

Enriched Functions MCR3U3

<p>Course Description:</p> <p>This course introduces the mathematical concept of the function by extending students' experiences with linear and quadratic relations. Students will investigate properties of discrete and continuous functions, including trigonometric and exponential functions; represent functions numerically, algebraically, and graphically; solve problems involving applications of functions; investigate inverse functions; and develop facility in determining equivalent algebraic expressions. Students will reason mathematically and communicate their thinking as they solve multi-step problems.</p>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px 5px;">Level:</td> <td style="padding: 2px 5px;">University</td> </tr> <tr> <td style="padding: 2px 5px;">Credit Value:</td> <td style="padding: 2px 5px;">1.0</td> </tr> <tr> <td style="padding: 2px 5px;">Pre-requisite:</td> <td style="padding: 2px 5px;">MPM2D3</td> </tr> <tr> <td style="padding: 2px 5px;">Department:</td> <td style="padding: 2px 5px;">Mathematics</td> </tr> <tr> <td colspan="2" style="border-top: 1px solid black; padding: 2px 5px;">Course Fees: None</td> </tr> </table>	Level:	University	Credit Value:	1.0	Pre-requisite:	MPM2D3	Department:	Mathematics	Course Fees: None	
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- Textbooks & Resources:**
- Growing Success: Assessment, Evaluation and Reporting in Ontario Schools
 - The Ontario Curriculum Document, Grades 11 and 12: Mathematics, 2007 (revised)
 - Nelson Functions (Replacement Cost: \$87.00)

Course Evaluation: Student Evaluation consists of three components...

1) Learning Skills & Work Habits:

<p>Students are evaluated on 6 Learning Skills & Work Habits. They are:</p> <ul style="list-style-type: none"> <li style="width: 50%;">• Responsibility <li style="width: 50%;">• Collaboration <li style="width: 50%;">• Organization <li style="width: 50%;">• Initiative <li style="width: 50%;">• Independent Work <li style="width: 50%;">• Self-Regulation 	<p>These six attributes are evaluated on a scale of Excellent (E), Good (G), Satisfactory (S) & Needs Improvement (N) and reported on the report card. They are not included in the course mark, unless specified in the curriculum expectations.</p>
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2) Term Mark (Assessment of Learning):

<p>Student performance standards for knowledge and skills are described in the curriculum Achievement Chart. The curriculum is assessed in four categories:</p> <ul style="list-style-type: none"> • Knowledge and Understanding 30% • Thinking and Inquiry 20% • Communication 20% • Application 30% 	<p>Evaluation of these four categories generates the term mark. The term mark accounts for 70% of the final mark.</p> <p>It is the student's responsibility to submit evidence of learning.</p>
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3) Final Evaluation (Assessment of Learning):

<p>The final evaluation, administered at or towards the end of the course is based on the evidence shown to the right. The final evaluation accounts for 30% of the final mark.</p>	<p>The final evaluation consists of:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px 10px;">Written Exam</td> <td style="text-align: right; padding: 2px 10px;">30 %</td> </tr> </table>	Written Exam	30 %
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Final Mark = 70% Term Mark + 30% Final Evaluation

For a detailed description on Course Evaluation, see "How Did I Get That Mark!" at www.satec.on.ca

Course Conduct Policies: See Student Agenda.

Please retain this page in the front of your notebook for future reference.



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Course Outline:

Unit	Description	Approximate Length	Major Unit Evaluation
Intro to Functions	demonstrate an understanding of functions, their representations, and their inverses, and make connections between the algebraic and graphical representations of functions using transformations.	2 weeks	assignments, tests, quizzes
Equivalent Algebraic Expressions	demonstrate an understanding of equivalence as it relates to simplifying polynomial, radical, and rational expressions.	1.5 weeks	assignments, tests, quizzes
Quadratic Functions	determine the zeros and the maximum or minimum of a quadratic function, and solve problems involving quadratic functions, including problems arising from real-world applications.	2 weeks	assignments, tests, quizzes
Exponential Functions	Evaluate powers with rational exponents, simplify expressions containing exponents, and describe properties of exponential functions represented in a variety of ways; make connections between the numeric, graphical, and algebraic representations of exponential functions; identify and represent exponential functions, and solve problems involving exponential functions, including problems arising from real-world applications.	2 weeks	assignments, tests, quizzes
Trigonometric Ratios	determine the values of the trigonometric ratios for angles less than 360° ; prove simple trigonometric identities; and solve problems using the primary trigonometric ratios, the sine law, and the cosine law.	1.5 weeks	assignments, tests, quizzes
Sinusoidal Functions	demonstrate an understanding of periodic relationships and sinusoidal functions, and make connections between the numeric, graphical, and algebraic representations of sinusoidal functions; identify and represent sinusoidal functions, and solve problems involving sinusoidal functions.	2 weeks	assignments, tests, quizzes
Sequences & Series	demonstrate an understanding of recursive sequences, represent recursive sequences in a variety of ways, and make connections to Pascal's triangle; demonstrate an understanding of the relationships involved in arithmetic and geometric sequences and series, and solve related problems.	2 weeks	assignments, tests, quizzes
Mathematical Induction	Demonstrate an understanding of how to prove certain identities by induction	1 week	assignments, tests, quizzes
Conic Sections	Demonstrate an understanding of the mapping transformation and the properties of geometric conic sections	2 weeks	assignments, tests, quizzes
Financial Applications	Make connections between sequences, series, and financial applications, and solve problems involving compound interest and ordinary annuities.	on-going	project

Note: The order of the units of study may change due to student needs and resources available during the course.

General Information:

Mathematics continually builds on previous lessons. Hence, daily attendance is important. Students are responsible for catching up on missed lessons and work.

It is expected that all students will write tests as a class group. If a student is unable to write the evaluation with the class, then the student must inform the teacher at least two school days in advance of the test so that alternate arrangements can be made.

Students who are absent on the day of the test due to illness or a family emergency must have their parents phone the amth office at 416 396-3365 x20245 on the day of the test explaining why they will be absent. (Doctor's notes will be required from students who miss more than one scheduled test.) Alternate arrangements will be made for these students to write the test.

Students missing their tests or assignment deadlines due to unexplained absences will receive a mark of zero.

For more information on the missed test/assignment policies, please see the agenda.

This course meets Environmental and ICT SHSM requirements.

