

REDEEMER CHRISTIAN HIGH SCHOOL
 Course Syllabus
MCV4U – Calculus and Vectors
 Semester 2, 2019-2020
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INTRODUCTION

Calculus is the mathematical analysis of changing quantities. As such it differs from many other branches of math that seek to describe the unchanging regularities of the creation. (geometry, trigonometry, algebra)

This course will introduce the students to this new concept both visually and computationally. As students develop their skills they will encounter the many applications of this powerful branch of Mathematics.

This course will also introduce students to the representation of vectors and their operations.

As students develop their skills they will encounter the many applications of these powerful ideas of Mathematics. Students will gain an appreciation for the role that calculus plays as a powerful problem solving tool and the impact it has had on the development of our modern society.

This course is designed for the student who has an intrinsic interest in Mathematics and the ability to work with abstract ideas. Calculus and Vectors are foundational for both the 'hard' (engineering, computer science, biology, chemistry, physics) and 'soft' (sociology, psychology, business) sciences. As such this course is foundational for many post-secondary educational programs.

OUTLINE OF COURSE CONTENT

- Unit 1 - Rates of Change
- Unit 2 - Derivatives
- Unit 3 - Curve Sketching
- Unit 4 - Derivatives of Sinusoidal Functions
- Unit 5 - Exponential and Logarithmic Functions
- Unit 6 - Geometric Vectors
- Unit 7 - Cartesian Vectors
- Unit 8 - Lines and Planes

Text: Calculus and Vectors 12: Study Guide and University Handbook (Knowles et al., McGraw-Hill Ryerson Ltd.) 2008

Assessment of Student Work

<i>Assessments for Learning</i>	<i>Assessments as Learning</i>	<i>Assessments of Learning</i>
Opening questions Quizzes HMWK observations	Checking Homework Journal entries Peer assessments	Unit Tests Assignments Final Exam Opening Question Observations

All assessments of student learning will be based on the achievement categories of communication, knowledge and understanding, thinking, application and the principles of assessment as outlined in *Growing Success* and the Ontario curriculum.

Calculation of the Final Grade:

Evaluation Instruments	Value	Approximate Value	Learning Categories
Tests (P)	45%	9%	Communication
		17%	Knowledge
		13%	Thinking/Problem Solving
		6%	Application
Assignments (P)	20%	4%	Communication
		4%	Knowledge
		8%	Thinking/Problem Solving
		4%	Application
Opening Questions Observations (O,C)	5%		
Final Exam	30%		

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 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.