REDEEMER CHRISTIAN HIGH SCHOOL
Course Syllabus
MCF3M, Functions and Applications
Semester 1, 2017-2018
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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.

INTRODUCTION

Throughout this course, we are going to work through the content from a Christian perspective. We will see that mathematical models and functions can be applied to the world in many situations. This ability to "see" how math reflects the world around us is an important skill for people who live in the modern world where we are surrounded by technologies that are the end product of this "view" of the world. Thus, a fundamental understanding of math is important for citizens of our society. As Christians we need to be aware that the mathematical view of the world is not the only way of interpreting the world around us. We will explore the powers of mathematical modelling and the limits of its applicability. We will also look at the application of math to the finances of investments and examine how this can help us be wise stewards of our money. Ultimately, through the window of mathematical thinking, we will discover how God has built mathematical relations into the fundamental structures of the universe. This understanding will increase our ability to honour Him with all aspects of our lives.

OUTLINE OF COURSE CONTENT

Text: Small et al. *Functions and Applications 11*. Nelson, 2008.

Unit #	Unit Title	Approx. # of Classes
Unit 1	Introduction to the Quadratic Function	14
Unit 2	The Algebra of Quadratic Expressions	10
Unit 3/4	Quadratic Functions and Equations	15
Unit 5	Trigonometry and Acute Triangles	11
Unit 6	Sinusoidal Functions	10
Unit 7	Exponential Functions	11
Unit 8	Solving Financial Problems Involving Exponential Functions	8
	Review and CPT	5

ASSESSMENT of STUDENT LEARNING

*Assessments **for** Learning*	*Assessments **as** Learning*	*Assessments **of** Learning*
Opener questions Quizzes Learning skills observations	Checking Homework Journal entries Peer assessments	Unit Tests Unit Problems Final Exam Summative Performance Task

Assessments of Learning for this course will span the four categories of Knowledge/Understanding, Thinking/Problem Solving, Communication and Application as outlined in the achievement chart for Mathematics.

Grading Summary:

The final grade for this course will be approximately determined as follows:

	CATEGORY	Weighting out of 100
Unit AoLs 70%	Communication	16%
	Knowledge/Understanding	18%
	Thinking/Inquiry	25%
	Application	11%
Final AoLs 30%	Culminating Performance Task	10%
	Exam	20%

The unit evaluations will be approximately determined as follows:

Evaluation Instrument	**Value**	**Approximate Value**	**Learning Category**
Tests	45%	9%	Communication
		15%	Knowledge/Understanding
		14%	Thinking/Problem Solving
		7%	Application
Unit Tasks	25%	7%	Communication
		3%	Knowledge/Understanding
		11%	Thinking/Problem Solving
		4%	Application

STUDENT EXPECTATIONS

Members of this class will treat the classroom, each other and the learning endeavour with respect as is fitting for a Christian. Respect for each other is the acknowledgment that the people around us are valued by God and should be treated with care. Respect for learning is an acknowledgment that God's world is important and is worth caring for and learning about. Respect for the classroom is an acknowledgment that this is God's school and that everything in it is a gift from Him and should not be treated lightly.

Student **Responsibilities**:

1. I will watch my words and speak to all others in the class with respect and encouragement.
2. I will arrive in class on time and prepared to work.
3. I will do my best to not distract others so they can learn.
4. I will do my best to stay caught up in my work but if I fall behind in my work or experience difficulties I will discuss this with the teacher so we can develop a recovery plan together.
5. I will do my best to hand in assignments on time. If I am experiencing difficulty I will talk to the teacher **before it is too late**. I realize that late assignments will have 10% deducted/day for up to 5 days, then the assignment will receive a mark of zero, and I may be assigned to study hall every day until the assignment is turned in according to the RCHS Late Assignments Policy.

Teacher **Responsibilities**:

1. I, the teacher, will watch my words and speak to the students with respect and encouragement.
2. I, the teacher, will arrive on time with the lesson prepared.
3. The teacher will ensure that the success criteria for all assessments of learning are clearly outlined for the students.
4. The teacher will hand back assessments of learning promptly.

If there are **problems** with student or teacher not meeting their responsibilities then there will be a private discussion between the teacher and the students affected to seek a resolution and get things back on track. If the problems keep recurring then consequences may need to be applied according to the RCHS Discipline Policy or advice sought from the administration.