

MATH-UA.0131-011 Math for Economics

Coordinator: Liming Pang (✉ lp1344@nyu.edu)

Learning Objectives

By the end of Math for Economics I, a student should know the principal results of single and several variable Calculus, including calculation of derivatives, partial derivatives of both explicit and implicit functions and solving optimization problems including optimization problems by substitution. A student should be able to apply calculus to different comparative static problems to find maxima and/or minima of functions of single or several variables.

Course Material and Websites

WebAssign and Textbook

The course will closely follow the textbook *Essential Calculus, Early Transcendentals*, Second Edition, by James Stewart.

The course also requires a subscription to Cengage WebAssign for our textbook. Please note that the WebAssign subscription includes digital access to the textbook. (Meaning: You do NOT need to buy a separate hard copy of the textbook, unless you want to.) WebAssign as well as the book are available from the NYU Bookstore.

There will be assignments in WebAssign that you need to complete after learning each section.

NYU Brightspace

Our main course website will be on NYU Brightspace. You can find the syllabus and course material there

Gradescope

Written homework will be posted on Gradescope, and you will also submit your solutions there.

Instructors and Sections

Section	Time	Location	Instructor
001	Tue. Thu 16:55—18:10	5WP 101	Trushant Majmudar
006	Mon. Wed. 08:00—09:15	SILV 207	Trushant Majmudar
011	Tue. Thu. 15:30—16:45	5WP 101	Liming Pang

Lectures will meet twice a week for 75 minutes. There is a mandatory 75-minute recitation session. You must register for lecture and recitation separately.

Course Content and Weekly Topics

This is a sample schedule. Your actual schedule may be slightly different, but the topics covered will remain the same.

- Week 1: Introduction. Functions.
- Week 2: Limits, continuity.
- Week 3: Limits involving infinity.
- Week 4: Derivatives, basic differentiation formulas.
- Week 5: Product, quotient, and chain rule.
- Week 6: Implicit differentiation. Linear approximation
- Week 7: Inverse functions. *Midterm 1.*
- Week 8: Exponentials and logarithms. Applications.
- Week 9: Extrema. MVT.
- Week 10: Variations and concavity. Applications.
- Week 11: More applications. *Midterm 2.*
- Week 12: Functions of several variables.
- Week 13: Partial derivatives. Linear approximation.
- Week 14: Local and global extrema.
- Week 15: Catch-up and review.

Grades

Your course score will be determined as the following weighted average:

Midterm I	Midterm II	Final Exam	Written Homework	WebAssign assignments	Quizzes
20%	20%	30%	10%	10%	10%

We will convert your course score to a letter grade beginning with the values below as cutoffs. These cutoffs might be adjusted at the end of the semester (the so-called “curve”), but only in the direction to make letter grades higher.

- 93% A
- 90% A-
- 87% B+
- 83% B
- 80% B-
- 75% C+
- 65% C
- 50% D

Exams and Quizzes

Exam Dates

Section	Midterm I	Midterm II	Final
001	Thu. 03/13/2025, in class	Thu. 04/10/2025, in class	TBD
006	Wed. 03/12/2025, in class	Wed. 04/09/2025, in class	TBD
011	Thu. 03/13/2025, in class	Thu. 04/10/2025, in class	TBD

Please note the date of the final and plan your travel accordingly. There will absolutely be NO MAKEUP exam because you found cheap tickets before the day of your final exam and decided to leave. It will be considered as absence from the exam, and you will get 0 for the exam.

Exams will contain a mixture of computational and conceptual problems. Some of them will resemble homework problems, while some will be brand new to you. The final exam is likely to be a mixture of multiple choice and free response problems.

Quizzes

Quizzes will also be given weekly during almost every recitation session. **Your TWO lowest quiz grades will be dropped.**

We may approve out-of-sequence/makeup Midterm Exams or Quizzes only in the following cases:

1. A documented medical excuse
2. A University-sponsored event such as an athletic tournament, a play, or a musical performance. Athletic practices and rehearsals do not fall into this category. Please have your coach, conductor, or other faculty advisor contact your instructor.
3. A religious holiday as recognized by NYU policy.
4. Extreme hardship such as a family emergency.

Note: We will not be able to accommodate out-of-sequence exams, quizzes, and finals for purposes of more convenient travel, including already purchased tickets.

Scheduled out-of-sequence exams (those not arising from emergencies) must generally be taken *before* the actual exam. Makeups that are due to emergencies must occur within one week of the regularly scheduled exam or quiz, otherwise a zero score will be given.

If you require additional accommodations as determined by the Center for Student Accessibility, please make those arrangements and let your instructor know as soon as possible. Due to logistical reasons, such accommodations will be given for the Exams, and you can take them at the Moses Center. Quizzes cannot be taken at the Moses Center. There is no accommodation for the homework or WebAssign.

Assignments

There are two media for homework in Math for Economics I: “WebAssign” and “Weekly Written Homework”.

WebAssign

There will be assignments administered through WebAssign (please see the WebAssign link to find out how to buy WebAssign). WebAssign problems are computational in nature and assess the mathematical techniques introduced in class. You will get immediate feedback on your progress and will get several chances to ensure it. WebAssign will be available directly through the course’s NYUClasses page. All WebAssign assignments are equally weighted.

In fairness to fellow students, WebAssign assignments will not be extended for individual students. Because sometimes things more important than math homework come up, your THREE lowest WebAssign scores will be dropped.

Written Homework

There will also be weekly written assignments to master the mathematical concepts and the link between these concepts and their applications to economics. These assignments will require more than just procedure, might connect two or more things together, and will more closely resemble the harder exam problems. Written homework assignments will be posted on Gradescope. All written assignments are equally weighted.

Gradescope: It is a portal that handles written HW. You must upload all your work as a SINGLE PDF FILE on Gradescope. First, make an account (free) with the same username as your netid i.e. use the same email address to create an account. ONLY HW uploaded on Gradescope will be graded. Do NOT send it to myself or the TAs directly.

In fairness to fellow students and to graders, late homework will NOT be accepted for any reason. They are open for a week. Something happening on the day of the deadline is not a valid reason for extensions. In lieu of missed homework, your TWO lowest written homework score will be dropped.

You may work in groups on the homework assignments. Collaboration is a big part of learning and of scholarship in general. However, each student must turn in his or her own write-up of the solutions.

Tutoring

1. **The Mathematics Department Undergraduate Tutoring Center**
<https://math.nyu.edu/dynamic/undergrad/ba-cas/tutoring/>
2. **The University Learning Center**
<https://www.nyu.edu/students/academic-services/undergraduate-advisement/academic-resource-center/tutoring-and-learning.html>