NJIT New Jersey's Science & Technology University

THE COLLEGE OF SCIENCE AND LIBERAL ARTS

THE DEPARTMENT OF MATHEMATICAL SCIENCES

MATH 113-005: Finite Mathematics and Calculus I
Fall 2020 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: An introduction to differential and integral calculus. Applications include area, volumes, curve lengths, surface area, centroids, and moments. Focus is on application throughout the course.

Number of Credits: 3

Prerequisites: (Intended for Architecture students.) MATH 107 with a grade of C or better, or MATH 110with a grade of C or better, or NJIT placement.

Course-Section and Instructors

Course-Section	Instructor
Math 113-005	Professor E. Dupay

Office Hours for All Math Instructors: Fall 2020 Office Hours and Emails

Required Textbook:

Title	*Calculus and Its Applications*
Author	Bittinger
Edition	12th
Publisher	Pearson
ISBN #	978-0135164884

University-wide Withdrawal Date: The last day to withdraw with a **W** is **Monday, November 9, 2020**. It will be strictly enforced.

STUDENT RESPONSIBILITIES

- **Read and understand the syllabus and all of your responsibilities**
- **Adhere to all policies and procedures**

- **Report conflicts and/or special circumstances in a timely manner**
- **Report any instances of violations of Academic Integrity to your Instructor**
- **Communicate directly with your Instructor on ALL course-related matters**
- **Effectively manage time and devote sufficient time to succeeding in this course**
- **Keep track of your grades**
- **Make use of all resources available to help you learn**
- **Be respectful of peers and your instructor**
- **Accept responsibility for your grades - requests for extra credit opportunities will be denied**

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:

Quizzes, Homework, and Class Participation	15%
Midterm Exam I	25%
Midterm Exam II	25%
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 - 85	**F**	0 - 59
C+	76- 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 problems will be assigned in class and should be handed in on the due date.

Exams: There will be two midterm exams held in class during the semester and one comprehensive final exam. The following exam periods are tentative and therefore possibly subect to change:

Midterm Exam I	October 16, 2020
Midterm Exam II	November 24, 2020
Final Exam Period	December 15 - 21, 2020

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 2020 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 Kupfrian Hall, Room 201. 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:

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

Important Dates (See: Fall 2020 Academic Calendar, Registrar)

Date	Day	Event
September 1, 2020	T	First Day of Classes
September 5, 2020	S	Saturday Classes Begin
September 7, 2020	M	Labor Day
September 8, 2020	T	Monday Classes Meet
September 8, 2020	T	Last Day to Add/Drop Classes
November 9, 2020	M	Last Day to Withdraw
November 25, 2020	W	Friday Classes Meet
November 26-29, 2020	R - Su	Thanksgiving Recess - University Closed
December 10, 2020	R	Last Day of Classes
December 11 & 14, 2020	F & M	Reading Days
December 15 - 21, 2020	T - M	Final Exam Period

Course Outline

Week/ Date	Sec.	Topic	HW#	Chapter	Homework
1 09/01	AppA R.4	Review of Basic Algebra	1	Diag. Test	#1-23 ODD (page XV right before page 1)
2 09/04		Exponents, Factoring, Solving Equations		Apdx A.	# 43,49,115,117,123,127,131,139,140,151 (page 595)
		Graphs of Lines		R.4	# 5-15 ODD, 31-39 ODD
3 09/08	R.2	Functions	2	R.2	# 21,35, 57-65 ODD
	R.3	Finding Domain and Range		R.3	# 33-37 ALL, 49
4 09/11	R.5	Nonlinear functions and solving systems of equations		R.5	# 2,3,25,27,30,45,46,55,57,61,65,72,75,77,78, 87,89,93, graph y=|x|
5 09/15	1.1	Limits (graphically)	3	1.1	# 23-40 ALL, 52, 56, 58, 61, 67
6 09/18	1.2	Limits (algebraically)		1.2	# 9, 11, 19
7 09/22	1.3	Average Rate of Change	4	1.3	# 1-15 ODD,21,27,31,39,41
8 09/25	1.4	Definition of the Derivative		1.4	# 1,7,18,19,23,24,45,55
	1.5	Power and Sum Rules		1.5	# 5-29 ODD, 51,58,61,69,91
9 09/29	1.6	Product and Quotient Rules	5	1.6	# 3,5,7,13,15,27
10 10/02	1.7	Chain Rule		1.7	# 1-13 ODD, 17,57,58,62
11 10/06	1.8	Higher Order Derivatives		1.8	# 3-19 ODD, 38,45,49
12 10/09	2.1	First Derivative Test for Extrema	7	2.1	# 1,3,7,11,69,71,73
1310/13	**BRIEF REVIEW**				
	EXAM #1, OCTOBER 16, 2020				
14 10/20	2.2	Second Derivative Test		2.2	# 9,11,15,23,65
15 10/23	2.3	Graphing Rational Functions		2.3	# 1-17 ODD, 25,27,52
16 10/27	2.4	Absolute Max and Mins	8	2.4	# 9,13,16,18,25,97,103
17 10/30	2.5	Applied Optimization		2.5	# 3,11,13,19,31,34,38
18 11/06	2.8	Implicit Diff./ Related Rates	9	2.8	# 1,7,17,40,44
19 11/10	3.1	Exponential Functions		3.1	# 19-35 ODD, 78,87,93
20 11/13	3.2	Logarithmic Functions	10	3.2	# 5-15 ODD, 57,61,63

21 11/17	3.3	Application of Exponential and Log Functions		3.3	# 11
2211/17	3.5	Derivatives of Log Functions of Other Bases		3.4	#9,12,36,42
2311/20	**BRIEF REVIEW**				
	EXAM #2, NOVEMBER 24, 2020				
2412/1	4.1	Anti-Differentiation	12	4.1	# 1-27 ODD, 71
	4.2	Antiderivatives as Areas		4.2	# 18,29,33,38
	4.3	Area and Definite Integrals		4.3	# 1-13 ODD, 43,80,85
2512/8	4.4	Fundamental Theorem of Calc.	13	4.4	# 15,17,22,36,40
	4.5	Integration by Substitution		4.5	# 1,3,11,15,18,21,32,44,93,98
26 12/08	**FINAL EXAM REVIEW**				
	FINAL EXAM DECEMBER 15 - 21				