MATH 238: General Calculus II
Fall 2024 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: A continuation of MATH 138. Topics include applications of integral calculus and an introduction to ordinary differential equations.

Number of Credits: 3

Prerequisites: MATH 138 with a grade of C or better or MATH 139 with a grade of C or better or MATH 111 with a grade of C or better or placement.

Course-Section and Instructors:

Course-Section	Instructor
Math 238-101	Professor M. Hercules-Menjivar

Office Hours for All Math Instructors: Fall 2024 Office Hours and Emails

Required Textbook:

Title	*Calculus: Concepts & Contexts*
Author	Stewart
Edition	5th
Publisher	Cengage Learning
ISBN #	9780357632499 (Book Only) 9780357756911 (Bundle with Webassign)
CafeScribe ISBN	978-1111432584

University-wide Withdrawal Date: The last day to withdraw with a **W** is **Monday, November 11, 2024**. It will be strictly enforced.

COURSE GOALS

Course Objectives

Students should:

- develop greater depth of understanding of integration and its importance in scientific and engineering applications,
- learn about series, including their convergence properties and their use in representing functions,
- gain experience in the use of approximation in studying mathematical and scientific problems and the importance of mathematically understanding and evaluating the accuracy of approximations,
- learn new ways of mathematically representing curves and how to use calculus in these settings, and learn alternative coordinate systems which are natural for many problems and
- learn how calculus can be applied in these systems.

Course Outcomes

- Students should gain an appreciation for the importance of calculus in scientific, engineering, computer, and other applications. Students should gain experience in the use of technology to facilitate visualization and problem solving.
- Students have a greater understanding of the importance of calculus in science and technology.
- Students are prepared for further study in mathematics as well as science, engineering, computing, and other areas.

Course Assessment: The assessment of objectives is achieved through homeworks, quizzes, and exams.

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	5%
Quizzes	5%
Midterm Exam I	20%
Midterm Exam II	20%
Midterm Exam III	20%
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.

Homework Policy: Homework is an expectation of the course. All homework for the semester is listed above by section. In addition to the assigned homework, students will be required to complete foundation questions for each section PRIOR to beginning the section. These questions will allow students to review relevant material covered in the section. This will be graded as homework in addition to the assigned homework in the syllabus.

Quiz Policy: Quizzes will be given throughout the semester. They will be based on the lecture, homework, foundation questions and the in-class discussions. Quizzes will sometimes be assigned through WebAssign and will be completed outside class. There will be 6-10 assessments given throughout the semester.

Exams: There will be three exams during the semester and a cumulative final exam during the final exam week:

Midterm Exam I	Lecture 4
Midterm Exam II	Lecture 8
Midterm Exam III	Lecture 12
Final Exam Period	December 15 - December 21, 2024

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 2024 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 an 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 2024 Academic Calendar, Registrar)

Date	Day	Event
September 2, 2024	Monday	Labor Day
September 3, 2024	Tuesday	First Day of Classes
September 9, 2024	Monday	Last Day to Add/Drop Classes
November 11, 2024	Monday	Last Day to Withdraw
November 26, 2024	Tuesday	Thursday Classes Meet
November 27, 2024	Wednesday	Friday Classes Meet
November 28 to December 1, 2024	Thursday and Sunday	Thanksgiving Recess - Closed
December 11, 2024	Wednesday	Last Day of Classes
December 12, 2024	Thursday	Reading Day 1
December 13, 2024	Friday	Reading Day 2
December 15 to December 21, 2024	Sunday to Saturday	Final Exam Period

Course Outline

Lecture	Section	HW
1	4.8 Definite Integral 5.3 Evaluating Definite Integrals	1-33 odd, 42 and 43 1-29 odd 43, 47, and 59
2	5.4 FTC 5.5 Substitution Rule	3, 7-17 odd 3-33 odd, and 41-47 odd
3	5.6 Integration by Parts 5.7 Additional Integration Methods	1-29 odd 1-9 odd and 19-27 odd
4	**Review for Midterm**	**STUDY**

	Midterm 1	
5	5.10 Improper Integrals 6.1 Areas	1, 5-33 odd, and 43-47 odd 1-15 odd
6	6.2 Volumes 7.3 Differential Equations	1-17 odd 1-18 odd
7	6.4 Arc Length 6.5 Average Value of a Function	3-19 odd, 23, and 25 1-13 odd
8	**Review for Midterm** **Midterm 2**	**STUDY**
9	8.1 Sequence 8.2 Series	1,2, 5-27 odd 9-33 odd
10	8.3The Integral and Comparison Test 8.4 Other Convergence Tests	7-29 odd 3-9 and 19-33
11	8.5 Power Series 8.6 Representations of Functions as Power Series	3-23 odd 3-9 odd, 13-17 odd, 23
12	**Review for Midterm 3** **Midterm 3**	**STUDY**
13	8.7 Taylor and Mclaurin Series 8.8 Applications of Taylor Polynomials	11-18 all, 25-31 odd 1-21 odd
14	Review for Final	
15	**Final Exam**	