MATH 238: General Calculus II
Spring 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 or placement.

Course-Section and Instructors:

Course-Section	Instructor
Math 238-006	Professor B. Patiak

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

Required Textbook:

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

University-wide Withdrawal Date: The last day to withdraw with a **W** is **Monday, April 3, 2023**. 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**	62 - 68
B+	83 - 87	**D**	55 - 61
B	76 - 82	**F**	0 - 54
C+	69 - 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 for the semester is listed above by

section.

Quiz Policy: Quizzes will be given weekly 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 are held on the following estimated dates:

Midterm Exam I	February 17, 2023
Midterm Exam II	TMarch 28, 2023
Final Exam Period	May 5 - May 11, 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: Spring 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 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: Spring 2023 Academic Calendar, Registrar)

Date	Day	Event

January 17, 2023	Tuesday	First Day of Classes
January 23, 2023	Monday	Last Day to Add/Drop Classes
March 13, 2023	Monday	Spring Recess Begins
March 18, 2023	Saturday	Spring Recess Ends
April 3, 2023	Monday	Last Day to Withdraw
April 7, 2023	Friday	Good Friday - No Classes
May 2, 2023	Tuesday	Friday Classes Meet
May 2, 2023	Tuesday	Last Day of Classes
May 3 - May 4, 2023	Wednesday and Thursday	Reading Days
May 5 - May 11, 2023	Friday to Thursday	Final Exam Period

Course Outline

This outline is subject to change throughout the semester. A weekly Outline will be posted on Canvas homepage.

Day	Date		Section #	Topics	Remarks
1	Tue.	1/17		Orientation, Differentiation Review	
2	Fri.	1/20	4.8	Antiderivatives and Indefinite Integration	
3	Tue.	1/24	5.1 – 5.3	Area and Definite Integral	QUIZ 1
4	Fri.	1/27	5.4	Fundamental Theorem of Calculus	
5	Tue.	1/31	5.5	Integration by Substitution I	QUIZ 2
6	Fri.	2/3	5.5	Integration by Substitution II	
7	Tue.	2/7	5.6	Integration by Parts	QUIZ 3
8	Fri.	2/10	5.7	Integration by Partial Fraction	
9	Tue.	2/14		Exam I Review	QUIZ 4
10	Fri.	2/17		**Midterm Exam I** **Covering Lessons from Day 1 – Day 8**	
11	Tue.	2/21	5.10	Improper Integrals	QUIZ 5

12	Fri.	2/24	6.1	Area Between Two Curves	
13	Tue.	2/28	6.2	Volume by Disk and Washer Method	QUIZ 6
14	Fri.	3/3	6.4 – 6.5	Arc length and Average Value of the Function	
15	Tue.	3/7	7.3	Introduction to Differential Equation and Variable Separable	QUIZ 7
16	Fri.	3/10	7.4	Modeling with Differential Equations	
SPRING RECESS					
17	Tue.	3/21	8.2	Infinite Series and nth-term Divergence Test	QUIZ 8
18	Fri.	3/24	8.3	Exam Review	
19	Tue.	3/28		**Midterm Exam II** **Covering Lessons from Day 11 - 18**	
20	Fri.	3/31	8.3	Integral Test, P-Test	
21	Tue.	4/3	8.3	Comparison Tests	QUIZ 9 (Last Day to Withdraw)
22	Fri.	4/7	8.4	**NO SCHOOL - GOOD FRIDAY**	
23	Tue.	4/11	8.4	Alternating Series Test	QUIZ 10
23	Fri.	4/14	8.4	Ratio and Root Test	
24	Tue.	4/18	8.8	Taylor Polynomials and Approximations	Quiz 11
25	Fri.	4/21	8.5	Power Series	
26	Tue.	4/25	8.7	Taylor and Maclaurin Series	QUIZ 12
27	Fri.	4/28	8.7	Taylor and Maclaurin Series	
28	Tue. (Friday Class Meet)	5/2		Final Exam Review	
29				**Cumulative Final Exam**	