

**St. Clair Catholic District School Board**  
**Student Information Sheet/ Outline of Course Study**

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School	Ursuline College Chatham
Department	Mathematics
Course Title	Principles of Mathematics: Functions and Applications
Grade and Level	Grade 11, University/College Preparation (MCF3M0)
Credit	One full
Prerequisite	Grade 10 Academic or Grade 10 Applied <b>with very high achievement</b>
Textbook	Functions Applications (McGraw-Hill) and OAME sources
Department Head	Mrs. M. Taylor-Joyes
Ministry Document	Mathematics Grade 11 (revised 2006)
Date	September 2011/February 2012

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**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 modeling 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.

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**How this course supports the Ontario Catholic Graduate Expectations:**

The following expectations from the Ontario Catholic Graduate Expectations will be stressed throughout the course: The graduate is expected to be: - An effective communicator who reads, understands and uses written materials effectively; - A reflective, creative and holistic thinker who thinks reflectively and creatively to evaluate situations and solve problems ; - A self-directed , responsible, lifelong learner who sets appropriate goals and priorities in school , work and personal life; - A collaborative contributor who works effectively as an independent team member; - A responsible citizen who accepts accountability for one's one actions.

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**How this course supports the competencies of Choices Into Action:**

Career exploration activities through classroom experience (page 19, Choices into Action)

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**1) Expectations regarding Learning Skills**

It is expected that students will demonstrate the following:

(this is not intended to be an exhaustive list)

- Independent learning ability
- Team work ability
- Organizational skills on a daily basis
- Strong work habits during class time
- Completed homework and assignments
- Initiative in all areas of the course

Learning skills will be assessed according to criteria, which have been clearly communicated to students and will be reported separately from student achievement of the curriculum expectations. The student's demonstrated learning skills in each course will be evaluated using the four-point scale, E- Excellent, G- Good, S- Satisfactory, N – Needs Improvement.

## 2) Overall expectations for student learning

Through this course, the student will be expected to demonstrate knowledge, skills and values related to the following strands:

<p><b>Strand 1: Quadratic Functions</b></p> <ul style="list-style-type: none"> <li>Expand and simplify quadratic expressions, solve quadratic equations, and relate the roots of a quadratic equation to the corresponding graph</li> <li>Demonstrate an understanding of functions, and make connections between the numeric, graphical and algebraic representations of quadratic functions</li> <li>Solving problems involving quadratic functions and equations arising from real-world applications</li> </ul>	<p><b>Strand 3: Trigonometric Functions</b></p> <ul style="list-style-type: none"> <li>Solving problems involving the sine and cosine laws in acute triangles, including real-world problems</li> <li>Demonstrate an understanding of periodic relations and the sine and cosine function, and make connections between the numeric, graphical and algebraic forms of the sine and cosine functions</li> <li>Identify and represent sine functions and solving problems involving models of sinusoidal functions</li> </ul>
<p><b>Strand 2: Exponential Functions</b></p> <ul style="list-style-type: none"> <li>Simplify and evaluate numerical expressions involving exponents, and make connections between the numeric, graphical and algebraic relations of exponential functions</li> <li>Identify and represent exponential functions and solve real-world problems involving exponential functions</li> <li>Demonstrate an understanding of compound interest and annuities and solve related problems</li> </ul>	

## 3) Individual Education Plan

Whenever accommodations are made to address student learning needs, or alternative or modified expectations are identified for a student, these accommodations, modifications, or alternative expectations will be outlined in an IEP and will be communicated to parents.

## 4) Course breakdown & assessment and evaluation strategies

Unit title/Description	Suggested Timing
Quadratic Functions	40 periods
Exponential Functions	25 periods
Trigonometric Functions	20 periods

## 5) Teaching/Learning Strategies

Instruction in this course will be evaluated according to the following breakdowns:  
Group work, pairs activities, individual work, computers and graphical calculators.

## 6) Assessment and Evaluation

Student achievement of the learning expectations will be evaluated according to the following breakdowns:

Categories of Knowledge, Skills and Values	Weighting (%)	
	Term Evaluation(100%) Evaluation	Final
Knowledge & Understanding	45	Culminating
Thinking, Inquiry, Problem Solving	20	Assessment
Communication	15	And
Applications	20	Final Exam
BREAKDOWN OF FINAL MARK	70% of term mark	30%

## 7) School, department and classroom policies

- a) See student handbook for school rules
- b) **HOMEWORK** will be assigned almost every day. Depending on the topic, the time required to complete the assignment will vary, but at the grade eleven level the homework should require 30-45 minutes per night. To ensure success, any suggested homework assignments are to be completed for the beginning of the next class. The completion of assignments, neat and orderly notes, and routine correction of problems are essential for success.
- c) **REGULAR** and **PROMPT** attendance is required in order to be successful. If a student is absent it is their responsibility to make up for missed work. Notes should be copied from a reliable student, and homework exercises attempted. Extra help is available and can be arranged with the teacher.
- d) **TESTS AND ASSIGNMENTS MISSED OR LATE.** The reasons for the absence or late will be taken into account, but a mark of zero can be assigned to the student for circumstances that seem to warrant such a mark. Assignments not submitted within the stated time frame may be cause for the student's overall grade to fall to a lower level. Every effort should be made to write the test at the scheduled time period. Below are some test and assignment procedures:
  - i) If you know that you will be away for a scheduled test and/or assignment due date for some legitimate reason, inform your teacher and make alternate arrangements before you leave.
  - ii) If a test is missed due to a legitimate or sudden absence, it will be written at a time determined by the teacher after consultation with the student. The usual date for writing the test would be the first day back after the absence. A note signed by the parent/guardian must support such legitimate absences.

- iii) As a general rule, there will be no make-up tests or assignments. If special circumstances warrant, make-up tests or assignments may be provided to students who have demonstrated that earlier difficulties have been corrected.

To the student, Parent(s) or Guardian(s):

We have read and understand this Students Information Sheet/Outline of Course of Study

Course Code: MCF3M0 (Grade 11 Functions and Applications)

Student: \_\_\_\_\_

Date: \_\_\_\_\_

Parent/Guardian: \_\_\_\_\_

Date:

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