# MATH 1007H [0.5 Credit] Elementary Calculus I

**Basic Information:**
Course Instructor:           Masoud Nasari
Email:                       mmnasari@math.carleton.ca
Course Webpage:              All course material will be made available through CuLearn.
Class Schedule:              Asynchronous Lectures to be posted in CuLearn
Office Hour Schedule:

| TAs will hold office hours (Tentative): | | I will host additional office hours (Tentative): | |
|---|---|---|---|
| Tuesday | 18:00 – 19:30 | Mondays | 17:00 – 19:00 |
| Thursdays | 19:30 – 20:30 | | |

These office hours will start on Jan 21.          These office hours will start on Jan 18.

**Course Information:**

Prerequisites:      Ontario Grade 12 Mathematics: Advanced Functions (or equivalent), or MATH 0005 & MATH 0006.
**If you do not have the prerequisite, you will likely have a very difficult time in this course! It is suggested to drop the course and take MATH 0005 + MATH 0006 before taking this course if you did not do Grade 12 Advanced Functions (or equivalent)!**

Textbook:      Hass, Weir, Thomas, Single Variable University Calculus, Early Transcendentals, 4th ed.

Required Resources:      **This course will be using Pearson's MyMathLab for weekly homework assignments, quizzes, and (likely) the final exam. You will be required to purchase MyMathLab** in one of three options outlined below:

MyMathlab Access Only Via (Least Expensive) – Use Link Provided:
https://pearsonhighered.onthehub.com/WebStore/OfferingDetails.aspx?o=623f781a-6a91-ea11-812b-000d3af41938
> This is a good option if you do not want the textbook, already have the textbook, or find a cheap copy/older version of the textbook elsewhere.

MyMathlab Access and eText Access (Middle Expensive) – Use Link Provided:
https://pearsonhighered.onthehub.com/WebStore/OfferingDetails.aspx?o=58872712-6aee-ea11-812e-000d3af41938
> This is a good option if you are uninterested in a paper copy of the textbook, but still want access to the textbook in an online format (Note that you require internet access to be able to access the eText every time you use the eText).

MyMathLab Access, Loose-Leaf Textbook, and eText Access (Most Expensive) – Bookstore
> This is option 2, but also comes with a Loose-Leaf version of the book.

**If you are repeating the course:**
If you already had access to MyMathlab from the last time you took the course, you may be eligible for free access to allow you to repeat the course. Please contact Jeremy.Guimond@pearsoned.com to see if he can give you access. He will require: your Pearson account email/username, the section of your current course, and the email of your instructor **(NOTE YOU CAN ONLY REQUEST THIS IF YOU HAVE REPEATED THE COURSE AND PREVIOUSLY PURCHASED MYMATHLAB)**

**Note: For the direct link, you will need to create a separate account using your cmail email account to access these prices.**

Classes        Lecture videos are broken down into smaller lessons. It is recommended to keep up with the lessons in preparation for that week's assignments and the following weeks quiz. CuLearn will outline which lessons will be relevant for each assignment/quiz.

Calculators:   You are permitted to use calculators to answer questions.

**Assessment:**

Online Assignments (20%):   There will be weekly online assignments for this course due each Sunday at 11:59 pm. **There are no extensions in the online assignments**, so be sure to manage your time. All assignments are posted in advance in MyMathLab so that you can get a head start and go as far as you like right from the beginning of the class. The best 10 out of 11 assignments will be counted towards your final grade.

| Assignment Number | Due Date |
|---|---|
| 1 | Jan 24 |
| 2 | Jan 31 |
| 3 | Feb 7 |
| 4 | Feb 21 (Due After Winter Break) |
| 5 | Feb 28 |
| 6 | Mar 7 |
| 7 | Mar 14 |
| 8 | Mar 21 |
| 9 | Mar 28 |
| 10 | Apr 4 |
| 11 | Apr 11 |

