

# Mathematics I for IMD (BIT 1100 A, Fall 2021)

**Instructor: Dr. Gang Li**

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<https://brightspace.carleton.ca/d2l/home>

## Class Schedule

Class Times:	Monday & Wednesday	8:35 am - 9:55 am	Brightspace
Tutorial Times:	Mondy	12:35 pm - 1:25 pm	Brightspace
Office Hours:	Wednesday	8:35 am - 9:55 am	Brightspace
	Or by appointment.		

## Marking Scheme

Assignment	5	20% total
In Tutorial Tests	4 ( count best 3 out of 4)	40% total
Final Exam		40%

## Text Book

Elementary Calculus with Applications, (Any edition). By *E. Devdariani*. (Hard copies available at the Carleton University Bookstore and [Haven Books](#).)

**Prerequisite**

Ontario Grade 12 Mathematics: Advanced Functions and Introductory Calculus; or an OAC in Calculus; or MATH 0007; or equivalent.

**List of Topics**

- **Elementary Functions (Ch 1)** 1.1. Definition, domain range. 1.2 Algebra of functions. 1.3 Transformation of graphs.  
1.4 Polynomial, rational, power functions. 1.5 Exponential functions. 1.6 Logarithmic functions.
- **Limits (Ch 2)** 2.1 The limit of a function at a point. 2.2 Properties of limits. 2.3 Limits at infinity.  
2.4 Continuous functions. The Intermediate Value Theorem.
- **The Derivative and Rules of Differentiations (Ch 3)** 3.1 The derivative as the rate of change and as the slope of the graph of a function. 3.2 Basic rules of differentiation. Power Rule. Product and Quotient Rules. Chain Rule. Implicit differentiation. 3.3. Higher order derivatives.
- **Applications of the Derivative (Ch 4)** 4.1 Determining the intervals where a function is increasing/decreasing. 4.5 Maximum and minimum values. 4.6 Second derivative. 4.7 Curve sketching. 4.8 Optimization problems. 4.9 Exponential models (continuously compounded interest, exponential growth and decay, learning curves).
- **Integration (Ch 6)** 6.1 Antiderivative. Basic rules of integration. 6.2 Integration by substitution. 6.3 The definite integral. 6.4 The Fundamental Theorem of Calculus. 6.5 Evaluation of definite integrals.
- **Trigonometry (Appendix, will be posted on Brightspace)** 1. Definition, domain and range of trigonometric functions. 2. Some trigonometric identities and formulae. 3. Differentiation of trigonometric functions. 4. Integration of trigonometric functions.

## Course Policies

- **Class:** The first class(September 8, 2021) and the last class (December 10, 2021) will be synchronous classes, all other classes will be asynchronous classes, lecture videos will be posted before the scheduled class time.
- **Tutorial :** You are required to attend all tutorials.
  - ✓ During the tutorial, the TA will go through examples of some challenging questions that appear on the assignments/tests.
  - ✓ **First day of tutorials is September 20, 2021.**
- There will be **5 assignments**.
  - ✓ Assignments are due **each Friday at 11:59pm**.
  - ✓ **No late assignments will be accepted. No E-mail submission is accepted.**
  - ✓ You need to submit a pdf file to Brightspace. Detailed instruction will be given in the assignment.
  - ✓ In case some students have difficulty to submit their assignment electronically, you may try these two apps: CamScanner and TapScanner. These apps can help you scan your assignment with a smart phone.
- **In Tutorial Tests** will be **four 50-minutes, closed book** tests given during regular tutorial session on **Monday, Sept 27, Oct 18, Nov 8, Nov 22, 2021**.
  - ✓ The four tests worth 40% of your total grade.
  - ✓ **No make up, early, or delayed tests.** Because we do not have the resources to provide such tests. This lack of the resources for make-up tests is the reason why the students are allowed to miss one test without penalty. The instructor reserves the right not to answer the individual emails concerning make-up tests.
  - ✓ The average of the best 3 tests will be used to determine the test component of your total mark 40%.
- **Checking the Test/Assignment Grades:**

