

## MATH 138: General Calculus I

### *Fall 2022 Course Syllabus*

**NJIT Academic Integrity Code:** All Students should be aware that the Department of Mathematical Sciences takes the University Code on Academic Integrity at NJIT very seriously and enforces it strictly. This means that there must not be any forms of plagiarism, i.e., copying of homework, class projects, or lab assignments, or any form of cheating in quizzes and exams. Under the University Code on Academic Integrity, students are obligated to report any such activities to the Instructor.

### COURSE INFORMATION

**Course Description:** Intended for students who are not in Science or in Engineering. An introduction to differential and integral calculus of a single variable.

**Number of Credits:** 3

**Prerequisites:** **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 138-001	Professor I. Zarate
Math 138-005	Professor I. Zarate

**Office Hours for All Math Instructors:** [Fall 2022 Office Hours and Emails](#)

**Required Textbook:**

<b>Title</b>	<i>Calculus: Concepts and Contexts bundled w/ WebAssign</i>
<b>Author</b>	Stewart
<b>Edition</b>	4th
<b>Publisher</b>	Cengage
<b>ISBN #</b>	978-1337877367 (WebAssign w/ e-book) 978-0357014356 (WebAssign w/ LL) 978-0357700006 (Cengage Unlimited)

**University-wide Withdrawal Date:** The last day to withdraw with a M is **Monday, November 14, 2022**. 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:

Homework	15%
Quizzes	15%
Midterm Exam I	20%
Midterm Exam II	20%
Final Exam	30%

Your final letter grade will be based on the following tentative curve. Note: This course needs to be passed with a grade of C or better in order to proceed to [Math 238](#) or [Math 246](#).

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. Each class is a learning experience that cannot be replicated through simply "getting the notes."

**Homework Policy:** Homework is an expectation of the course. The problems listed in the syllabus are to be handed in. There will be additional homework on WebAssign. Deadlines will be enforced. If you have any difficulties with registering and getting an account with WebAssign please see the professor immediately.

**Quiz Policy:** There will be frequent quizzes given throughout the semester. They will be based on the lecture, homework, and the in-class discussions.

**Exams:** There will be two midterm exams held in class during the semester and one comprehensive final exam. Exams will tentatively be scheduled for:

Midterm Exam I (Tentative)	October 13, 2022 (Tentative)
Midterm Exam II (Tentative)	November 10, 2022 (Tentative)
Final Exam Period	December 16 - 22, 2022

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 2022 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 are in need of accommodations due to a disability please contact Scott Janz, Associate Director of Disability Support Services at **973-596-5417** or via email at **scott.p.janz@njit.edu**. The office is located in Kupfrian Hall, Room 201. A Letter of Accommodation Eligibility from the Office of Accessibility Resources and Services office authorizing your accommodations will be 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.

**Important Dates** (See: **Fall 2022 Academic Calendar, Registrar**)

<b>Date</b>	<b>Day</b>	<b>Event</b>
September 5, 2022	Monday	Labor Day
September 6, 2022	Tuesday	First Day of Classes
September 12, 2022	Monday	Last Day to Add/Drop Classes
November 14, 2022	Monday	Last Day to Withdraw
November 22, 2022	Tuesday	Thursday Classes Meet
November 23, 2022	Wednesday	Friday Classes Meet
November 24 to November 25, 2022	Thursday and Friday	Thanksgiving Recess - Closed
November 26, 2022	Saturday	Saturday Classes Meet
December 14, 2022	Wednesday	Last Day of Classes
December 15, 2022	Thursday	Reading Day

December 16 to December 22, 2022	Friday to Thursday	Final Exam Period
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## Course Outline

Week	Section	Topic	Assignment
1	1.2 / 1.3	Essential Functions / New Functions from Old Functions	1, 2 / 1, 2, 3
2	2.2	The Limit of a Function	4, 6, 14, 16
	2.3	Calculating Limits using Limit Laws	12, 16, 18, 20
3	2.5	Limits Involving Infinity	4, 16, 20, 22, 24
	2.6	Derivatives and Rates of Change	6, 8, 11, 13
4	2.7	The Derivative as a Function	4, 14, 19, 21, 26
	3.1	Derivatives of Polynomials and Exponential Functions	4, 8, 12, 50
5	3.2	Product and Quotient Rules	3, 5, 15, 17
		<b>Review</b>	
6		<b>Exam</b>	
	Appendix C	Trigonometry	21, 23, 25
7	3.3	Derivatives of Trigonometric Functions	3, 5, 11, 15, 16
	3.4	Chain Rule	3, 4, 12, 16
8	3.5	Implicit Differentiation	6, 8, 22, 24
	3.7	Derivatives of Logarithmic Functions	4, 8, 10, 12
9	4.1	Related Rates	11, 12, 13, 14
	4.2	Maximum and Minimum Values	4, 6, 24, 26
10	4.3	Derivatives and Shapes of Curves	8, 12, 22, 24
		<b>Review</b>	
11		<b>Exam</b>	
	4.5	Indeterminate Forms and L'Hopital's Rule	5, 8, 31, 34
12	4.6	Optimization Problems	10, 14, 18, 40

	4.8	Antiderivatives	5, 11, 25, 31, 41
13	5.1	Areas and Distances	1, 2
14	5.2	The Definite Integral	5
	5.3	Evaluating Definite Integrals	4, 10, 14, 24
15	5.4	The Fundamental Theorem of Calculus	8, 24
		<b>Review</b>	

*Updated by Professor I. Zarate - 8/17/2022*  
*Department of Mathematical Sciences Course Syllabus, Fall 2022*