

Course Description:

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.

Level: University	Credit Value: 1.0	Program Enhancement Fee:
Pre-requisite: MPM2D	Department: Mathematics	None

Textbooks & Resources:

- Growing Success: Assessment, Evaluation and Reporting in Ontario Schools, 2010
- The Ontario Curriculum, Grades 11 & 12: Mathematics, 2007 (revised)
- Functions 11, Nelson (Replacement Cost: \$85.00)

Course Evaluation: Student Evaluation consists of three components...**1) Learning Skills & Work Habits:**

Students are evaluated on 6 Learning Skills & Work Habits.

They are:

- | | |
|--------------------|-------------------|
| • Responsibility | • Collaboration |
| • Organization | • Initiative |
| • Independent Work | • Self-Regulation |

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.

2) Term Mark (Assessment of Learning):

Student performance standards for knowledge and skills are described in the curriculum Achievement Chart. The curriculum is assessed in four categories:

- | | |
|-------------------------------|-----|
| • Knowledge and Understanding | 25% |
| • Thinking and Inquiry | 10% |
| • Communication | 10% |
| • Application | 25% |

Evaluation of these four categories generates the term mark. The term mark accounts for 70% of the final mark.

It is the student's responsibility to submit evidence of learning.

3) Final Evaluation (Assessment of Learning):

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.

The final evaluation consists of (out of 30%):

Examination	30%
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Final Mark = 70% Term Mark + 30% Final Evaluation

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

Course Outline:		Approximate Length	Major Unit Evaluation
Unit	Description		
Characteristics of Functions	<p>1. Demonstrate an understanding of functions, their representations, and their inverses, and make connections between the algebraic and graphical representations of functions using transformations;</p> <p>2. 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;</p> <p>3. Demonstrate an understanding of equivalence as it relates to simplifying polynomial, radical, and rational expressions.</p>	30 days	Unit Test
Exponential Functions	<p>1. Evaluate powers with rational exponents, simplify expressions containing exponents, and describe properties of exponential functions represented in a variety of ways;</p> <p>2. Make connections between the numeric, graphical, and algebraic representations of exponential functions;</p> <p>3. Identify and represent exponential functions, and solve problems involving exponential functions, including problems arising from real-world applications.</p>	15 days	Unit Test
Discrete Functions	<p>1. Demonstrate an understanding of recursive sequences, represent recursive sequences in a variety of ways, and make connections to Pascal's triangle;</p> <p>2. Demonstrate an understanding of the relationships involved in arithmetic and geometric sequences and series, and solve related problems;</p> <p>3. Make connections between sequences, series, and financial applications, and solve problems involving compound interest and ordinary annuities.</p>	25 days	Unit Test
Trigonometric Functions	<p>1. 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;</p> <p>2. Demonstrate an understanding of periodic relationships and sinusoidal functions, and make connections between the numeric, graphical, and algebraic representations of sinusoidal functions;</p> <p>3. Identify and represent sinusoidal functions, and solve problems involving sinusoidal functions, including problems arising from real-world applications.</p>	20 days	Unit Test

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

General Information

Refer to the agenda for Wexford CSA Academic Conduct & Evaluation policies.

How to seek extra help:

- 1) Speak to your subject teacher and book a time to meet (Students & Parents).
- 2) Speak to a Peer Helper
- 3) Use the reliable sources on the Internet.
- 4) Homework Help (Grades 7 – 10): <http://homeworkhelp.ilc.org>
- 5) Math Coach: <http://tdsb.na3.acrobat.com/mathcoach>
- 6) Speak to your Guidance Counsellor (Students & Parents) who can guide you to other sources.

Recommended Websites:

- www.Khanacademy.org
- www.resources.elearningontario.ca
- www.explorelearning.com
- www.math.com
- ca.ixl.com