

# Course Outline



## Central Toronto Academy

570 Shaw Street

Toronto, Ontario M6G 3L6

<https://schoolweb.tdsb.on.ca/centraltorontoacademy>



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**Course Title:** Advanced Placement Calculus (IDC4U)

**Prerequisite(s):** MCV4U

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### Course Description

This course builds on students' previous experience with Calculus and seeks to develop a deeper understanding of the technical components of derivative and anti-derivatives. Students will solve problems involving derivatives and anti-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 a variety of post secondary fields for which a foundation in mathematics is important.

Additionally students will explore and communicate the role of mathematics in the community, post secondary cross disciplinary applications, and the nature of mathematical knowledge, learning and development. 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, physics, and applied mathematics courses.

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### Course Content

The *mathematical content* component of the course prepares students for writing the Advanced Placement(AP) Calculus Exam. This exam is administered by the [AP College Board](#) and a course description including topic outline [can be found here](#).

In many instances it is possible to cover more material than that which is found on the AP exam. In this case, additionally topics will be determined by student interest but may include:

- Multi-Variable Calculus
- Applications of Multi-Variable Calculus
- Matrix Mechanics and Multi-Variable Calculus

The *Mathematics In The Community* component of the course addresses the role of mathematics in society. It is related to the Ontario curriculum through the overall expectations found in the [Interdisciplinary Studies](#) and/or the [Advanced Learning Strategies](#) course curriculums. For AP Calculus this will encompass themes such as:

- the history of mathematics and its development over time
- application of mathematics in solving real world problems
- application of mathematics in understanding the physical universe
- the nature of knowledge, learning, and understanding in mathematics

## Assessment and Evaluation

The primary goal of assessment and evaluation is to improve student learning. Through assessment, students receive comments on their work and suggestions for improvement. Through evaluation, students receive marks for their work. Seventy percent of the course grade will be based on the student's demonstration of their most consistent level of achievement on term work, although special consideration may be given to more recent evidence of achievement. Thirty percent of the grade will be based on the student's achievement on the culminating strand.

## Categories of Assessment and Evaluation

| Term Work                      | 70% | Final Evaluation   | 30% |
|--------------------------------|-----|--------------------|-----|
| Knowledge/Understanding        | 20% | Reflection Journal | 10% |
| Thinking/Inquiry               | 15% | Student Lesson     | 20% |
| Communication                  | 15% |                    |     |
| Application/Making Connections | 20% |                    |     |

## Achievement Levels

|               |         |   |
|---------------|---------|---|
| 80–100%       | Level 4 | A superior to outstanding level of achievement      |
| 70–79%        | Level 3 | A high level of achievement                         |
| 60–69%        | Level 2 | A moderate level of achievement                     |
| 50–59%        | Level 1 | A limited but passable level of achievement         |
| Less than 50% |         | Insufficient achievement of curriculum expectations |

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## Learning Skills

The following learning skills are assessed on a continuous basis and appear on report cards alongside numerical grades. Success descriptors are listed below.

[Learning Skills Rubric](#) 

- |                    |                   |                         |
|--------------------|-------------------|-------------------------|
| • Independent Work | • Responsibility  | • E – Excellent         |
| • Collaboration    | • Initiative      | • G – Good              |
| • Organization     | • Self-regulation | • S – Satisfactory      |
|                    |                   | • N – Needs improvement |
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## Absences and Late Evaluations

Absence from a quiz or test without prior discussion with the course teacher results in an assigned zero. Upon return to class, the student must immediately write a replacement evaluation.

Late assignments will be penalized at the rate of 10% per day.

Students are responsible for providing evidence of their achievement of the overall expectations within the time frame specified by the teacher, and in a form approved by the teacher. Where in the teacher's professional judgement it is appropriate to do so, a number of strategies may be used to help prevent and/or address late and missed assignments, including deducting marks for late assignments, up to and including the full value of the assignment. Teacher policies will be made clear at the beginning of the course. Please see the [Ministry of Education's Growing Success document](#) for more information.

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## Plagiarism and Academic Dishonesty

Evaluation items must be a student's own work. Cheating, plagiarism, and the use of Artificial Intelligence are examples of Academic Dishonesty. Please refer to [Central Toronto Academy's Student Handbook](#) for the full policy including:

- cheating
  - use of artificial intelligence
  - plagiarism
  - consequences of academic dishonesty
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## Homework Policy

The purpose of homework assignment is to reinforce and enhance the learning that has taken place in the classroom. It provides opportunities for personal growth in independence, self-discipline and resourcefulness.

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## **Additional Information and Required Materials**

- Student Agenda
- Scientific Calculator
- Pencil, Paper, Binder