MATH 1004 – Calculus for Engineering or Physics
Summer 2021

Instructor	Dr. David Amundsen
Email	dave@math.carleton.ca
Office Hours	By appt (pls contact me by email).
Web page	All course materials will be accessible on Brightspace.
Text	*The ABC's of Calculus* (A.B. Mingarelli) http://books.mingarelli.com
Lectures	Tuesday and Thursday 6:30-9:30pm, online via Zoom (will be recorded).
Tutorials	Tuesday and Thursday 5:30-6:30pm online, via Zoom (starting May. 18)
Tutorial Sections	Section A: Last names starting with: **A to J** Section B: Last names starting with: **K to Z**
TAs	Section A: Dinesh Dawonauth DineshDawonauth@cmail.carleton.ca Section B: Basil Mohammad BasilMohammad@cmail.carleton.ca
Tutorial Work	Weekly. To be completed and submitted at end of tutorial on Thursdays.
Problem Sets	Weekly. Available Thursday, due the following Tuesday.
Quizzes	Weekly. Online through Brightspace. Starting week of May 18.
Final[*]	Cumulative exam during July exam period.
Deferrals	Accommodations for missed term work or final exam will be made in accordance with University Policy and may include alternate formats.
Grading	Tutorial Work: 10 % Problem Sets: 20 % Quizzes: 20 % Final: 50 %

[*]- Please note that the final exam in this course will use the BBB e-proctoring service provided by Scheduling and Examination Services. You can find more information at https://carleton.ca/ses/e-proctoring.

Accommodation Policies

- 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 pmc@carleton.ca 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 in-class scheduled test or exam requiring accommodation**. Requests made within two weeks will be reviewed on a case-by-case basis. After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website (www.carleton.ca/pmc) for the deadline to request accommodations for the formally-scheduled exam.

- Accommodations for other reasons such as religious obligation, or parental leave, will be done only in accordance with University policy. These policies are administered by the office of Equity Services.

Topics and Schedule

1. Review of Functions (Ch. 1) ~1 lecture

   - Definition. Inverses, domains.
   - Absolute value.
   - Trig functions and inverses.
   - Exponential and logarithmic functions.

2. Limits and Continuity (Ch. 2) ~1 lecture

   - One and two sided limits.
   - Computing limits.
   - Limits at infinity.
   - Unbounded limits.

3. The Derivative of a Function (Ch. 3,4) ~4 lectures

   - Definition.
   - Product and Quotient Rules.
   - The Chain Rule.
   - Implicit differentiation.
   - Derivatives of trigonometric functions.
   - Derivatives of exponential and logarithmic functions.
   - Derivatives of inverse functions.
   - L'Hospital's Rule.
   - Applications.

4. Integration (Ch. 6) $\sim$ 1 lecture

   - Anti-derivatives, indefinite integrals.
   - Definite integrals.
   - Area under a curve.

5. Techniques of Integration (Ch. 7) $\sim$ 4 lectures

   - Subsitution.
   - Integration by parts.
   - Partial fractions.
   - Integration of trigonometric functions.
   - Trigonometric substitution.
   - Improper integrals.

6. Applications of Integration (Ch. 8) $\sim$ 1 lecture

   - Areas between curves.
   - Volumes of solids of revolution.