

MATH2007B
Elementary Calculus 2 Fall 2020

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 Mondays and Wednesdays before 18:00 (or earlier). The first virtual class should appear on cuLearn by September 9.

Tutorials: Tutorials are scheduled to be on Wednesdays from 21:05 to 21:55. The first tutorial is on September 23rd. The following table give more details:

Section	Room	TA's name	TA's connect email
B1	-	TBA	TBA
B2	-	TBA	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, 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:

$$\text{Term Mark } 60 \% \text{ (best 4 tests among 5)} + \text{Final Examination } 40\%$$

Term Mark: There will be five tests administered online around the time of tutorials on **September 30th, October 14th, November 4th, November 18th** and **December 2nd** . **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 December 12 to December 23rd (including Saturdays). It is student's responsibility to be available at the time of the examination. In particular, no travel plans should be made until the examination schedule is published. It is the students responsibility to find out the correct date and time of the exam and the room where it takes place. 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.

Withdrawal: The last day for academic withdrawal is **December 11th**.

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 four tests out of five 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.
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.

September 9 to September 11: Antiderivative, definition of indefinite integral, Basic rules of integration.

September 14 to September 18: Definite integral, Fundamental Theorem of Calculus, Substitution method

September 21 to September 25: Integration by partial fractions, Tabular Method, Integration of trigonometric functions Part 1

September 28 to October 2: Integration of trigonometric functions Part 2, Integration by trigonometric substitution

October 5 to October 9: Improper Integrals, Sequences

October 12 to October 16: Sequences, Series, Convergent or Divergent Series, Telescoping series.

October 19 to October 23: Geometric series, Integral Test, Comparison Test, Limit Comparison Test

October 26 to October 30: Break

November 2 to November 6: Absolutely Convergent Series, Ratio Test, Root Test

November 9 to November 13: Alternating Series Test, Conditionally Convergent Series, Power Series

November 16 to November 20: Radius of Convergence of a Power Series, Interval of convergence, Representation of a function, Differentiation and Integration of a series.

November 23 to November 27: Taylor and MacLaurin Series, Binomial Series, Parametric equations of a curve, Tangent line of a parametric curve

November 30 to December 4: Horizontal and vertical Tangent line, arc length of a curve, polar coordinates, polar curves

December 7 to December 11: Slope of tangent line of a polar curve, Areas of polar curves, Lengths of polar curves