



COURSE OVERVIEW 2019-2020

Course Name:	Functions and Applications Grade 11	Course Code:	MCF 3M
Course Type:	Grade 11 University / College Preparation	Credit Value:	1.0
Teachers(s):	Mr. Cowling		

Course Description:

This course introduces basic features of the function by extending students' experiences with quadratic relations. It focuses on quadratic, trigonometric, and exponential functions and their use in modelling real-world situations. Students will represent functions numerically, graphically, and algebraically, simplify expressions; solve equations; and solve problems relating to applications. Students will reason mathematically and communicate their thinking as they solve multi-step problems.

<http://www.edu.gov.on.ca/eng/curriculum/secondary/math1112currb.pdf>

Prerequisite: Principles of Mathematics, Grade 10, Academic, or Foundations of Mathematics, Grade 10, Applied (a minimum mark of 70% strongly recommended)

Course Overall Expectations:

Strand	Overall Expectations
Quadratic Functions	expand and simplify quadratic expressions, solve quadratic equations, and relate the roots of a quadratic equation to the corresponding graph;
	demonstrate an understanding of functions, and make connections between the numeric, graphical, and algebraic representations of quadratic functions;
	solve problems involving quadratic functions, including those arising from real-world applications.
Exponential Functions	simplify and evaluate numerical expressions involving exponents, and make connections between the numeric, graphical, and algebraic representations of exponential functions;
	identify and represent exponential functions, and solve problems involving exponential functions, including those arising from real-world applications;
	demonstrate an understanding of compound interest and annuities, and solve related problems.
Trigonometric Functions	solve problems involving trigonometry in acute triangles using the sine law and the cosine law, including problems arising from real-world applications;
	demonstrate an understanding of periodic relationships and the sine function, and make connections between the numeric, graphical, and algebraic representations of sine functions;
	identify and represent sine functions, and solve problems involving sine functions, including those arising from real-world applications.

Assessment and Evaluation Strategies:

The purpose of assessment and evaluation is to improve student learning. Assessment and evaluation is based on the provincial curriculum expectations and the achievement levels outlined in the curriculum document. In order to ensure that assessment and evaluation are valid and reliable, and that they lead to the improvement of student learning, teachers use a variety of strategies throughout the course, including: providing students with feedback about their work (known as assessment for learning), helping to set learning goals and monitor their own progress (known as assessment as learning), and evaluation and reporting of progress in the form of grades and marks (known as assessment of learning).

Unit Overview	Assessment and Evaluation Methods (May include major evaluations)
Introduction to Functions	quizzes, performance tasks, assignments, projects, portfolio, journals, unit tests
Functions Through Quadratics	
Investigating Quadratics	
Quadratic Highs and Lows	
Exponential Functions	
Financial Applications of Exponential Functions	
Acute Triangle Trigonometry	
Trigonometric Functions	
Course Culminating Activity/Independent Study	Course culminating activities by strand - one for each strand
Final Exam	Midterm and Final

Assessment and Evaluation Categories and Weights:

Achievement Chart Categories		Evaluation/Weight of Marks	
Achievement Category	Percentage	Evaluation	Percentage
Knowledge/Understanding	35	Term Evaluation	70
Thinking/Inquiry	15	Final Evaluation	
Communication	15		
Application	35	• Exam	10, 20

Learning Skills and Work Habits Assessment:

The development of learning skills and work habits is an integral part of student learning. These skills are:

- **Responsibility**
- **Organization**
- **Independent Work**
- **Collaboration**
- **Initiative**
- **Self-Regulation**

Learning skills and work habits influence student achievement and are included as a formal part of the assessment and evaluation process. Learning skills and work habits will be assessed through a variety of teacher strategies. (e.g. observation, student /teacher conference, self-reflection, checklists, exit cards, etc.) These important learning skills and work habits will be formally reported on the Provincial Report Card according to the following scale: E- Excellent, G- Good, S- Satisfactory, N- Needs Improvement.

Academic Dishonesty - Cheating and Plagiarism:

Learning tasks that students complete as well as the assignments, tests and exams that students submit for evaluation must be their own work. Cheating and plagiarism is a serious offence that will not be condoned. Academic consequences will result.

Test Policy:

According to the Growing Success Document (2010) a student must fulfill his/her responsibilities and commitments within the learning environment, including completing all types of assessments according to agreed-upon timelines.

It is the math department expectation that all students will write tests on the date set out by the classroom teacher. In the event of an illness, emergency, or other significant situation, an exception can be made, provided sufficient documentation is given to the classroom teacher. Please note that parental approval is not a legitimate reason for missing an evaluation. If an acceptable absence is known prior to the assessment date, alternate arrangements must be made with the classroom teacher in advance.

If this expectation is not met, the evaluation will be completed but may not contribute to the student's course marks.

Late and Missed Assignments - Student Roles and Responsibilities

Students are expected to:

- be responsible for providing evidence of their achievement of the overall expectations within the time frame specified by the teacher, and in a form approved by the teacher;
- understand that there will be consequences for not completing assignments for evaluation and/or for submitting those assignments late;
- use class time productively;
- in extenuating circumstances, request an extension from the teacher before the due date.

Mark deductions for late and missed assignments may apply to major assignments only.

References: ***TVDSB Assessment & Evaluation Policy, September 2011; Growing Success - Assessment and Evaluation, and Reporting in Ontario Schools, 2010. Student Planner and School Web site***