

## **BIT 1000A Mathematics 1 for NET Fall 2020**

**Textbook:** there is no textbook for the course. We will follow closely the material from <http://www.saylor.org/courses/ma005> and <http://www.saylor.org/courses/ma101>. For your convenience, the relevant chapters are put in the folders MA005 and MA101 in cuLearn. This course will be delivered online using the BigBlueButton (BBB) in cuLearn. My lectures will be recorded and posted on cuLearn so that you can review them later.

To access your courses on cuLearn go to <http://carleton.ca/culearn>. For help and support, go to <http://carleton.ca/culearn/students>. Any unresolved questions can be directed to Computing and Communication Services (CCS) by phone at 613-520-3700 or via email at [ccs\\_service\\_desk@carleton.ca](mailto:ccs_service_desk@carleton.ca).

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**Instructor:** [Jason Z. Gao](#)

**Office hours (tentative):** Monday and Friday 11:00--12:00.

**Email:** [zgao@math.carleton.ca](mailto:zgao@math.carleton.ca)

**Lectures:** Monday and Wednesday 8:35--9:55, using BigBlueButton (BBB) in cuLearn.

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**Tutorials:** Wednesdays 11:35—12:25. Tutorials begin on **SEPT 23**.

**TA:** Arogya Dahal, [arogyadahal@cmail.carleton.ca](mailto:arogyadahal@cmail.carleton.ca)

Tutorials will be run by the TA using **BBB**. You will work on some problems related to the material covered in lectures. Those problems are of the following three types: multiple choice, short answer, and detailed answers. Problems requiring detailed answers need to be done and submitted manually. Please view the video posted on cuLearn for instructions on how to scan and submit your answer.

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## **General Information**

### **BIT 1000 [0.5 credit]**

#### **Mathematics I for NET**

Tailored for students in the Network Technology program, this course covers basic concepts in functions and introduces concepts of limits, derivatives and rules of differentiation, applications of differentiation (max-min problems, curve sketching) and integration.

Includes: Experiential Learning Activity

Precludes additional credit for [BIT 1100](#), [BIT 1200](#), [ECON 1401](#), [ECON 1402](#), [MATH1002](#), [MATH 1004](#), [MATH 1007](#), [MATH 1009](#), [MATH 1052](#), [MATH 1401](#), [MATH 1402](#).

Prerequisite(s): restricted to students in the B.I.T. degree program.

## Grading :

- Final Exam 30%
- Tests  $3 \times 13\% = 39\%$
- Tutorials  $8 \times 3\% = 24\%$
- Exercises 7%

**No makeup tests or tutorials will be given. The weight of missing tests will be shifted to the final exam. Missing tutorials and exercises receive 0.**

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**Practice problems.** Some suggested practice problems are selected from the reference book. You will also be given some exercises after lectures and they contribute to your final grade. The exercises, tutorials, tests, and exam problems will be similar to the practice problems.

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### Tentative weekly lecture schedule

Date	Topic	Section	Tutorial
Sep. 09	Preview of calculus; Lines in the plane	(MA005) 1.1, 1.2	
Sep. 14, 16	Functions and their graphs, Combinations of functions, Tangent lines, velocities, and growth rate.	(MA005) 1.3, 1.4, 2.1	
Sep. 21,23	The limit of a function; Properties of limits.	(MA005) 2.2, 2.3	Tutorial 1
Sep. 28,30	Continuous functions; Derivatives.	(MA005) 2.4, 3.1, 3.2	Tutorial 2
Oct. 05, 07	Rules for computing derivatives, trigonometric functions, higher derivative	(MA005) 3.3, 3.4, (MA101) 4.1	<b>Test 1</b>
Oct. 14	Derivatives of trigonometric functions, exponential and logarithmic functions.	(MA101) 4.2-4.7	Tutorial 3
Oct. 19,21	The chain rule, Some applications of the chain rule; implicit and logarithmic differentiation	(MA005) 3.5, 3.6, 3.10	Tutorial 4
Oct. 26, 30	Fall break		No class
Nov. 02,04	Finding maximums and minimums; The first derivative and the shape of a function	(MA005) 4.1, 4.3	<b>Test 2</b>
Nov. 09,11	The second derivative and the shape of a function; Applied maximum and minimum problems	(MA005) 4.4, 4.5	Tutorial 5

Nov. 16, 18	Infinite limits and asymptotes	(MA005) 4.6	Tutorial 6
Nov 23, 25	Antiderivatives and integrals; The fundamental theorem of calculus	(MA101) 7.1, 7.2	<b>Test 3</b>
Nov. 30, Dec. 02	Some properties of integrals; Integration by substitution	(MA101) 7.3, 8.1	Tutorial 7
Dec. 07, 09	Integrals of trigonometric functions, Practice problems for the exam.	(MA101) 8.2	Tutorial 8

You may need special arrangements to meet your academic obligations during the term. For an accommodation request the processes are as follows:

**Pregnancy obligation:** write to 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 visit the Equity Services website: <http://www2.carleton.ca/equity/>

**Religious obligation:** write to 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 visit the Equity Services website: <http://www2.carleton.ca/equity/>

**Academic Accommodations for Students with Disabilities:** 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](mailto: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 (*if applicable*). After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website for the deadline to request accommodations for the formally-scheduled exam (*if applicable*) at

<http://www2.carleton.ca/pmc/new-and-current-students/dates-and-deadlines/>

You can visit the Equity Services website to view the policies and to obtain more detailed information on academic accommodation at <http://www2.carleton.ca/equity>