

MATH 2004D-- Calculus for Engineering – Winter 2021

Instructor	Dr. Eric Hua
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Course Web	culearn
Office Hours	Schedule on cuLearn, or by email (email Subject: MATH 2004D).
Textbook	<u>The ABC's of Calculus, Volume 2</u> , by Angelo Mingarelli, Nolan Company, July 2019 edition will be available in the Carleton University Bookstore at www.carleton.ca/bookstore 613-520-3832 thebookstore@carleton.ca in either digital or softcover format. Please contact the bookstore for orders and pricing.
Classes	Jan 11- Apr 14. Meeting time: Tue & Thu, 16:05-17:25, online. Live Recording schedule and Link will be posted on cuLearn.
Tutorials	DT: Tue. 17:35 - 18:25. Tutorial will start from Jan 22. TA will analyze some questions for you. Tutorial attendance: expected but not graded.

EVALUATION

Your final grade will be calculated as:

2 online tests: 15%+15%

3 assignments 3 x 15 = 45%

Final: 25%

**Details about assignments and tests will be on course website: CuLearn.
Missed tests and assignments will be dealt with at a unique predetermined time before the end of term.**

- **Calculators:** Any.

- **Course Information:**
 - All course related materials (slides, assignments, solutions, grades, announcements) will be posted on cuLearn.
 - It is your responsibility to keep up with information announced in class, on cuLearn, or sent to your Carleton e-mail account.
- **E-mail:**
 - According to Carleton University policy under the Freedom of Information of Privacy Act (FIPPA), Please use your Carleton account ONLY for all course related email, and write your course code on the subject line.
- **Copyright:**
 - **All course related materials (including slides, assignments, solutions, and tests) are intended for personal use only and MAY NOT be reproduced or redistributed without prior written consent of the author(s).**
- **Online proctoring:**
 - Please be aware by registering in this course you acknowledge that this course may use online proctoring tools. These online proctoring tools could require you to identify yourself via webcam. Additionally, while you are completing the proctored exam, your activities will be monitored. This could include direct observation via webcam and through the use of screen recording software. Evidence of academic misconduct during an exam will be treated seriously.

University Policies

- **Academic Integrity:**
 - Students are required to be familiar with Section 10 of the Academic Regulations of Carleton University. All tests, assignments, quizzes, and exams are to be done independently.
 - Academic dishonesty in any form will not be tolerated.
 - Students who violate the standards of academic integrity during a test/examination will receive a grade of zero for that test/examination, and will be required to meet with the Associate Dean of Science for further disciplinary action.
- **Students with disabilities requiring academic accommodations:**
 - Students requiring academic accommodations in this course must contact a coordinator at the Paul Menton Centre for Students with Disabilities to complete the necessary Letters of Accommodation. You must request

accommodations by the official accommodation deadline published on the [PMC website](#).

- **Pregnancy obligation:**
 - For more details see the [Student Guide](#).
- **Religious obligation:**
 - For more details see the [Student Guide](#).
- **Science Student Success Centre:** <http://sssc.carleton.ca/>
- **Important dates:**

February 15-19, 2021: Winter Break. Classes are suspended.

<http://carleton.ca/registrar/registration/dates-and-deadlines/>

Weekly Schedule

(Subject to change)

In the following table, **1 week represents 2 lectures**.

WEEK	HOMEWORK	SECTIONS	TOPICS
1	Set 1 through Set 9	1.1-1.10 2.1-2.6	Vectors: Dot Product, Cross Product, Triple Product; Direction Cosines; Lines and Planes; Rotations of axes and translations in the plane.
2	Set 10 through Set 18	2.7-2.8 2.9-2.10	Planar curves and their parametric representations; Conic sections; Sketching parametric curves. Applications to Area and Length of curves;
3	Set 19 through Set 25	2.11-2.14 3.1-3.3	Polar coordinates, Curve sketching in polar coordinates, Applications Limits; Continuity; Partial Derivatives (Read over Section 3.4 on

			Differentiability for completeness.)
4	Set 27, Set 29, Set 30	3.5 - 3.5.1 3.6	Directional derivatives; Gradients (Read over MVT in 3.5.2 for completeness) The Chain Rule, Implicit differentiation, Tangent planes and normal lines
5	Set 31 - Set 36	3.8 4.1-4.3	Conservative fields, Divergence, and Curl. Line Integrals
6	Set 37 through 39	5.1-5.2.2 5.3	Double Integral, Iterated integrals Applications to Volume under a surface, Volume of solids of revolution, Centroids, and Area of a surface
7	Set 40 and 41	5.4 5.5	Change of variables in double integrals Three dimensional plots
8	Set 42 and 43	5.6 6.1-6.2	Parametric equations of a surface Surface integrals and some applications
9	Sets 44 and 45	6.3 6.4	Green's Theorem Stokes' Theorem
10	Sets 46	6.5-6.6	Triple integrals; Change of variables in triple integrals
11	Set 47	6.7 6.8	Describing solids in cylindrical and spherical coordinates The Divergence Theorem
12	Sets 49 and 50	7.2 - 7.3	Maxima and minima of functions of two variables Lagrange multipliers
13			Review