General information.

- **Instructor:** Vincent Alberge  
  Email: valberge@fordham.edu  
  Phone: 718-817-3298  
  Office: JMH 420  
- **Class meetings:** 1:00–4:00pm, MTWR in TBA.  
- **Office hours:** 4:30–5:30pm on Wednesdays & Thursdays and by appointment. Moreover, feel free to email me at any time.  
- **Textbook:** Calculus; Single Variable Calculus, J. Stewart, 8th Ed.

**Course description.** Topics include: functions, limits, continuity, Intermediate Value Theorem, the derivative, its interpretations, and rules for computation, differentiation of trigonometric functions, applications to curve sketching and optimization problems, antiderivatives and initial value problems, Riemann sums, definite integrals, and the Fundamental Theorem of Calculus.

This course will mainly cover topics from Chapter 1 to 6 of the textbook. Moreover, if time permits, we will introduce the notion of infinite sequences.

More precisely, this course will follow the following order:

(1) The tangent and velocity problem  
(2) Limit of a function and limit laws  
(3) Precise definition of the limit  
(4) Continuity  
(5) Derivatives and rate of changes  
(6) Differentiation formulas  
(7) Derivatives of trigonometric functions  
(8) The chain rule  
(9) Implicit differentiation  
(10) Related rates  
(11) Linear approximation and differentials  
(12) Extreme values and mean value theorem  
(13) How the derivative affects the shapes of graphs  
(14) Limits at infinity, curve sketching  
(15) Optimization problems  
(16) Antiderivatives  
(17) Areas under a curve  
(18) Definite integrals  
(19) Fundamental Theorem of Calculus  
(20) Indefinite integrals  
(21) Substitution rule  
(22) Inverse functions and their derivatives  
(23) Natural logarithm, logarithmic differentiation  
(24) Exponential function
Homework. Every week, two homework will be assigned. There will be of two kinds. One kind will be online through WeBWorK. The other kind will be “offline” and not graded and will be posted on the “blackboard.” I will post the solution of the offline homework at the end of each week.

Last but not least, the lowest homework grade will be dropped.

You are encouraged to discuss homework problems in groups and help each other. Anyway, at the beginning and at the end of each class we gonna go over some exercises.

Quiz. There will be at least four 15-20 min pop quizzes during class. So, at least once a week. Quiz problems will be based on lecture topics of the previous day. Moreover, there will be no make-up and the lowest quiz grade will be dropped.

Grading. Grades will be determined as follows.

- **Quizzes:** 10%
- **Homeworks:** 15%
- **Midterm I:** 20%
- **Midterm II:** 20%
- **Final exam:** 35%

Tentative Exams Schedule. There will be two Midterm exams and one Final exam.

- **Midterm I:** Thursday, June 6th, during class.
- **Midterm II:** Tuesday, November 18th, during class.
- **Final:** Thursday, June 27th, TBA.

Important dates.

- **First day of class:** Tuesday, May 28th.
- **Last day of class:** Wednesday, June 26th.

Calculator and computer. Only four function or scientific calculators are permitted on homeworks, midterm exams and final exams.

Disability. Under the Americans with Disabilities Act and Section 504 for the Vocational Rehabilitation Act of 1973, all students, with or without disabilities, are entitled to equal access to the programs and activities of Fordham University.

Moreover, if you believe that you have a disability that may interfere with your ability to participate in the activities, coursework, or assessment of the object of this course, please schedule a meeting to speak with someone at the Office of Disability Services (Rose Hill campus, O’Hare Hall, lower level, phone: 718-817-0655).

Academic Integrity. Cheating and plagiarism will not be tolerated. Students violating the University academic integrity policy will incur sanction depending on the severity of the infraction. For more details, please read this.

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1It is free!