MATH 238: General Calculus II
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: 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 238-003	Professor R. Bouayad
Math 238-101	Professor R. Bouayad

Office Hours for All Math Instructors: Fall 2025 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 10, 2025**. 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. Course Outcomes 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	15%
Quizzes	15%
Exam I	20%
Exam II	20%
Final Cumulative Exam	30%

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

A	88 - 100	**C**	64 - 69
B+	82 - 87	**D**	55 - 63
B	76 - 81	**F**	0 - 54
C+	70 - 75		

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 a requirement for this class. All homework assignments are online through WebAssign, which is linked directly from Canvas. Therefore, you don't need a class key to enroll on WebAssign, but 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 Canvas or WebAssign, 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 score.

Exams: There will be two midterm exams and a final. Each exam will test the material taught since the beginning of the semester. **ESTIMATED** dates for the exams are:

Midterm Exam I	Week 5
Midterm Exam II	Week 10
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 are in need of accommodations due to a disability, please contact the Office of Accessibility Resources and Services at oars@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: 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 WebAssign.

Week #	Section	Topic	Assignment
1		Introduction/ Precalculus/Calculus 1 Review	
	5.3	Evaluating Definite Integrals	5.3 Ex.:1-30
2	5.4	The Fundamental Theorem of Calculus	5.4 Ex.: 1,2,8, 9, 13, 25

	5.5	The Substitution Rule	5.5 Ex.: 3-33,40-47
3	5.6	Integration by Parts	5.6 Ex: 1-29
	5.7	Additional Techniques of Integration	5.7 Ex.: 2, 6, 8, 19
4	5.7	Additional Techniques of Integration	5.7 Ex.: 20-27
	5.10	Improper Integrals	5.10 Ex.: 5-25
5	*Catch up and Review for Exam*		Chapter 5 Review Ex.: 9-32
	EXAM I		
6	6.2	Volumes	6.2 Ex.: 5, 7, 8, 14, 16
	6.2	Volumes	6.2 Ex.: 2, 10, 13, 14
7	6.3	Volumes By Cylindrical Shells	6.3 Ex. 9,10, 11, 12
	7.1	Modeling with Differential Equations	7.1 ex. 7, 9, 11, 13, 14
8	7.3	Separable Differential Equations	7.3 ex. 2-18 evens
	8.1	Sequences	8.1 Ex.: 4, 6, 14, 16, 41
9	8.2	Series	8.2 Ex.: 4, 6, 22, 26
	8.3	Integral and Comparison Tests	8.3 Ex.: 6, 10, 16, 18
10	*Catch up and Review For Exam*		
	EXAM II		
11	8.4	Other Convergence Tests	8.4 Ex.: 21, 22, 26, 29
	8.4	Other Convergence Tests	
12	8.5	Power Series	8.5 Ex.: 13, 14, 19, 20
	8.5	Power Series	
13	8.6	Representations of Functions as Power Series	8.6 Ex.: 5, 6, 7, 8
	8.7	Taylor and Maclaurin Series	8.7 Ex.: 5, 6, 13, 14
14	*Catch up and Review for Final Exam*		
	FINAL EXAM		