MATH 2004/2008 A – Summer 2022

Multivariable Calculus for Engineering or Physics/ Intermediate Calculus

Instructor: Jason Crann
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Course Dates: May 05, 2022 - June 17, 2022.
Lectures: Tuesday/Thursday 18:35-21:25, Minto Centre 2000.
Office Hours: Wednesdays, 12:00-13:00, hosted virtually on Zoom (link TBD).

Tutorial: TBD.
TAs: TBD.

Representative Textbook: Angelo Mingarelli, *The ABC's of Calculus*, volume 2, Nolan Company. For the 2021 digital edition with active hyperlinks, go to mingarelli.com and order it for 120 continuous days for $ 50 (CAD). VISA and Cryptocurrency supported.

Solution Manual:
https://people.math.carleton.ca/ angelo/calculus/ABC-Solutions-Apr22-2021-Pandemic.pdf

Evaluation:

- 2 tests of 50 minutes (during tutorial, dates TBD) - 2x15%;
- 3 assignments (dates TBD) - 3x15%;
- Final exam - 25%.

Assignments: Due 1 week after they are posted. Solutions to be submitted on Brightspace.

Possible Scanning Apps:

- CamScanner;
- TapScanner;
- Adobe scanner.

CamScanner has gotten favourable reviews amongst some Carleton instructors, and it has been used successfully in my previous online courses. Adobe scanner can be installed on mobile phones and it links your scanned items (as a PDF) to your Adobe Reader account on your PC and saves them in the cloud.

Final Exam: Administered in person at a scheduled time to be determined.

Prerequisites:

- Calculus: MATH 1005 or MATH 2007
- Linear algebra: MATH 1104 or MATH 1107.

Students who have not passed the prerequisite courses may be automatically de-registered during the term. Those that have done poorly in the prerequisites are strongly urged to take MATH 1005 before attempting this course.

Approximate Course Outline:

- Week 1 - Curves and surfaces defined by parametric equations, vector geometry.
- Week 2 - Functions of several variables, continuity, partial differentiation, and linear approximations.
- Week 3 - Critical points, level curves, directional derivatives and optimization problems.
- Week 4 - Double and triple integrals, cylindrical and spherical coordinates.
- Week 5 - Change of variables, Jacobians, vector fields.
- Week 6 - Fundamental theorems of vector calculus.

Standards/Expectations:

- Students are expected to attend classes and tutorials. It is your responsibility to keep up with the material.
- Non-programmable calculators may used on tests and the exam, but wireless devices are forbidden.
- Suggest exercises from the textbook will be given. They are not required, but are encouraged to help study.
- I am always happy to answer mathematical questions via email. For administrative questions, I urge you to consider whether I am the right person to ask (e.g., TAs, University Registrar, etc.).

Requests for Academic Accommodation: You may need special arrangements to meet your academic obligations during the term. For accommodation requests, the processes are as follows:

- **Pregnancy obligation:** 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. For more details, visit the Equity Services website: carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf
- **Religious obligation:** 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. For more details, visit the Equity Services website: carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf
- **Academic Accommodations for Students with Disabilities:** If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or pmc@carleton.ca for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam

requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made. carleton.ca/pmc

- **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 is 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: carleton.ca/sexual-violence-support

- **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

- **Deferred Exam:** Students who miss the final exam may be eligible for a deferral. Application for a deferral must be made, with appropriate documentation, to the Registrar's Office within five business days of the examination.