MATH 1004E - Calculus for Engineering or Physics - Fall 2022

Instructor	Dr. Hua (5218 HP, ext. 8999)
E-mail	xhua@math.carleton.ca (When you send me email, Only official *Carleton University* email addresses are accepted. Your email subject: MATH1004E)
Web Site	Brightspace
Office Hours	Mondays and Wednesdays, 2:30pm-3:10pm, or by appointment, or by email.
Textbook	The ABC's of Calculus, Volumes 1, by Angelo Mingarelli, Nolan Company. For the **2022 Digital edition,** go to mingarelli.com and order it for the term, i.e., 150 days, for $80. Credit Cards supported. SOFTCOVER COPIES are NOW AVAILABLE in HP 4380 for $100 (net/tax in); cash or e-transfer only, no credit cards. First come first served basis, limited quantities available.
Lectures	Wednesday and Friday 11:35-12:55, AT102
Tutorials	Friday: 13:35 - 14:25. Tutorial will start from Sept 16.
Calculators	Only non-programmer calculators are permitted.
Contents	Limits. Differentiation of the elementary functions. Rules of differentiation. Inverse trigonometric functions. Applications of differentiation: max-min problems, curve sketching, approximations. Definite and indefinite integrals, techniques of integration. Applications to areas and volumes. Precludes additional credit for BIT 1000, BIT 1100, BIT 1200, MATH 1002, MATH 1007, MATH 1009. Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005 and MATH 0006, or equivalent.

Marking Scheme:

Tutorial attendance: expected but not graded.

2 online tests (2 hours each): 15%+15%=30%

2 assignments: 2 x 15 = 30%

Final exam: 40%

Missed tests and assignments will be dealt with at a unique predetermined time before the end of term. Ask your instructor for more details.

Final Exam:

- A 3-hour final examination will be held during the exam period, covering the entire course. DO NOT schedule flights or other departures during the exam period until the dates are known.

Tests:

- **Tests will be open Online for 24 hours and you'll choose the 2-hour period within this time frame.**
  Test 1: Oct 12, 1PM-Oct 13, 1PM; Test 2: Nov 16, 1PM-Nov 17, 1PM

Assignments:

- Two assignments due dates are: **Oct 3, and Nov. 10, 10pm.**
- You need to put all pages together to make one pdf file and submit online.

Tutorials:

- TA's will analyze some questions.
- TA's will also provide interactive practice problems which everyone needs to attempt. You are encouraged to work in groups of at most 3, and only one solution paper needs to be submitted. You need to include all names and student numbers on it.
- The listed Tutorial Compendium is a proven reference for students: It is a record of all tutorial questions and solutions you may face throughout the term.

Reminder:

- Any uncollected marked works (such as tests, assignments) will be destroyed after the final exam. Any issues with **term grades** must be addressed on or before **Dec 9**.

Copyright Policies:

- "Classroom teaching and learning activities, including lectures, discussions, presentations, etc., by both instructors and students, are copy protected and remain the intellectual property of their respective author(s). All course materials, including PowerPoint presentations, outlines, and other materials, are also protected by copyright 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)."

Additional resources:

- Math Tutoring Centre: https://carleton.ca/math/math-tutorial-centre/
- MS-LAP: Math & Stats Learning Assistance Program supports first year mathematics courses. It helps students achieve their goals by providing learning support and solutions to homework questions.
- Science Student Success Centre: http://sssc.carleton.ca/

Academic Accommodation

Religious obligation: Write 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.
Pregnancy obligation: Write 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, see: http://carleton.ca/equity/accommodation/academic/students/

Students with disabilities requiring academic accommodations in this course must register with the Paul Menton Centre for Students with Disabilities (PMC) for a formal evaluation of disability-related needs. Documented disabilities include but are not limited to mobility/physical impairments, specific Learning Disabilities (LD), psychiatric/psychological disabilities, sensory disabilities, Attention Deficit Hyperactivity Disorder (ADHD), and chronic medical conditions. Registered PMC students are required to contact the PMC every term to have a Letter of Accommodation sent to the Instructor by their Coordinator. In addition, students are expected to confirm their need for accommodation with the Instructor no later than two weeks before the first assignment is due or the first in-class test/midterm. If you require accommodations only for formally scheduled exam(s) in this course, you must request accommodations by the official accommodation deadline published on the PMC website.

Feeling sick? Remaining vigilant and not attending work or school when sick or with symptoms is critically important. If you feel ill or exhibit COVID-19 symptoms do not come to class or campus. If you feel ill or exhibit symptoms while on campus or in class, please leave campus immediately. In all situations, you must follow Carleton's symptom reporting protocols**.**

All members of the Carleton community are required to follow requirements and guidelines regarding health and safety which may change from time to time. For the most recent information about Carleton's COVID-19 response and health and safety requirements please see the University's COVID-19 website and review the Frequently Asked Questions (FAQs). Should you have additional questions after reviewing, please contact covidinfo@carleton.ca.

Self declaration: In place of a doctor's note or medical certificate, students will be advised to complete the self-declaration form available on the Registrar's Office website to request academic accommodation for missed course work including exams and assignments. Students will also be encouraged to connect directly with their instructors to discuss required accommodations arising from the COVID-19 situation.

Important dates: The academic withdrawal date this fall is November 11, 2022.

https://calendar.carleton.ca/academicyear/

Week	**SECTIONS**	**TOPICS**
1	1.1-1.4	Functions, Trigonometry, Appendices ABCD
2	2.1-2.5 3.1-3.3	Limits and continuity, Evaluating and guessing limits at infinity, Derivatives and the Chain rule.
3	3.4 - 3.7	Implicit functions, Derivatives of trigonometric functions, Inverse functions,
4	3.8 - 3.9	Inverse trigonometric functions and their derivatives, L'Hospital's Rule
5	4.1- 4.6 5.1-5.3	Exponentials, logarithms and their derivatives. Curve sketching basics
6	6.1- 6.4	Anti-derivatives, Indefinite integral, Summation, Area, Definite integral, Riemann Integral
7	7.1 - 7.2	Area, Trig identities (review), Integration by substitution (change of variable)
8		October 24-28, Fall break. Classes are suspended
9	7.3	Integration by parts (incl. all subsections)
10	7.4 7.5.1	Integration of Partial fractions, Integration of products of sines and cosines,
11	7.5.2-7.5.3 7.6	Integration of products of secants and tangents Trigonometric substitutions, (incl. all subsections)
12	7.7 7.8	Improper integrals, Area between two curves
13	7.9-7.10	Volumes of solids of revolution, Arc length (if time permits)
14		Review