Students may complete in-class assignments.
	Tasks	Students may demonstrate their creativity, knowledge and understanding of the material through in-class performance tasks.
	Summative Task	Students will show evidence of their learning by performing a task in class that will include many overall expectations of the course.
	Final Examination	There will be a final examination during exam week at the end of the semester.

How Can Parents Help?

First of all, don't panic if you have forgotten your high school math. You can support your children's learning without teaching them. Having a positive attitude towards learning in general and mathematics in particular can go a long way. Consider also that teenagers are often unaware that the pathway to "success" is rarely a straight line; sharing your own personal experiences of frustration and struggle, perseverance and accomplishment may help your child see his or her own experiences in a new way. Thirdly, why not take a look at some of the sites below and see what you think; the internet is full of resources!

1. This Ontario Ministry of Education Student Success page provides links for parents, students, teachers and employers.
2. This PowerPoint presentation is designed for parents of students of all ages. Many ideas, questions and links are provided although not all are focussed on secondary education.
3. This link will take you to information from York University on Critical Thinking Skills.

If you have any questions, please feel free to contact your child's teacher.