



# NORTH TORONTO COLLEGIATE INSTITUTE

## Mathematics Department

Telephone 416-393-9180, ext. 20080

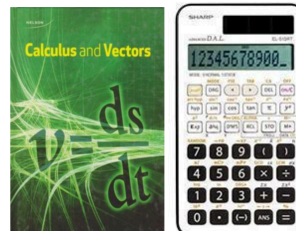
**Teacher: E. Xherro**

Course Title	Course Code	Credit Value	Prerequisite
Calculus and Vectors, Grade 12, University	MCV4U1	1.0	Advanced Functions MHF4U

**TEXTBOOK:** Calculus and Vectors, published by Nelson in 2009 (Replacement Cost: \$135)

**REQUIRED MATERIALS:** Graph paper, notebook, writing utensils, and a scientific calculator. The only approved calculator for tests, quizzes, and assignments is the SHARP EL-510

<https://www.staples.ca/products/437262-en-sharp-el510rtb-scientific-calculator-white>



### 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 modeling 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.

From the 2007 Ontario Mathematics Curriculum Document, the course explores 3 strands:

1. Rate of Change                      2. Derivatives and Applications                      3. Geometry and Algebra of Vectors

Specifically, the course overview breaks these strands into their subgroups:

- Unit 1 Limits (Chapter 1)
- Unit 2 Derivatives (Chapter 2)
- Unit 3 Applications of Derivatives (Chapter 3)
- Unit 4 Curve Sketching (Chapter 4)
- Unit 5 Derivatives of Advanced Functions (Chapter 5)
- Unit 6 Geometric Vectors (Chapters 6, 7)
- Unit 7 Algebraic Vectors (Chapters 6, 7)
- Unit 8 Lines and Planes (Chapter 8)
- Unit 9 Intersection and Distance (Chapter 9)

### ASSESSMENT AND EVALUATION BREAKDOWN

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 quizzes, tests, assignments**. 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 course evaluation is broken down according to the strands and percentages listed below:

Term Evaluation 70 %	Final Evaluation 30 %										
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### Learning Skills

The evaluation of learning skills (responsibility, collaboration, independent work, organization, self regulation, and initiative) will be reported as needs improvement, satisfactory, good or excellent. Students will find that concentrating on these skills will result in a higher level of success in meeting the course expectations.

**General Expectations:**

Regular and punctual attendance, daily homework practice, active participation in class activities, and a positive attitude are the most effective ways to ensure success in the course. Please enter the classroom with the mindset of teamwork and respect. If you are late, you are to go to the office to obtain a late slip prior to coming to the class.

**Due Dates & Test Dates:**

Students are responsible to hand in work in accordance with the due date. In the case of a known absence (e.g., a field trip, a sports meet, or an unavoidable medical appointment) on the day an evaluation is scheduled, a student must speak to the teacher in advance and provide acceptable documentation to arrange an evaluation makeup opportunity during lunch or after school at the teacher's discretion. In the case of an unexpected absence, a student must communicate with the teacher on the day upon return to school to make alternate arrangements. Failure to do so may jeopardize any makeup opportunity. Once a marked evaluation is returned to the class, a student can no longer make up for the missed evaluation, and a mark of zero will be issued.

**Student Accommodations:**

Appropriate accommodations for exceptional and ELL students are provided by the teacher in accordance with the recommendations as outlined in each identified student's Individual Education Plan (IEP) and/or Annual Education Plan (AEP). Please speak to your teacher if you have an IEP or need any accommodations to support your success. Open communication between students and the teacher is key to math learning in the classroom.

If you have an IEP, please inform your teacher within the first days of class so accommodations can be implemented right away.

**Absences:**

You are responsible for any work missed while you are away. It is best to find out what was covered up in class. Class material will be provided on the digital platforms used in class (Brightspace, OneNote, Google Classroom)

**Extra Help and Homework:**

Extra help is available several days a week after school, and during lunch. Most classes will begin with homework help. Homework is assigned on most days. Homework is expected to be completed on a regular basis.

**Respect and Behaviour:**

Students and parents should make themselves aware of the contents of the North Toronto Code of Respect and Behaviour. This document contains the specifics regarding school expectations, and procedures for attendance and evaluations. This can be found on the [NTCI website](https://www.northtorontoci.ca/), at <https://www.northtorontoci.ca/>.

**We look forward to supporting your mathematics learning journey!**

**Note: Information provided by this course outline is subject to change without further written notice.**