Instructor: Mathieu Lemire  
Office: 5250 Herzberg Building  
Tel.: 613-520-2600 ext. 1983  
E-mail: mathieul@math.carleton.ca or through cuLearn.

Lectures: Wednesdays and Fridays from 8:35 to 9:55 at room 102 Azrieli Theater. The first class is on January 5th.

Tutorials: On Fridays from 13:35 to 14:25. Beginning on the week of September 16. Tutorials will consist of a problem solving session and you are highly encouraged to attend. Attending tutorials will not give you any bonus on your final mark. For your tutorials or tests, make sure to go to the section that you registered into. The following table indicate the location of each tutorial section: TBD

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<thead>
<tr>
<th>Section</th>
<th>Room</th>
<th>TA’s name</th>
<th>TA’s connect email</th>
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<tbody>
<tr>
<td>F1</td>
<td></td>
<td>Selin Erdin</td>
<td><a href="mailto:selinerdin@email.carleton.ca">selinerdin@email.carleton.ca</a></td>
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<tr>
<td>F2</td>
<td></td>
<td>Suman Thapa</td>
<td><a href="mailto:SumanThapa@email.carleton.ca">SumanThapa@email.carleton.ca</a></td>
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<tr>
<td>F3</td>
<td></td>
<td>Lucas Finney</td>
<td><a href="mailto:lukenfinney@email.carleton.ca">lukenfinney@email.carleton.ca</a></td>
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<tr>
<td>F4</td>
<td></td>
<td>Dinesh Dawonauth</td>
<td><a href="mailto:dineshdawonauth@email.carleton.ca">dineshdawonauth@email.carleton.ca</a></td>
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Office hours: Wednesdays from 11:00 to 12:00 and Fridays from 10:30 to 11:30. Also possible at other times by appointment. All my office hours are held in my office (5250HP).

Textbook: Elementary Calculus with Applications (Lecture Notes) by Elena Devdariani, Any edition, Bukar. (But any edition is good) This textbook is available the Campus Bookstore and at Haven Books, 43 Seneca Street, (613) 730-9888. (5-minute walk from campus, two blocks from Bronson Avenue along Sunnyside Avenue.)

Prerequisites: Ontario Grade 12 Mathematics: Advanced Functions; or MATH 0005, or equivalent; or permission of the School.

Evaluation: Your final grade will be calculated as:

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

Term Mark: There will be four 50-minute tests administered during tutorials on September 27th, October 18, November 8th, and November 29th. No make up, early or delayed tests will be given. Students are allowed to miss one test without penalty as we only count the best 3 out of 4 tests. If you miss one test you do not need to show me any medical note. It is only in the rare case when a student misses more than one test due to illness (supported by a doctor’s note), jury duty or extreme personal misfortune, that the term mark may be pro-rated. Best 3 tests out of 4 will be counted as 40%.

Final exam: The final exam is a cumulative three hours closed book exam scheduled by the university. The exam period runs from December 9 to December 21st (including Saturdays and Sundays). 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. To pass this course, a student must obtain at least 50%.

Calculators: Only calculators that are non-programmable, non-graphical and without an option to compute derivatives and integrals are allowed for tests and the final exam. I reserve the right to confiscate any calculator during a test or a 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 6th.

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 of the four tests will be used to determine the test component of your final mark. Medical notes will only be accepted in the rare case when a student is missing a second test.

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. Coming to class is very important and I strongly encourage you to do so.

4. It is each student’s responsibility to collect the marked tests from the TA. The test papers are normally distributed in the tutorial session following the date of the test.

5. To pass the course a student must obtain at least 50% as his final mark and at least 30% on the final exam. Students who write 2 tests or less and are absent on the final examination will be assigned the grade of FND (Fail No Deferral). Such students are not eligible to write a deferred exam.

6. Students who missed the final examination may be eligible for a deferred exam, provided that they present a doctor’s note or another supporting document to the Registrars Office. It is the Registrars Office (not the course Instructor!) which makes the decision of granting a deferred examination. After the deferred exam is written, any questions should be directed to the School of Mathematics and Statistics and not to the Instructor.

7. 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.

8. 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.

Extra available help: For extra help in mathematics on top of my office hours and the office hours of teaching assistants, I would suggest to you to also consider the following services available at Carleton:

Math Tutorial Center The Math Tutorial Centre (MTC) (located at 3422 HP) is study space for any student who wishes to study mathematics individually or in group while receiving support from one of our mathematics teaching assistants (TA). For more details and to consult the opening hours, please look at: http://carleton.ca/math/math-tutorial-centre/

Math and Stats Learning Assistance Program (MS-LAP) Math and Stats Learning Assistance Program (MS-LAP) supports first year mathematics and statistics courses. This free of charge program helps students achieving their goals. It provides learning support and solutions to homework questions through assistance videos and virtual office hours. These services are available on cuLearn. For more details please consult: https://carleton.ca/math/math-learning-assistance-program/
List of Topics

**Elementary Functions (Ch 1)**
1.1 Definition, domain, range.  1.2 Algebra of functions.  1.3 Transformation of graphs.  Polynomial, rational, power functions.  1.5 Exponential functions.  1.6 Logarithmic functions.

**Limits (Ch 2)**
2.1 The limit of a function at a points.  2.2 Properties of limits.  2.3 Limits at infinity.  2.4 Continuous functions.  The Intermediate Value Theorem.

**The Derivative and Rules of Differentiations (Ch. 3)**
3.1 The derivative as the rate of change and as the slope of the graph of a function.  3.2 Basic rules of differentiation.  Power Rule.  Product and Quotient Rules.  Chain Rule.  Implicit Differentiation.  3.3 Higher order derivatives.

**Applications of the Derivative (Ch 4)**
4.1 Determining the intervals where a function is increasing/decreasing.  4.2 Marginal Concepts in Economics.  4.3 Elasticity of the Demand.  4.4 Related Rates.  4.5 Maximum and minimum values.  4.6 Second derivative.  4.7 Curve Sketching.  4.8 Optimization problems.  4.9 Exponential models (continously compounded interest, exponential growth and decay, learning curves).

**Functions of Several Variables (Ch 5)**
5.1 Examples of functions of Two and Three Variables.  5.2 Partial Derivatives.  5.3 Maxima and Minima of Functions of Two Variables.  5.4 Lagrange Multipliers.  Constrained Optimization.

**Integration (Ch 6)**
6.1 Antiderivative.  Basic rules of integration.  6.2 Integration by substitution.  6.3 The definite integral.  6.4 The fundamental Theorem of Calculus.  6.5 Evaluation of definite integrals.