

# MATH 1007D, Elementary Calculus I

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## 1 Textbook

- J. Hass, M.D. Weir, G.B. Thomas, Single Variable University Calculus, Early Transcendentals, 4-th ed., available at the Campus Bookstore.

## 2 Topics to be covered

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, 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 ( $1^{\infty}$ ,  $\inf^0$ , and  $0^0$ ), Antiderivatives, Definite and Indefinite Integrals, Fundamental Theorem of Calculus, Area Under Curves & Area Contained Between Curves

## 3 Evaluation Scheme

- Online assignments: ..... 20%
- Online quizzes: ..... 40%
- Online final exam: ..... 40%

**Assignments:** There will be 11 assignments. And the best 10 would be considered. Assignments are due Sep 25, Oct 2, Oct 9, Oct 16, Oct 23, Nov 6, Nov 13, Nov 20, Nov 27, Dec 4, and Dec 11 at 23:59.

**Online assignments:** There will be ten 30-minute online quizzes happening on Wednesdays Sep 23, Sep 30, Oct 7, Oct 14, Oct 21, Nov 4, Nov 11, Nov 18, Nov 25, and Dec 2 at 14:35

**Online final exam:** There will be a 3-hour online final exam scheduled during the usual exam period. It is the responsibility of each student to be available at the time of the final examination.

## 4 Lectures, tutorials, and office hours

- Lectures: Lectures are scheduled to be on Wednesdays and Fridays 14:35-15:55. But all the lectures will be pre-recorded and available from 7 am till 23:59 each day. However, on Fridays at the time of the lecture there will be a live problem solving session.
- Tutorials: There will be live tutorial sessions on Fridays 16:35 - 17:25. They would also be problem solving sessions.
- Office hours: TBA

### **Pregnancy 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 the [Student Guide](#).

### **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 the [Student Guide](#)

### **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/exam requiring accommodation. 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 exams.

- The above class outline is subject to change depending on the progress of the course.
- All the times given are in eastern time