

MATH 1004D Fall 2021

Calculus for Engineering or Physics

Instructor:

Professor I. S. Pressman

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Office Hours:

Thursdays, 12 noon to 1:30 p.m. same zoom link as class. More hours will be listed later. TA's will also offer office hours to answer questions.

Textbook:

- The ABC's of Calculus, Volume 1, by Angelo Mingarelli, Nolan Company, 2019 Edition; Purchase for \$50 at: books.mingarelli.com to get an online copy of the book.
- The identical book is available at a higher price from the Carleton bookstore.
- FREE **Solution manual** for the ABC textbook [Click here](#).

Additional References:

The Tutorial Compendium for First Year Calculus, 2nd Edition by Mark Blenkinsop, Prometheus Press, available through Haven Books.

Any standard Calculus hardcover textbook authored by one of Stewart, Briggs, Thomas, Larson, etc. will be a valuable addition to your learning. These books may also be found in the Carleton MacOdrum Library- a valuable resource on the campus. A visit is recommended.

Prerequisite:

Ontario Grade 12 Mathematics: Advanced Functions and Introductory Calculus; or an OAC in Calculus, or MATH 0007, or equivalent.

Lectures:

Classes will be **synchronous** on **Fridays** (live) from 1135 – 1255. These will be preceded each week, by an **asynchronous** class available from the previous Monday. The ZOOM link for classes will be emailed to you, and found in ANNOUNCEMENTS for the course on [Brightspace](#).

You are required to **first view the asynchronous** class in order to understand what we will be discussing in the Friday class. Please understand that the pace is fast and unrelenting. We may cover as much in a week as you did in a month in High School. Also, our expectation of you is that you will **know & master** the details of everything that is taught to you. You are required to have had an Introductory Calculus course: that was a stroll in the park in comparison.

- Questions related to course materials and operation should be emailed to the Professor. Questions regarding tutorial or homework should be emailed to your TA. Your Header line **MUST** begin with MATH1004D in order that it arrive to the correct mailbox.
- TA email addresses will be posted on [Brightspace](#).

Tutorial:

Tutorials are Mondays 935 - 1025 Starting Sept 20 (Canada Federal Election Day).

- Tutorial sessions will be live via Zoom (Tutorial groups TBA on [Brightspace](#)).
- Tutorials will be devoted to problem solving.

EVALUATION:

- **Tutorial attendance: expected but not graded.**
- **30% 2 online tests (2 hours each): 15%+15%**
- **45% 3 assignments 3 x 15 = 45%**
- **25% Final Exam. (3 hours) ON LINE (not in person)**

Term Tests:

- **There will be two 120 Minute online tests on: Oct 10, Nov 8**
- **Tests will be open for 24 hours (beginning after the tutorial at 11AM). You may choose the 2-hour period within this time frame for when you write the tests.**
- **The material covered on each test will be announced one week before the test.**

If you **miss** a test, you will receive a zero mark unless you provide a proper documented reason (e.g., Hospital or Doctor's note; or self-declaration form). In that case **a** make-up test will be scheduled.

Assignments:

- **There will be three assignments:**
 Sep 23 due Oct 3
 Oct 15 due Oct 24
 Nov 13 due Nov 21
- **Assignments must be submitted electronically in pdf format (please familiarize yourself with scanning apps, such as CamScanner). Late submissions will be subject to penalty, at the discretion of the Professor. While unforeseen circumstances may arise, once solutions to the assignment are posted, no further submission will be accepted. Please read all assignment details carefully.**

Assignments are done in GROUPS. There is one submission for each group- everyone in a group will receive the same grade. GROUPS (teams) will be randomly formed in the first week of classes. If you have a friend with whom you wish to be partnered, PLEASE email me by Sept 15 with the header – MATH1004D GROUPS, and give me the name(s), student numbers and email addresses of people with whom you wish to be teamed (they MUST be in this section). GROUP work and GROUP management are essential skills; we will discuss this in class.

Final Examination:

There will be a 3-hour exam scheduled during the Final Exam period. It is the responsibility of each student to be available at the time of the final examination.

Detailed Weekly Class Outline: The order and timing might vary slightly.

Week	Sections	Topics-
1 Sept 8-11	Chapter 1, Appendices A, B, C, D	Functions, Review of Chapter 1, Trigonometry
2 Sept 12-18	2.1-6, 3.1-3.3	Limits and Continuity, Evaluating Limits at Infinity, Derivatives,
3 Sept 19-25	3.4-3.5 3.7-3.8	The Chain Rule , Implicit differentiation, Derivatives of trigonometric functions
4 Sept 26- Oct 2	3.9-3.10, 3.12	Inverse functions and their derivatives.
5 Oct3-9	4.1-4.6	Inverse trigonometric functions and their derivatives, L'Hospital's Rule.
6 Oct10-16	6.1-6.4	Exponentials, Logarithms and their derivatives.
7 Oct17-23	7.1-7.2	Anti-derivatives. The Indefinite Integral, Definite Integrals
8	Oct 24– Oct 30	FALL BREAK NO CLASSES
9 OCT31- Nov6	7.3	Area, Integration by substitution; change of variable.
10 Nov7-13	7.4, 7.5.1	Integration by Parts
11 Nov14-20	7.6-7.7	Partial Fractions, Powers of Sines and Cosines, Trigonometric substitutions
12 Nov21-27	8.2	Area between Two Curves.
13 Nov 28- Dec4	8.3	Volumes of Solids of Revolution
14 Dec5-10	REVIEW	REVIEW

Communications via email:

For questions, enquiries, etc. ONLY use your Carleton email address. Always add “MATH1004 D” to the beginning of the subject line when contacting me by email.

