MATH2007C
Elementary Calculus 2   Winter 2021

Instructor: Mathieu Lemire
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Lectures: This is an online course. The lectures will be in the form of short videos posted on cuLearn. Batches of Videos shall be posted twice a week on Tuesdays and Thursdays before 14:35 (or earlier). The first virtual class should appear on cuLearn by January 12th.

Tutorials: Tutorials are scheduled to be on Tuesdays from 16:35 to 17:25. The first tutorial is on January 26th. The following table give more details:

Section	Room	TA's name	TA's connect email
C1	-	TBA	-
C2	-	TBA	-
C3	-	TBA	-
C4	-	TBA	-

Tutorials should be live on cuLearn at the indicated times. Recording of the tutorials shall then be available on cuLearn under 'Tutorials'

Office hours: By appointment on Zoom or FaceTime or in virtual room on cuLearn. Please write to me at mathieul@math.carleton.ca to schedule an appointment.

Textbook: Single Variable Calculus: Early Transcendentals, 9th edition (you can also used the 8th edition), by James Stewart, Brooks/Cole.

Prerequisites: MATH1004 or a grade of C- or higher in MATH1007; or permission of the school.

Evaluation: Your final grade will be calculated as:

Term Mark 60 % (best 3 tests among 4) + Final Examination 40%

Term Mark: There will be four tests administered online around the time of tutorials on **February 2nd**,**February 23rd**, **March 9th** and **March 30th** . **No make up, early or delayed tests will be given.**

Final exam: The final exam is a cumulative three hours closed book exam scheduled by the university. The exam period runs from April 16 to April 27th (including Saturdays). It is student's responsibility to be available at the time of the examination. Naturally, the final examination will take place online. Students who missed the final examination may be eligible for a deferred exam provided that they present a doctor note or another supporting document to the Registrars Office. It is the Registrars Office and not the instructor which take decision of granting a deferred examination. After the exam is written, students may see their final examination papers. This examination review is for educational purpose only and NOT for negotiation of the grade.

Calculators: Only non-programmable and non-graphical calculators are allowed for tests and the final exam.

Practice problems lists Practice problems lists will regularly be posted on cuLearn. These problems

are not to be handed in and will not be graded. However, in order to succeed in the course, it is absolutely essential to practice on a regular basis. The practice questions will be taken from the textbook for the course.

Withdrawal: The last day for academic withdrawal is **April 14th**.

Students with Disabilities: Students with disabilities who require academic accommodations in this course are encouraged to contact the Paul Menton Centre for Students with Disabilities to complete the necessary Letters of Accommodation. After registering with the PMC, make an appointment to meet with me and discuss your needs in order to make the necessary arrangements as early in the term as possible. Please consult the PMC website for the deadline to request accommodations for the formally-scheduled exam (if applicable).

Notes:

1. The best three tests out of four will be used to determine the test component of your final mark. If you are in the impossibility of doing a test, please let me know as soon as possible by writing to me an email. The procedure during this different term is to first fill up the Student Declaration Form: https://carleton.ca/registrar/wp-content/uploads/self-declaration.pdf and then send it to me (the professor and only the professor) by email. In the declaration form, you must write the reasons of your absence. Due to the current situation, you do not need to obtain and send a medical note.

2. Problem lists, comments, solutions and other informations will regularly be posted on cuLearn. It is your responsibility to look on cuLearn to obtain these informations.

3. **I will not necessary follow the same order of topics as in the textbook. The best way to know where exactly we are in class is to come to class or to follow the order of topics found in the practice problems lists.**

4. Following the online virtual classes is very important and I strongly encourage you to do so.

5. **Pregnancy accommodation:** 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 visit the Equity Services webpage.

6. **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 visit the Equity Services webpage.

Tentative Class schedule:

IMPORTANT: This schedule is just to give you an overview. Because of several factors, it is quite possible that the timing of topics will be changing as we go further into the course. Some topics may possibly be added and some may be removed. The practice problems lists that will be available on cuLearn will give you the exact topics covered on each week.

January 11th to January 15th: Antiderivative, definition of indefinite integral, Basic rules of integration.

January 18th to January 22nd: Definite integral, Fundamental Theorem of Calculus, Substitution method

January 25 to January 29th: Integration by partial fractions, Tabular Method, Integration of trigonometric functions Part 1

February 1st to February 5th: Integration of trigonometric functions Part 2, Integration by trigonometric substitution

February 8th to February 12th: Improper Integrals, Sequences

February 15 to February 19: Break

February 22nd to February 26th: Sequences, Series, Convergent or Divergent Series, Telescoping series.

March 1st to March 5th: Geometric series, Integral Test, Comparison Test, Limit Comparison Test

March 8th to March 12th : Absolutely Convergent Series, Ratio Test, Root Test

March 15 to March 19: Alternating Series Test, Conditionally Convergent Series, Power Series

March 22nd to March 26th: Radius of Convergence of a Power Series, Interval of convergence, Representation of a function, Differentiation and Integration of a series.

March 29th to April 2nd: Taylor and MacLaurin Series, Binomial Series, Parametric equations of a curve, Tangent line of a parametric curve

April 5th to April 9th: Horizontal and vertical Tangent line, arc length of a curve, polar coordinations, polar curves

April 12th to April 14th: Slope of tangent line of a polar curve, Areas of polar curves, Lengths of polar curves