# Carleton University, School of Mathematics and Statistics
# Math 1800A • Introduction to Mathematical Reasoning
# Course Outline • Fall Term 2022


**INSTRUCTOR:** Brandon Fodden *brandon.fodden@carleton.ca*
Office: Herzberg 4356
Office hours: to be announced


**LECTURES:** Wednesdays and Fridays, 11:35 – 12:55 p.m.

**TUTORIAL:** Fridays, 10:35 – 11:25 p.m. in various locations

**PREREQUISITES:** Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005, or equivalent.

**OPTIONAL TEXTS:** *Mathematical Proofs: A Transition to Advanced Mathematics (third or fourth edition)* by Chartrand, Polimeni & Zhang
*Book of Proof (third edition)* by Hammack (free online)

**GRADING SCHEME:**

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|---|---|
| Quizzes (best 8 of 11) | 60% |
| Final exam | 40% |

(see notes below for more details)

**Topics**: Sets; logic; methods of mathematical proof including direct, contraposition, contradiction, and induction; equivalence relations; functions; finite and infinite cardinality; elementary number theory.

**Pregnancy or 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. For more details, see the Student Guide.

**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.

**COMMENTS:**

- Be sure to check your Carleton email address frequently. This is the main way that I can communicate with the entire class quickly. For example, if I am to miss a class due to illness, I would send an email out.
- A Discord server for this course will soon be set up. This will be a place to ask questions to me and other students, and to easily share class notes for any classes you miss. More information on the server will be given soon through an email.
- Assignments will be posted every Friday, but they are not to be handed in. Solutions to the assignments will be posted a few days after the assignment.
- During the tutorial sessions, your TA will be present to work out selected tutorial problems on the board. The first tutorial is on Friday September 16.
- Quizzes will be written each Friday starting September 16 and will be on the material covered on the assignment posted the previous week. The quizzes will be written online. There will be several starting times available in order to accommodate your schedules. More information will be provided by the first class. Each quiz will be open for 35 minutes. The quiz is designed to take about 20 minutes to write, the remaining time provided for scanning and uploading your work. You may access the course material that has been posted to Brightspace during the quiz, as well as your notes and textbooks, but must not communicate with others about the quiz while the quiz is open.
- Quizzes must be submitted as a single PDF file. There are numerous free scanning apps for phones that will allow you to do this. Quizzes must be legible in order to be graded. No provision is made for make-up quizzes. If you must miss a quiz for a valid reason, such as illness, please contact me for accommodation.
- The final exam is a three hour closed book in-person test to be scheduled by the University. The date, time, and location will be announced by the university at some point during the term.
- Students who miss the final exam may be eligible for a deferred exam. Application for a deferral must be made, with appropriate documentation, to the Registrar's Office within three working days after the examination.
- No calculators are permitted (or needed) on the exam.
- Plagiarism and cheating will not be tolerated and can lead to severe penalties – consult the undergraduate calendar.
- Any classes I miss due to illness may be replaced with an online lecture.
- You are expected to attend all lectures (unless you are ill – see below). If you miss a lecture, it is your responsibility to understand all material from that lecture, and to get any information given.
- Please do not attend class if you are sick, even if you are sure that it's "just a cold." If you miss classes due to illness, you can ask your classmates for the class notes on the course Discord server.
- Student or professor materials created for this course (including any posted notes, tutorials, assignments, quizzes, and tests) remain the intellectual property of the author(s). They are intended for personal use and may not be reproduced or redistributed without prior written consent of the author(s).

**EXTRA HELP:**
There is help available for this course. It is up to you to seek any help you may need. Please do not hesitate to take advantage of the help being offered – that's why it's there! Here is a summary of the help available:

- Class tutorial (see first page)
- Your TA (email)
- My office hours, or email
- MS-LAP (The Math & Stats Learning Assistance Program is a free of charge program that 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.)
- Math Tutorial Centre in 3422 HP; See carleton.ca/math/math-tutorial-centre/ for the schedule.
- Your classmates

**A NOTE FROM CARLETON ABOUT COVID:**

It is important to remember that COVID is still present in Ottawa. The situation can change at any time and the risks of new variants and outbreaks are very real. There are a number of actions you can take to lower your risk and the risk you pose to those around you including being vaccinated, wearing a mask, staying home when you're sick, washing your hands and maintaining proper respiratory and cough etiquette.

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.

Masks: Carleton has paused the COVID-19 Mask Policy, but continues to strongly recommend masking when indoors, particularly if physical distancing cannot be maintained. It may become necessary to quickly reinstate the mask requirement if pandemic circumstances were to change.

Vaccines: Further, while proof of vaccination is no longer required as of May 1 to attend campus or in-person activity, it may become necessary for the University to bring back proof of vaccination requirements on short notice if the situation and public health advice changes. Students are strongly encouraged to get a full course of vaccination, including booster doses as soon as they are eligible, and submit their booster dose information in cuScreen as soon as possible. Please note that Carleton cannot guarantee that it will be able to offer virtual or hybrid learning options for those who are unable to attend the campus.

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*.