

MATH2007B
Elementary Calculus 2 Fall 2022

Instructor: Mathieu Lemire
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Lectures: Our lectures are on Wednesdays and Fridays from 15:35 to 17:55 at room C164 in the Loeb Building. Our first class is on Wednesday September 7th.

Tutorials: Tutorials are scheduled to be on Wednesdays from 18:05 to 18:55. The first tutorial is on September 21st. The following table give more details:

Section	Room	TA's name	TA's connect email
B1	TBA	Giries Ghafari	georgeghafari@cmail.carleton.ca
B2	TBA	Nathan Situ	nathansitu@cmail.carleton.ca

Office hours: I will be in my office on Tuesdays from 10:00 to noon, Thursdays from 10:00 to 11:00 and Fridays from 13:00 to 14:00. Do not hesitate to come.

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:

$$\text{Term Mark } 50 \% + \text{Final Examination } 50\%$$

Term Mark: There will be four tests administered online around the time of tutorials on **September 28th, October 19th, November 9th and November 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 December 10th to December 22nd (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 **November 15th.**

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. 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.

September 7th to September 9th: Antiderivative, definition of indefinite integral, Basic rules of integration.

September 12th to September 16th: Definite integral, Fundamental Theorem of Calculus, Substitution method

September 19th to September 23rd: Integration by partial fractions, Tabular Method, Integration of trigonometric functions Part 1

September 26th to September 30th: Integration of trigonometric functions Part 2, Integration by trigonometric substitution

October 3rd to October 7th: Improper Integrals, Sequences

October 10th to October 14th: Sequences, Series, Convergent or Divergent Series, Telescoping series.

October 17th to October 21st: Geometric series, Integral Test, Comparison Test, Limit Comparison Test

October 24th to October 28th: Break

October 31st to November 4th: Absolutely Convergent Series, Ratio Test, Root Test

November 7th to November 11th: Alternating Series Test, Conditionally Convergent Series, Power Series

November 14th to November 18th: Radius of Convergence of a Power Series, Interval of convergence, Representation of a function, Differentiation and Integration of a series.

November 21st to November 25th: Taylor and MacLaurin Series, Binomial Series, Parametric equations of a curve, Tangent line of a parametric curve

November 28th to December 2nd: Horizontal and vertical Tangent line, arc length of a curve, polar coordinations, polar curves

December 5th to December 9th: Slope of tangent line of a polar curve, Areas of polar curves, Lengths of polar curves