MATH 238-001: General Calculus II
Fall 2018 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 238-001	Professor N. Aly

Office Hours for All Math Instructors: Fall 2018 Office Hours and Emails

Required Textbook:

Title	*Calculus: Concepts & Contexts*
Author	Stewart
Edition	4th
Publisher	Cengage Learning
ISBN #	978-0495557425
CafeScribe ISBN	978-1111432584

University-wide Withdrawal Date: The last day to withdraw with a **W** is **Monday, November 12, 2018**. 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.
- 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	10%
Quizzes	15%
Midterm Exam I	23%
Midterm Exam II	22%
Final 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. Students are expected to attend class. Each class is a learning experience that cannot be replicated through simply "getting the notes." Attendance at all classes (both lecture and recitation) will be recorded and is mandatory.

Homework Policy: Homework is an expectation of the course. All homework for the semester is listed below by section. In addition to the assigned homework, students will be required to complete additional practice problems provided by the professor.

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

Exams: There will be two midterm exams held in class during the semester and one comprehensive final exam. The final exam will be held during the following week:

Midterm Exam I	Lecture 10
Midterm Exam II	Lecture 20
Final Exam Week	December 15 - 21, 2018

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 2018 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.

All students must familiarize themselves with and adhere to the Department of Mathematical Sciences Course Policies, in addition to official university-wide policies. The Department of Mathematical Sciences takes these policies very seriously and enforces them strictly.

Accommodation of Disabilities: Disability Support Services (DSS) 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 Chantonette Lyles, Associate Director of Disability Support Services at 973-596-5417 or via email at lyles@njit.edu. The office is located in Fenster Hall Room 260. A Letter of Accommodation Eligibility from the Disability Support 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 Disability Support Services (DSS) website at:

- http://www5.njit.edu/studentsuccess/disability-support-services/

Important Dates (See: Fall 2018 Academic Calendar, Registrar)

Date	Day	Event
September 4, 2018	T	First Day of Classes
September 10, 2018	M	Last Day to Add/Drop Classes
November 12, 2018	M	Last Day to Withdraw
November 20, 2018	T	Thursday Classes Meet
November 21, 2018	W	Friday Classes Meet

November 22 - 25, 2018	R - Su	Thanksgiving Recess
December 12, 2018	W	Last Day of Classes
December 13 & 14, 2018	R & F	Reading Days
December 15 - 21, 2018	Sa - F	Final Exam Period

Course Outline

(This outline is subject to change throughout the semester)

Sections	Topic	Assignment
3.1	Review of Derivative Rules	Finish what is not completed in class
3.6	Review of Derivative Rules	
5.3	Evaluating Definite Integrals	
5.5	The Substitution Rule	5.5 Ex.: 8, 10, 29, 40, 42
5.6	Integration by Parts	5.6 Ex: 4, 6, 12, 16
5.7	Additional Techniques of Integration	5.7 Ex.: 2, 6, 8, 20
5.7	Additional Techniques of Integration	5.7 Ex.: 22, 23, 25, 26
5.9	Approximate Integration	5.9 Ex.: 5, 8, 10,
5.1	Improper Integrals	5.10 Ex.: 8, 14, 16
	CATCH UP AND REVIEW FOR EXAM	Chapter 5 Review Ex.: 9-32
	EXAM I	
6.2	Volumes	6.2 Ex.: 5, 7, 8, 14, 16
6.2	Volumes	6.2 Ex.: 2, 10, 13, 14
6.3	Volumes By Cylindrical Shells	6.3 Ex. 9,10, 11, 12
6.4	Arc Length	6.4 Ex.: 7, 8, 9, 11
6.5	Average Value	6.5 Ex.: 5, 14, 15, Project "Where to sit at the movies"
8.1	Sequences	8.1 Ex.: 4, 6, 14, 16, 41
8.1	Sequences	
8.2	Series	8.2 Ex.: 4, 6, 22, 26
	CATCH UP AND REVIEW FOR EXAM	**PROJECT DUE**
	EXAM II	
8.3	Integral and Comparison Tests	8.3 Ex.: 6, 10, 16, 18
8.4	Other Convergence Tests	8.4 Ex.: 21, 22, 26, 29
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8.5	Power Series	8.5 Ex.: 13, 14, 19, 20
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

CATCH UP AND REVIEW FOR EXAM	