



A. Y. Jackson S. S.  
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## MCV4U1 Calculus and Vectors Grade 12, University

### General Course Information

Prerequisite:	MHF4U
Department:	Mathematics
Extra Help:	By appointment Before school, lunch and after school
Textbook and Replacement Cost:	Calculus and Vectors (Nelson), \$90.00
Material Required:	Binder, pen, pencil, ruler, graph paper and scientific calculator
Course Fee:	None

### Course Description

This course builds on students' previous experience with functions and their developing understanding of rates of change. Students will solve problems involving geometric and algebraic representations of vectors and representations of lines and planes in three dimensional space; broaden their understanding of rates of change to include the derivatives of polynomial, sinusoidal, exponential, rational, and radical functions; and apply these concepts and skills to the modelling of real-world relationships. Students will also refine their use of the mathematical processes necessary for success in senior mathematics. This course is intended for students who choose to pursue careers in fields such as science, engineering, economics, and some areas of business, including those students who will be required to take a university-level calculus, linear algebra, or physics course.

The course is organized into 3 strands:

- Rate of Change
- Derivatives and Their Applications
- Geometry and Algebra of Vectors

A detailed list of the course expectations can be found at: [www.edu.gov.on.ca/eng/curriculum/secondary/math1112curr.pdf](http://www.edu.gov.on.ca/eng/curriculum/secondary/math1112curr.pdf)

### Assessment and Evaluation

To promote student success, ongoing assessment and feedback will be given regularly to the students. A variety of assessment and evaluation strategies will be used in this course, including assignments, quizzes, and tests. Expectations will be evaluated based on the provincial curriculum expectations and the achievement levels outlined in the ministry document.

Expectations are organized into four categories of knowledge and skills. The categories and their maximum corresponding weighting is as follows:

Knowledge and Understanding	35%
Thinking	15%
Communication	15%
Application	35%

Each student's final mark will be in the form of a percentage grade based on their achievement in the 4 categories on the achievement chart. The breakdown of the final mark is as followed:

Term Evaluation	70%
Final Evaluation	30%

The final Evaluation will be completed during the final 6 weeks of the course and may include a variety of summative activities including an exam, a presentation, a seminar, or an essay or another writing assignment.

In addition to students' performance in the achievement categories, students will also be assessed on their performance in the following learning skills:

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

For specific policies on assessment and evaluation, and academic honesty, please refer to *School Procedures* in the student agenda.