Calculators:

Only **non-programmable** calculators are allowed for tests and for the final exam.

Brightspace:

Announcements, notes, videos, and instructions related to the course will be posted on [Brightspace](#). It is **every student's responsibility** to remain up to date with all content posted on [Brightspace](#).

Important Dates:

- 8 Sept: First day of classes
- 20 Sept: First tutorial.
- 8 Oct: December examination schedule posted: check for conflicts
- 11 Oct: Statutory holiday – NO tutorial
- 25 - 29 Oct: Fall STUDY break: no classes or tutorials or office hours.
- 10 Dec: Last day of classes.
- 11 - 23 Dec: Exam period
- For more details, check The Calendar Year, 2021 – 2022

Copyright and Recording Policy:

- All course materials, including notes, outlines, recordings, and other materials, are copyright protected and remain the intellectual property of their respective author(s). Students registered in the course may take notes and make copies of course materials for their own educational use only. Students are not permitted to reproduce or distribute lecture notes and course materials publicly for commercial or non-commercial purposes without express written consent from the copyright holder(s).
- Web conferencing tutorial sessions and office in this course may be recorded and made available only to those within the class. Sessions may be recorded to enable access to students with internet connectivity problems, who are based in different time zones, and/or who have conflicting commitments. If you wish not to be recorded, you need to leave your camera and microphone turned off. You will be notified at the start of the session if it is being recorded.

MS-LAP:

Math & Stats Learning Assistance Program (MS-LAP) supports first year mathematics and statistics courses. This free of charge program helps students in achieving their goals. It provides learning support and solutions to homework questions through assistance videos. **These services are available on Brightspace.**

MS-LAP gives students tools to succeed while explaining step-by-step particular problem strategies and associated theory. The program is for anyone who wants to deepen their understanding at their own pace, and in the comfort and privacy of their home.

Academic accommodations for students with disabilities:

<https://carleton.ca/edc/teachingresources/administrative-pedagogy/academic-accommodations/>

The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, attention deficit hyperactivity disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or <https://carleton.ca/pmc/> for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your Letter of Accommodation **at the beginning of the term, and no later than two weeks before the first scheduled test** requiring accommodation. After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. For the deadline to request accommodations for formally scheduled exams, visit the PMC website <https://carleton.ca/pmc/>

Religious obligations and/or accommodation for pregnancy:

Write to your instructor with 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 see the student guide at <https://carleton.ca/equity/wpcontent/uploads/Student-Guide-to-Academic-Accommodation.pdf>

Survivors of Sexual Violence:

As a community, Carleton University is committed to maintaining a positive learning, working, and living environment where sexual violence will not be tolerated, and where survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit:

<https://carleton.ca/sexual-violence-support/>

The Self Declaration Form for the coming academic year.

<https://carleton.ca/covid19/cu-faq/what-academic-accommodations-are-in-place/>

Academic Integrity:

It is YOUR responsibility to know **the academic integrity standards** at Carleton which can be found [here](#). Incidents of cheating will be treated seriously. All suspected incidents and supporting documentation will be forwarded to The Office of The Dean of Science.

<https://carleton.ca/registrar/academic-integrity/>

Plagiarism

The University Academic Integrity Policy defines plagiarism as “*presenting, whether intentionally or not, the ideas, expression of ideas or work of others as one’s own.*” This includes reproducing or paraphrasing portions of someone else’s published or unpublished material, regardless of the source, and presenting these as one’s own without proper citation or reference to the original source. Examples of sources from which the ideas, expressions of ideas or works of others may be drawn from include but are not limited to: books, articles, papers, literary compositions and phrases, performance compositions, chemical compounds, art works, laboratory reports, research results, calculations and the results of calculations, diagrams, constructions, computer reports, computer code/software, material on the internet and/or conversations.

Examples of plagiarism include, but are not limited to:

any submission prepared in whole or in part, by someone else;
using ideas or direct, verbatim quotations, paraphrased material, algorithms, formulae, scientific or mathematical concepts, or ideas without appropriate acknowledgment in any academic assignment; using another’s data or research findings without appropriate acknowledgement; submitting a computer program developed in whole or in part by someone else, with or without modifications, as one’s own; and
failing to acknowledge sources through the use of proper citations when using another’s work and/or failing to use quotations marks.

Plagiarism is a serious offence that cannot be resolved directly by the course’s instructor. The Associate Dean of the Faculty conducts a rigorous investigation, including an interview with the student, when an instructor suspects a piece of work has been plagiarized. Penalties are not trivial. They can include a final grade of “F” for the course or even suspension or expulsion from the University.