MATH 113: Finite Mathematics and Calculus I
Fall 2025 Course Syllabus

NJIT Academic Integrity Code: Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at: NJIT Academic Integrity Code.

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu

COURSE INFORMATION

Course Description: An introduction to differential and integral calculus. Applications include area, volumes, curve lengths, surface area, centroids, and moments. Focus is on application throughout the course.

Number of Credits: 3

Prerequisites: (Intended for Architecture students.) MATH 107 with a grade of C or better, or MATH 110 with a grade of C or better, or NJIT placement.

Course-Section and Instructors:

Course-Section	Instructor
Math 113-001	Professor M. Ampe Mohottige Dona

Office Hours for All Math Instructors: Tuesday 10.00am - 12.00pm

Required Textbook:

Title	*Calculus and Its Applications*
Author	Bittinger
Edition	12th
Publisher	Pearson

ISBN #	978-0135164884

University-wide Withdrawal Date: The last day to withdraw with a **W** is **Monday, November 10, 2025**. It will be strictly enforced.

POLICIES

DMS Course Policies: All DMS students must familiarize themselves with, and adhere to, the Department of Mathematical Sciences Course Policies, in addition to official university-wide policies. DMS takes these policies very seriously and enforces them strictly.

Grading Policy: The final grade in this course will be determined as follows:

Quizzes	20%
Midterm Exam I	25%
Midterm Exam II	25%
Final Exam	30%

Your final letter grade will be based on the following tentative curve.

A	90 - 100	**C**	70 - 74
B+	85 - 89	**D**	60 - 69
B	80 - 84	**F**	0 - 59
C+	75 - 79		

Attendance Policy: Attendance at all classes will be recorded and is **mandatory**. Please make sure you read and fully understand the Math Department's Attendance Policy. This policy will be strictly enforced.

Religious Observance: NJIT is committed to supporting students observing religious holidays. Students must notify their instructors in writing of any conflicts between course requirements and religious observances, ideally by the end of the second week of classes and no later than two weeks before the anticipated absence.

Homework: All homework assignments are online using MyLab Math, which is linked directly from Canvas. They are DUE at the dates and times specified online. Students are required to work through the problems assigned for each section to gain a better understanding of the course material. You do not have to provide an access code or payment information when you enroll the first time, MyLab Math gives you free access to homework and the eBook for two weeks. Your 14-day free trial period begins on the day you click Start Free Trial on the Purchase Materials page.

Quizzes: Quizzes will be given approximately once a week throughout the semester. They will be based on the lecture, homework, and in-class discussions. Quizzes will sometimes be assigned through MyLab Math or Canvas and students will be expected to complete the quiz online.

Exams: There will be two midterm exams held in class during the semester and one comprehensive final exam. The following exam periods are tentative and therefore possibly subject to change:

Midterm Exam I	TBA
Midterm Exam II	TBA
Final Exam Period	December 14 - December 20, 2025

The final exam will test your knowledge of all the course material taught in the entire course. Make sure you read and fully understand the Math Department's Examination Policy. This policy will be strictly enforced.

Makeup Exam Policy: There will be **NO MAKE-UP QUIZZES OR EXAMS** during the semester. In the event an exam is not taken under rare circumstances where the student has a legitimate reason for missing the exam, the student should contact the Dean of Students office and present written verifiable proof of the reason for missing the exam, e.g., a doctor's note, police report, court notice, etc. clearly stating the date AND time of the mitigating problem. The student must also notify the Math Department Office/Instructor that the exam will be missed.

Cellular Phones: All cellular phones and other electronic devices must be switched off during all class times.

ADDITIONAL RESOURCES

Math Tutoring Center: Located in the Central King Building, Lower Level, Rm. G11 (See: Fall 2025 Hours)

Further Assistance: For further questions, students should contact their instructor. All instructors have regular office hours during the week. These office hours are listed on the Math Department's webpage for Instructor Office Hours and Emails.

Accommodation of Disabilities: The Office of Accessibility Resources and Services (OARS) offers long term and temporary accommodations for undergraduate, graduate and visiting students at NJIT.

If you need accommodation due to a disability, please contact the Office of Accessibility Resources and Services at oars@njit.edu, or visit Kupfrian Hall 201 to discuss your specific needs. A Letter of Accommodation Eligibility from the office authorizing student accommodations is required.

For further information regarding self identification, the submission of medical documentation and additional support services provided please visit the Office of Accessibility Resources and Services (OARS) website at:

https://www.njit.edu/accessibility/

Important Dates (See: Fall 2025 Academic Calendar, Registrar)

Date	Day	Event
September 1, 2025	Monday	Labor Day
September 2, 2025	Tuesday	First Day of Classes
September 8, 2025	Monday	Last Day to Add/Drop Classes

November 10, 2025	Monday	Last Day to Withdraw
November 25, 2025	Tuesday	Thursday Classes Meet
November 26, 2025	Wednesday	Friday Classes Meet
November 27 to November 30, 2025	Thursday to Sunday	Thanksgiving Recess - Closed
December 11, 2025	Thursday	Last Day of Classes
December 12, 2025	Friday	Reading Day 1
December 13, 2025	Saturday	Saturday Classes Meet
December 14 to December 20, 2025	Sunday to Saturday	Final Exam Period

Course Outline

This outline is subject to change throughout the semester. A weekly Outline will be posted on Canvas homepage.

All homework assignments are online using MyLab Math.

Lecture	Section	Topic
1		* Review of Basic Algebra
2	Apdx A	* Exponents, Factoring, Solving Equations
	R.1 - R.4	* Graphs of Lines
3	R.2 - R3	* Functions - Domain and Range
4	R.5	* Nonlinear functions and solving systems of equations
5	1.1 - 1.2	* Limits (graphically & algebraically)
6	1.3 - 1.4	* Average Rate of Change - Definition of the Derivative
7	1.5	* Power and Sum Rules
8	1.6	* Product and Quotient Rules
9	1.7	* Chain Rule

10	1.8	* Higher Order Derivatives
11	**REVIEW**	
12	**EXAM #1**	
13	2.1	* Exponential and Logarithmic Functions
14	2.2 - 2.3	Derivatives of Exponential Functions (Base e) - Natural Logarithmic Functions
15	2.4 - 2.5	* Applications of Exponential and Log Functions
16	2.6	* Derivatives of Log Functions of Other Bases
17	3.1 - 3.2	* First Derivative Test for Extrema - Second Derivative Test
18	3.3-	* Graphing Rational Functions
19	3.4	* Absolute Max and Mins
20	3.5	* Applied Optimization
21	**REVIEW**	
22	**EXAM #2**	
23	3.8 - 3.9	* Implicit Diff. - Related Rates
24	4.1 - 4.2	* Anti-Differentiation
25	4.3	* Area and Definite Integrals
26	4.4	* Fundamental Theorem of Calc.
27	4.5	* Integration by Substitution
28		Review for Final Exam
29		**FINAL EXAM**