



## MATH 2007A: ELEMENTARY CALCULUS II

Fall 2022

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<b>Instructor:</b>	Dr. Fares Said	<b>Lecture:</b>	Tue. & Thu 14:35 - 15:55
<b>Email:</b>	<a href="mailto:fares.said@carleton.ca">fares.said@carleton.ca</a>	<b>Place:</b>	Mackenzie Building Room: 3275
<b>Office:</b>	4220 HP	<b>Office Hours:</b>	Thr: 16:15 - 17:15 (office) Or Via Class Zoom link

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**Course Pages:** <https://brightspace.carleton.ca/d2l/home>

**Objectives:** This course covers Techniques of integration, improper integrals. Polar coordinates, parametric equations. Indeterminate forms, sequences and series, Taylor's formula and series.

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

**Textbook:** *The official textbook of the course is: Single Variable Calculus: Early Transcendentals, 9th edition, by James Stewart; Daniel K. Clegg; Saleem Watson. You can use the book University Calculus by Hass-Weir-Thomas if you already have it. Practice problems will be assigned for both textbooks.*

**Classes:** start on September 8, 2022 Tuesday & Thursday, 2:35 p.m. - 3:55 p.m., in Mackenzie Building Room: 3275. The last lecture will be held on Thursday, Dec 8, 2022. You are responsible for attending class and taking your own notes.

**Tutorials:** start on September 22, 2022 Thursdays from 13:35 - 14:25. The following table gives more details:

Tutorial	TA name	TA email	Time	Room
A1	Seyed Soroush Kazemi	<a href="mailto:soroushkazemi@cmail.carleton.ca">soroushkazemi@cmail.carleton.ca</a>	Thu 13:35 - 14:25	SA 502
A2	Vishal Bhatoy	<a href="mailto:vishalbhatoy@cmail.carleton.ca">vishalbhatoy@cmail.carleton.ca</a>	Thu 13:35 - 13:25	SA 402

**Calculator:** No calculators or other memorandum will be permitted on tests or the final exam.

**Tests:** There will be **four** 50-minute tests administered during tutorials on **Sep 29, Oct 20, Nov 17 and Dec 01**. If you miss a test and provide adequate documentation (doctor's note, etc...), then the weighting of that test will be placed on the final exam, otherwise a mark of 0 will be given for the test. **There are no make up tests!** You must bring your student card to each test and exam and place it on your desk where it is visible. Any request to review your grade for your test or tutorial must be done directly to your TA within one week of receiving the grade.

**Final:** The final exam will be a three-hour closed book exam to be held during the period of Dec 10 to 22 (including Saturdays and Sundays), 2022. Please check the link provided on brightspace to confirm the exact date and location of the final exam as that period approaches. Students who wish to review their final examination paper must do so within one week from the release of final grades. This privilege is for educational purposes and not an opportunity to argue about the marking.

### Grading Scheme:

- Four Tests (50%), (12.5% each)
- Final Examination (50%).

**The above grading scheme applies only when the Total tests grade is at least 25/50. A Tests Grade of less than 25/50 will automatically result in a failure with the final grade of F, regardless of the result of the final exam.**

**TA Office Hours:** Check Brightspace for more details.

**Tutorial Centre:** 3422 HP (near the Science Student Success Centre): This is a drop-in centre where students in elementary courses can get one-on-one help in mathematics and statistics, on a 'first come first serve' basis. For more information, including hours of operation, see: <https://carleton.ca/math/math-tutorial-centre/>

**MS-LAP:** Online support is available for this course through MS-LAP. You should automatically be registered in MS-LAP via CuLearn. You have access to online tutorial videos free of charge. For more information and tutorials on how to access MS-LAP, please see: <https://carleton.ca/math/math-learning-assistance-program/>

## Policies

**Academic Integrity:** All tests, assignments, quizzes, and exams are to be done independently. Any instance of suspected cheating or plagiarism will not be tolerated. Suspected cheating will be reported to the Dean, according to the policies stated in General Regulations. For more information, please consult: <http://www.carleton.ca/cu0607uc/regulations/acadregsuniv14.html>

**Academic Accommodations:** You may need special arrangements to meet your academic obligations during the term. For an accommodation request the processes for students with disabilities, religious obligations, and the need for parental leave can be found by visiting: <https://students.carleton.ca/services/accommodation/>

*Accommodation for Student Activities:* Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor 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. <https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf>

**Tentative Course Outline:** The weekly coverage might change as it depends on the progress of the class. However, you must keep up with the reading assignments.

Week	Content
NA Sept 8	<ul style="list-style-type: none"> <li>• Introduction to the course</li> </ul>
Week 1 Sept 13, 15	<ul style="list-style-type: none"> <li>• 4.4 Indeterminate forms and L'Hospital's rule.</li> </ul>
Week 2 Sept 20, 22	<ul style="list-style-type: none"> <li>• 5.5 The Substitution Rule.</li> <li>• 7.1 Integration by Parts.</li> </ul>
Week 3 Sept 27, 29	<ul style="list-style-type: none"> <li>• 7.2 Trigonometric Integrals.</li> <li>• 7.3 Trigonometric Substitution.</li> </ul>
Week 4 Oct 4, 6	<ul style="list-style-type: none"> <li>• 7.4 Integration of Rational Functions by Partial Fractions.</li> <li>• 7.5 Strategy for Integration.</li> </ul>
Week 5 Oct 11, 13	<ul style="list-style-type: none"> <li>• 7.8 Improper Integrals.</li> <li>• 10.1 Curves Defined by Parametric Equations.</li> </ul>
Week 6 Oct 18, 20	<ul style="list-style-type: none"> <li>• 10.2 Calculus with Parametric Curves.</li> <li>• 10.3 Polar Coordinates.</li> </ul>
NA Oct 25, 27	<ul style="list-style-type: none"> <li>• <b>FALL BREAK WEEK</b></li> </ul>
Week 7 Nov 1, 3	<ul style="list-style-type: none"> <li>• 10.4 Areas and lengths in Polar Coordinates.</li> <li>• 11.1 Infinite Sequences.</li> </ul>
Week 8 Nov 8, 10	<ul style="list-style-type: none"> <li>• 11.2 Series.</li> </ul>
Week 9 Nov 15, 17	<ul style="list-style-type: none"> <li>• 11.3 The Integral Test and Estimates of Sums.</li> <li>• 11.4 The Comparison Tests.</li> </ul>
Week 10 Nov 22, 24	<ul style="list-style-type: none"> <li>• 11.5 Alternating Series.</li> <li>• 11.6 Absolute Convergence and the Ratio and Root Tests.</li> </ul>
Week 11 Nov 29 and Dec 1	<ul style="list-style-type: none"> <li>• 11.7 Strategy for Testing Series.</li> <li>• 11.8 Power Series.</li> </ul>
Week 12 Dec 6, 8	<ul style="list-style-type: none"> <li>• 11.9 Representation of Functions as Power Series.</li> <li>• 11.10 Taylor and Maclaurin Series</li> <li>• Review</li> </ul>

### Important Dates:

September 8	First class
September 13	Last day for registration
September 30	Last day to withdraw from fall term with full fee adjustment
September 29	Test 1
October 10	Statutory holiday
October 20	Test 2
October 24-28	Fall break. Classes are suspended
November 17	Test 3
November 11	Exam accommodation request
November 15	Last day to withdraw from the course
December 01	Test 4
December 9	Last day of classes
December 10-22	Final Exam

For more information please visit <http://carleton.ca/registrar/registration/dates-and-deadlines/>