- ✓ It is your responsibility to make sure that your test/assignment marks recorded correctly by visiting [Brightspace](#) .
- ✓ Deadline to make any corrections on your test/assignment marks is within one week when you receive them.
- **Final Exam** will be 3-hours, closed book exam based on whole term.
  - ✓ The questions will be similar to those seen on the tests, tutorials, and in the homework assignments.
  - ✓ It is the responsibility of each student to be available at the time of the examination. In particular, no travel plans for the examination period in **December, 2021** should be made until the examination schedule is published.
  - ✓ Students wishing to see their examination papers must make an appointment within three weeks of the examination to do this. **This examination review is for educational purposes only and NOT for negotiation of your grade. Please remember that we do not change your grade on the basis of your needs (such as scholarships, etc).**
- **Passing Conditions:** Students who **fail to achieve a term mark of at least 40% OR fail to achieve a minimum mark of 40% on the final exam** will automatically be assigned a grade of F in the course. Exceptions to this rule may be made at the discretion of the instructors.
- **Missing test:**
  - ✓ Students who must miss a test must inform me prior to the test and provide supporting documentation within one business day of the test date. If you provide adequate documentation (doctor's note, etc), then the weighting of that test will be placed on the final exam, otherwise a mark of 0 will be given for the test/quiz.
  - ✓ The total weight of missing test transferred to final exam must be less than 20% of total mark.
- **Homework:** Students are expected to do every exercise from the textbook. These exercises are not to be handed in and will not be graded. However, in order to succeed in the course, it is **ABSOLUTELY ESSENTIAL** that you do the exercises on a regular basis.

- **Calculators:** Only non-programmable calculators are allowed for tests and the final exam. I reserve the right to confiscate any calculator during a test or final exam.
- **Course Information:** All course related materials (slides, video, assignments, tests, final exam, solutions, grades, announcements) will be posted on [Brightspace](#).
  - ✓ It is highly recommended that you print the slides and bring them in as we will be discussing all of the content presented in the slides.
  - ✓ It is your responsibility to keep up with information announced in class, on [Brightspace](#), 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.
  - ✓ Write your course code **BIT 1100 A** on the subject line. Failing to start your heading with the course code might send your e-mail to the spam folder.
  - ✓ Be patient. Don't expect an immediate response. Please allow 24-48 hours for a reply.
- **Copyright:** All course related materials (including slides, videos, assignments, tests, solutions, and tests) are intended for personal use only and **MAY NOT be reproduced or redistributed without prior written consent of the author(s)**.
- **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 in this course must contact a coordinator at the Paul Menton Centre for Students with Disabilities to complete the necessary Letters of Accommodation. After registering with the PMC, make an appointment to meet and discuss your needs with me in order to make the necessary arrangements as early in the term as possible. Please note the deadline for submitting completed forms to the Paul Menton Centre is **Nov 12, 2021**. For more details visit the [PMC website](#).
- **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](#).
- **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](#).

### Extra Help Options

- **Math Tutorial Center:** There is a mathematics and statistics help centre located at 1160HP. For information visit the website <http://www5.carleton.ca/math/handbook-2/tutorial-centre/>
- **MS-LAP:** Online support is available for this course through MS-LAP. You should automatically be registered in MS-LAP via CuLearn. You have access to online tutorial videos free of charge. For more information and tutorials on how to access MS-LAP, please see: <https://carleton.ca/math/math-learning-assistance-program/>

### Important Dates

- **Tests:** *Monday, Sept 27, Oct 18, Nov 8, Nov 22, 2021, 12:35pm to 1:25pm.*
- **Withdrawal:** The last day for academic withdrawal from the course is *December 10, 2021.*
- For more information, please visit [Dates and Deadlines](#).

*The End*

*Last modified: August 26, 2021, 12:30*