

**MATH 1007A — Elementary Calculus I**  
**Fall 2022, Carleton University**

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School of Mathematics and Statistics
- E-mail:** mhuang@math.carleton.ca
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- Lectures:** Tuesday and Thursday 4:05 pm – 5:25 pm, **Tory Building, Room 360**
- Office Hours:** Thursday, 3 pm–4 pm (online), or email me for appointments
- Textbook:** *University Calculus: Early Transcendentals*, by J. Hass, C.E. Heil, P. Bogacki, M.D. Weir, and G.B. Thomas, Jr., 4th ed, Pearson
- Prerequisite:** Ontario Grade 12 Mathematics: Advanced Functions;  
or MATH 0005 and MATH 0006; or equivalent
- Tutorials:** Thursday 5:35 pm – 6:25 pm starting on **Sept 22**  
Section A1 (XX XX)  
Section A2 (XX XX)  
Section A3 (XX XX)  
Section A4 (XX XX)
- Tutorial quizzes:** 6 quizzes (30 minutes each) in the tutorial hours and rooms are scheduled on the following dates:
- Sept 22, Oct 6, Oct 20, Nov 10, Nov 24, Dec 8**
- Grading Scheme:**
- |                    |     |
|--------------------|-----|
| Quizzes            | 30% |
| Online assignments | 20% |
| Final Exam         | 50% |

**Note:** No make-up, early, or delayed quizzes will be held. Any missing quiz will be counted as zero (except for medical reasons; in this case a self-declaration form must be presented within 3 work days). It is the student's responsibility to pick up their quizzes in the following tutorial hours.

You are advised to do the online assignments early as long as the material has been covered, instead of working at last minute. No doctor's note or self-declaration form will be accepted for missed assignments except for extraordinary situations like acute and prolonged illness (in this case a medical proof dated within 1 work day of the missed event is required).

The best 5 of 6 quizzes will be counted.

The above grading scheme applies only when the Term Grade is at least 20/50. A Term Grade of less than 20/50 will automatically result in failure with a final grade of F regardless of the result of the final exam.

**To pass this course, students are expected to have adequate workload and participation. We do not simply transfer the weight to the final if you miss most of the term work (quizzes and assignments); if this is due to frequent illness, you should consider taking the course in the future.**

<b>Important</b>	First lecture	Sept 8
<b>Dates:</b>	Last day to change courses	Sept 20
	Last day to withdraw	Sept 30
	Fall break	Oct 24-28
	Last lecture	Dec 8
	Exam period	Dec 10–22

**Checking the Term/Tutorial Grades:** Make sure you write quizzes in the tutorial section which you are assigned to. You will be able to check your grades on Brightspace. You have the responsibility to bring to the attention of your TA or instructor any incorrect grade within 2 weeks of the day the graded test/quiz is available to you. The original quiz solution paper must be presented to make any correction.

**Syllabus:** Sections 1.1-1.3, 1.5, 1.6, 2.1, 2.2, 2.4-2.6, 3.1-3.9, 3.11, 4.1-4.5, 4.8, 5.1-5.4, 5.6 of the textbook, with certain topics omitted or abbreviated, plus your own reading of Appendices 1 and 3. The order of presentation will not always be the same as in the text.

**MyMathLab:** The course will be using Pearson's MyMathLab for weekly online assignments, for which you will need to purchase access to MyMathLab.

**Option 1:** MyMathlab Access Only (less expensive) via online link.

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.

**Option 2:** MyMathlab Access and eText Access.

**If you are repeating this course:**

If you had already purchased MyMathlab from the last time you took the course, you may be eligible for free access. Please contact Pearson Support

(<https://support.pearson.com/getsupport/s/contactsupport>) for assistance They will require: your Pearson account email/username, the section of your current course, and the email of your instructor.

**Information and Assistance:**

Some additional instructions will be provided at Brightspace.

**Online Assignment Schedule:** There will be weekly online assignments for this course due each Friday at 11:59 pm. There are no extensions in the online assignments, so be sure to manage your time. A medical reason is not sufficient for missing a whole assignment. Each assignment is graded out of 20 marks. The best 10 of 11 assignments will be counted. The assignment schedule can be found below:

Assignment number	Due date
1	Sep 23
2	Sep 30
3	Oct 7
4	Oct 14
5	Oct 21
6	Nov 4
7	Nov 11
8	Nov 18
9	Nov 25
10	Dec 2
11	Dec 9

For more information/instructions/ suggestions regarding the online assignments, please see announcements on Brightspace.

**Tutorial Work:** You are required to attend all tutorials. You will spend 30 minutes working out short quiz problems on *your own* blank paper, and hand in the solution for grading. The TA uses the remaining time for problem solving and answering student questions.

**Off-line Homework:** Selected exercises, mainly from the text and as a supplement of the online-assignment, will be assigned and posted on Brightspace. These exercises are not to be handed in and will not be graded. **However, to succeed in the course it is important that you do the exercises on a regular basis.**

**Final Exam:** This is a three hour exam scheduled by the University. It is the responsibility of each student to be available at the time of the examination. In particular, no travel plans for the examination period should be made until the examination schedule is published. After the exam is written, the students are allowed to make an appointment with the instructor within 3 weeks to view their exam. This examination review is for educational purposes only and NOT for negotiation of your grade. Please remember that we do not change your grade on the basis of your needs (such as scholarships, etc).

**Calculators:** No calculators or other such electronic aids will be permitted on any of the tests or the final examination.

**Email to Instructor:** Please use your Carleton account ONLY for all course related email, and write on the **subject line** your course code MATH 1007, which I will use to manage email.

**Math Tutorial Centre:** Room 3422 HP (near the Science Success Centre) is a drop-in centre where students in elementary courses can get one-on-one help in mathematics and statistics. The centre will open in the 2nd or 3rd week of classes.

**Academic Accommodation:** You may need special arrangements to meet your academic obligations during the term because of disability, pregnancy or religious obligations. Please review the course outline promptly and 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. Please make sure you respect these timelines particularly for tests and final exams.

You can visit the Equity Services website to view the policies and to obtain more detailed information on academic accommodation at <http://carleton.ca/equity/accommodation>.

**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](mailto: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. The deadline for submitting completed forms to the Paul Menton Centre for **December** Examinations is **Nov 11, 2022**.

**Intellectual Property Notice:** All materials created for this course (including lecture notes, posted/recorded videos, assignments and quizzes and posted solutions, the final exam, etc) remain the intellectual property of the instructor. These materials are intended for the personal and non-transferable use of students registered in the current offering of the course. Students registered in the course may take notes and make copies of course materials for their own educational use only. Students are not permitted to reproduce or distribute lecture notes and course materials publicly for commercial or non-commercial purposes without written consent from the instructor. A student who publicly posts or sells an instructor's work, without the instructor's expressed consent, may be charged with misconduct under Carleton's Academic Integrity Policy and/or Code of Conduct.

### Course Schedule:

Here are a list of topics that will be covered over the course of the year. Please note that topics may be added or dropped based on the progression of the class:

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 & Differentials

Absolute and Local Extrema & Critical Points

Mean Value Theorem

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  $0^0$ )

Mean Value Theorem

Antiderivatives

Definite and Indefinite Integrals

Area Under Curves & Area Contained Between Curves

Fundamental Theorem of Calculus