MATH 238: General Calculus II
Summer 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: 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.

Course-Section and Instructors:

Course-Section	Instructor
Math 238-141	Professor A. Ionescu

Office Hours for All Math Instructors: Office Hours and Emails

Required Textbook:

Title	*Calculus: Concepts and Contexts*
Author	Stewart
Edition	4th
Publisher	Cengage
ISBN #	978-0495557425

University-wide Withdrawal Date: Please see the Summer 2023 Academic Calendar for the last day to withdraw based on the summer session you are registered for.

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 improved logical thinking and problem-solving skills.
- 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	25%
Midterm	35%
Final Exam	35%

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: Homework is an expectation of the course. All homework for the semester is listed above by section. These questions will allow students to review relevant material covered in the section. The last assignment will be due July 17, 2023.

Quiz Policy: Quizzes will be given throughout the semester. They will be based on the lecture, homework, foundation questions and the in-class discussions.

Exams: There will be one exam during the semester and a cumulative final exam. Midterm is tentatively scheduled for week 4 and Final for week 8.

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: Summer 2023 Hours)

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 at:

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

Important Dates (See: Summer 2023 Academic Calendar, Registrar)

Date	Day	Event
May 22, 2023	Monday	**Full, First, and Middle Summer** Session Begins
May 24, 2023	Wednesday	Last Day to Add/Drop for **First Summer** Session
May 26, 2023	Friday	Last Day to Add/Drop for **Middle**

		Summer Session
May 29, 2023	Monday	Last Day to Add/Drop for **Full Summer** Session
May 29, 2023	Monday	Memorial Day - University Closed/No Classes Scheduled
June 10, 2023	Saturday	Last Day to Withdraw from **First Summer** Session
June 16, 2023	Friday	Last Day to Withdraw from **Middle Summer** Session
June 16, 2023	Friday	Juneteenth - University Closed/No Classes Scheduled
June 26, 2023	Monday	Last Day of Classes for **First Summer** Session
June 30, 2023	Friday	Last Day to Withdraw from **Full Summer** Session
July 4, 2023	Tuesday	Independence Day - University Closed/No Classes Scheduled
July 5, 2023	Wednesday	**Second Summer** Session Begins
July 6, 2023	Thursday	Last Day to Add/Drop for **Second Summer** Session
July 17, 2023	Monday	Last Day of Classes for **Middle Summer** Session
July 20, 2023	Thursday	Last Day to Withdraw for **Second Summer** Session
August 8, 2023	Tuesday	Last Day of Classes for **Full and Second Summer** Session

Course Outline

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

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