Fall 2023

MATH 138-003, Fall 2023: General Calculus I

Magdallena Potocki-Dul

MATH 138: General Calculus I
Fall 2023 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 138-003	Professor M. Potocki-Dul

Office Hours for All Math Instructors: Fall 2023 Office Hours and Emails

Required Textbook:

Title	*Calculus: Concepts and Contexts bundled w/ WebAssign*
Author	Stewart
Edition	5th
Publisher	Cengage
ISBN #	9780357632499 (Book Only) 9780357756911 (Bundle with Webassign)

University-wide Withdrawal Date: The last day to withdraw with a **W** is **Monday, November 13, 2023**. 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. Students are expected to attend class. Each class is a learning experience that cannot be replicated through simply "getting the notes."

Homework: Homework is a requirement for this class. All homework assignments are online through WebAssign. To use WebAssign you need to buy a student access code. Access codes are included with a new book that is bundled with WebAssign; codes can be purchased separately from the bookstore or online. WebAssign gives you free access for two weeks after the start of class.

Quiz Policy: Quizzes will be given approximately once a week throughout the semester. They will be based on the lecture, homework, and the in-class discussions. Quizzes will sometimes be assigned through WebAssign or Canvas, and students will be expected to complete the quiz online. There are no make-up quizzes; the average will be calculated after dropping the lowest two scores.

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	Lecture 12
Midterm Exam II	Lecture 20
Final Exam Period	December 17 - December 23, 2023

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 2023 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 2023 Academic Calendar, Registrar)

Date	Day	Event
September 4, 2023	Monday	Labor Day
September 5, 2023	Tuesday	First Day of Classes
September 11, 2023	Monday	Last Day to Add/Drop Classes
November 13, 2023	Monday	Last Day to Withdraw
November 21, 2023	Tuesday	Thursday Classes Meet
November 22, 2023	Wednesday	Friday Classes Meet
November 23 to November 26, 2023	Thursday and Saturday	Thanksgiving Recess - Closed
December 13, 2023	Wednesday	Last Day of Classes

December 14, 2023	Thursday	Reading Day 1
December 15, 2023	Friday	Reading Day 2
December 17 to December 23, 2023	Sunday to Saturday	Final Exam Period

Course Outline

Lect.	Section	Topic	Assignment (Tentative)
1	2.2	The Limit of a Function	2.2 ex: 3, 4, 6, 14, 16, 20
2	2.3	Calculating Limits using Limit Laws	2.3 ex: 3, 5-9, 12, 16-26 even
3	2.5	Limits Involving Infinity	2.5 ex: 4, 16,19, 23, 24, 25, 27, 33, 35, 43, 48, 57
4	2.6	Derivatives and Rates of Change	2.6 ex: 7, 8, 10, 14
5	2.7	The Derivative as a Function	2.7 ex: 3, 14, 15, 21, 23, 24, 25, 27, 32, 33, 34
6	3.1	Derivatives of Polynomials and Exponential Functions	3.1 ex: 4, 5, 6, 9, 12, 15, 16, 19, 20, 22, 24, 25, 28, 32, 40, 50
7	3.2	Product and Quotient Rules	3.2 ex: 4, 6, 7, 8, 10, 12, 13, 15, 16, 17, 18
8	Appendix C	Trigonometry	Appendix C: ex: 21, 23, 25
	3.3	Derivatives of Trigonometric Functions	3.3 ex: 2, 4, 6, 8, 9, 11, 16, 18, 24, 32
9	3.4	Chain Rule	3.4 ex: 7, 10, 12, 14, 16, 17, 30, 31
10	3.5	Implicit Differentiation	3.5 ex: 5, 6, 8, 10, 13, 14, 20, 22
11		**REVIEW FOR EXAM 1**	
12		**EXAM 1**	
13	3.7	Derivatives of Log Functions	3.7 ex: 4, 6, 7, 10, 12, 40
14	3.8	Rates of Change in the Natural and Social Sciences	3.8 ex: 1, 7, 8, 12a, 14
15	4.1	Related Rates	4.1 ex: 4, 11-14
16	4.2	Max and Min Values	4.2 ex: 5, 6, 15, 23, 24, 26, 27, 28, 29
17	4.3	Derivatives and Shapes of Curves	4.3 ex: 8, 12, 19, 20, 22, 24
18	4.5	Indeterminate forms and L'Hopital's Rule	4.5 ex: 10, 15, 16, 18, 20, 21, 24, 28, 31, 34
19		**CATCH UP AND REVIEW FOR EXAM 2**	

20		**EXAM 2**	
21	4.6	Optimization Problems	4.6 ex: 10, 14, 18, 40
22	4.8	Antiderivatives	4.8 ex: 5, 11, 25, 31, 41
23	5.1	Areas and Distances	5.1 ex: 1-2
24	5.2	The Definite Integral	5.2 ex: 5
25	5.3	Evaluating Definite Integrals	5.3 ex: 4, 10, 14, 24
26	5.4	The Fundamental Theorem of Calculus	5.4 ex: 8, 24
27-28		**CATCH UP AND REVIEW FOR FINAL EXAM**	
		FINAL EXAM	

Updated by Professor M. Potocki-Dul - 8/28/2023
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