Online Quizzes (40%):   During the "Lecture Timeslot" on Thursday from 18:05 - 18:35, there will be a weekly quiz. The quiz will be 30 mins in length. The quiz will be found in MyMathLab. The quiz questions will be taken from the "Additional Practice" found in MyMathLab, so it will be very helpful to work on the additional practice questions to prepare for the quiz. The best 8 out of 10 quizzes will be counted towards your final grade.

| Quiz Number | Quiz Date |
|---|---|
| 1 | Jan 28 |
| 2 | Feb 4 |
| 3 | Feb 11 |
| 4 | Feb 25 |
| 5 | Mar 4 |
| 6 | Mar 11 |
| 7 | Mar 18 |
| 8 | Mar 25 |
| 9 | Apr 1 |
| 10 | Apr 8 |

**Quizzes will be open book, and you are permitted to use a calculator.**
**You are not permitted to discuss the quiz questions with anyone during the quiz (other students, tutors, web-forums, etc…).**

Final Exam (40%):   The final exam will be a three-hour exam to be held during the exam period set by Carleton University. The final exam will be held online. The questions will be similar to those seen on the assignments, quizzes, and additional practice.

**The final exam will be open book, and you are permitted to use a calculator.**
**You are <mark>not</mark> permitted to discuss the final exam questions with anyone during the final exam (other students, tutors, web-forums, etc…).**

<mark>**The above grading scheme applies only when the Term Grade is at least 20/60. A Term Grade of less than 20/60 will automatically result in a failure with the final grade of F, regardless of the result of the final exam.**</mark>

## Policies:

Academic Integrity:   All quizzes and exams are to be done independently. Any instance of suspected cheating or plagiarism will not be tolerated. Suspected cheating will be reported to the Dean, according to the policies stated in General Regulations. For more information, please consult: https://carleton.ca/registrar/academic-integrity/

Pregnancy or Religious Obligation:   Write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details see https://carleton.ca/edc/teachingresources/administrative-pedagogy/academic-accommodations/

Academic Accommodations for Students with Disabilities:
The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your Letter of Accommodation at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable).
After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website for the deadline to request accommodations for the formally-scheduled exam. For more information, see: https://carleton.ca/pmc/

## Extra Help Options:

Tutorial Centre:   The tutorial centre is a drop in centre where you can work with a TA to answer your questions/work on problems. This term, the Tutorial Centre will be online and found in CuLearn. http://www5.carleton.ca/math/math-tutorial-centre/

MS-LAP:   Online support is available for this course through MS-LAP. You should automatically be registered in MS-LAP via CuLearn. You have access to online tutorial videos free of charge. For more information and tutorials on how to access MS-LAP, please see: https://carleton.ca/math/math-learning-assistance-program/

**<u>Course Schedule:</u>**

Here is a list of topics that will be covered over the course:

Review of Basic Concepts
Function Notation
Parent Functions and Transformations
Domain and Range
Trigonometry
Inverse Trigonometric Functions
Log Laws
Piecewise Functions
Odd and Even Functions
Limit Notation & Graphical Representations
Evaluating Limit Expressions Using Limit Laws
Continuity and Intermediate Value Theorem
Limits Involving Squeeze Theorem
Limits Involving Infinity
Instantaneous Rates of Change & Average Rate of Change
Derivative Definition
Derivatives Rules using Constant Rule, Power Rule, and Sum Rule
Derivatives Rules using Product Rule, Quotient Rule, and Chain Rule
Derivatives of Trigonometric Functions, Exponential Functions, and Inverse Functions
Implicit Differentiation
Logarithmic Differentiation
Linearization
Critical Points
Absolute and Local Extrema
First Derivative Test
Concavity & Inflection Points
Second Derivative Test
Curve Sketching
L'Hopitals Rule ($\frac{0}{0}$ and $\frac{\infty}{\infty}$)
L'Hopitals Rule ($1^{\infty}$ and $(\infty)^0$ and $0^0$)
Antiderivatives
Definite and Indefinite Integrals
Fundamental Theorem of Calculus
Area Under Curves & Area Contained Between Curves