

MATH 110 - 003 - Calculus I - Fall 2018
Course Information

Instructor: Daniel Drimbe
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Lectures: MWF 10:30 am - 11:20 am, CL 130
Laboratory: W 12:30 pm - 1:20 pm, CL 125
Office Hours: MW 11:30 am - 12:30 pm, or by appointment

Purpose of Class: This is the first calculus class for students who plan to take more than one calculus class. It is a required class for students in mathematics, statistics, actuarial science, engineering, and most programs in the Faculty of Science.

Prerequisites: PreCalculus 30 with a grade of at least 75 percentage, or Calculus 30, or Mathematics B30 and C30 with a grade of at least 65 percentage in each, or Mathematics 102.

Textbook: James Stewart, "Calculus", 8th edition. There is also a lab manual, which is available as a PDF file to download freely from UR Courses.

Quizzes: There will be 5 quizzes, 20 minutes in duration, which will be held during the lab hours on the following dates:

- September 19
- October 3
- October 24
- November 7
- November 24

Only the top four grades will be used for the final grade.

Midterm Exam: There will be two midterm exams, which will be held during the lab hours on the following dates:

- October 17
- November 14

Final Exam: The final exam will be on December 14, 7:00 pm - 10:00 pm. The final exam will be cumulative.
You have to bring an ID for midterms and final exam.

Grading: Your final grade is comprised of: Quizzes: 20%; Midterm: 30%(15% + 15%); Final Exam: 50%.

Calculators: The use of any type of calculators or electronic device is not allowed in any of the quizzes, midterm and final exam.

Special Need students: Any student with a disability who may need accommodations should discuss these with the course instructor after contacting the Centre for Student Accessibility, RC 251.15, at 585-4631.

Detailed description: *Calculus* by James Stewart, 8th edition.

CHAPTER 1: Functions and Limits	Sections
• The tangent and velocity problems	1.4
• The limit of a function	1.5
• Calculating limits and the limit laws	1.6
• The precise definition of a limit	1.7 (will be skipped)
• Continuity	1.8
CHAPTER 2: Derivatives	
• Derivatives and rates of change	2.1
• The derivative of a function	2.2
• Differentiation formulas	2.3
• Derivatives of trigonometric functions	2.4
• The chain rule	2.5
• Implicit differentiation	2.6
• Rates of change in the natural and social sciences	2.7
• Related rates	2.8
• Linear Approximations and Differentials	2.9
CHAPTER 3: Applications of Differentiation	
• Maximum and minimum values	3.1
• The mean value theorem	3.2
• How derivatives affect the shape of a graph	3.3
• Limits at infinity; horizontal asymptotes	3.4
• Summary of curve sketching	3.5
• Optimization problems	3.7
• Antiderivatives	3.9
CHAPTER 4: Integrals	
• Areas and distances	4.1
• The definite integral	4.2
• The fundamental theorem of calculus	4.3
• Indefinite integrals	4.4
• The substitution rule	4.5
CHAPTER 5: Application of Integration	
• Areas between curves	5.1