MATH 113-102: Finite Mathematics and Calculus I
Spring 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 110 with a grade of C or better, or NJIT placement.

Course-Section and Instructors

Course-Section	Instructor
Math 113-102	Professor E. Gulistan

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

Required Textbook:

Title	*Calculus and Its Applications*
Author	Bittinger
Edition	11th
Publisher	Cengage
ISBN #	978-0133862386

University-wide Withdrawal Date: The last day to withdraw with a **W** is **Monday, April 6, 2020**. It will be strictly enforced.

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	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 - 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 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	February 25, 2020
Midterm Exam II	April 7, 2020
Final Exam Period	May 8 - 14, 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: Spring 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: Spring 2020 Academic Calendar, Registrar)

Date	Day	Event
January 21, 2020	T	First Day of Classes
January 31, 2020	F	Last Day to Add/Drop Classes
March 15 - 22, 2020	Su-Su	Spring Recess: No Classes/ University Open
April 6, 2020	M	Last Day to Withdraw
April 10, 2020	F	Good Friday - University Closed
May 5, 2020	T	Friday Classes Meet - Last Day of Classes
May 6 & 7, 2020	W & R	Reading Days
May 8 - 14, 2020	F - R	Final Exam Period

Course Outline

Week/ Date	Sec.	& Topic	#	Chapter	Homework
1 1/21	AppA R.4	* Review of Basic Algebra	1	Diag. Test	#1-23 ODD (page XV right before page 1)
		* 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
2 1/28	R.2	* Functions	2	R.2	# 21,35, 57-65 ODD
	R.3	* Domain		R.3	# 33-37 ALL, 49
	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|
3 2/4	1.1	* Limits (graphically)	3	1.1	# 23-40 ALL, 52, 56, 58, 61, 67
	1.2	* Limits (algebraically)		1.2	# 9, 11, 19
	1.3	* Average Rate of Change		1.3	NONE
4 2/11	1.4	* Definition of the Derivative	4	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
	1.6	* Product and Quotient Rules		1.6	# 3,5,7,13,15,27
5 2/18	1.7	* Chain Rule	5	1.7	# 1-13 ODD, 17,57,58,62
	1.8	* Higher Order Derivatives		1.8	# 3-19 ODD, 38,45,49
6 2/25	**BRIEF REVIEW AND EXAM #1, FEBRUARY 25TH, 2020**				
7 3/3	2.1	* First Derivative Test for Extrema	7	2.1	# 1,3,7,11,69,71,73
	2.2	* Second Derivative Test		2.2	# 9,11,15,23,65
	2.3	* Graphing Rational Functions		2.3	# 1-17 ODD, 25,27,52
8 3/10	2.4	* Absolute Max and Mins	8	2.4	# 9,13,16,18,25,97,103
	2.5	* Applied Optimization		2.5	# 3,11,13,19,31,34,38
9 3/24	2.8	* Implicit Diff./ Related Rates	9	2.8	# 1,7,17,40,44
	3.1	* Exponential Functions		3.1	# 19-35 ODD, 78,87,93
	3.2	* Logarithmic Functions		3.2	# 5-15 ODD, 57,61,63
10 3/31	3.3	* Application of Exponential and Log Functions	10	3.3	Finish homework from previous week
	3.5	* Derivatives of Log Functions of Other Bases		3.4	
11 4/7	**BRIEF REVIEW AND EXAM #2, APRIL 7TH, 2020**				
12 4/14	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
13 4/21	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
14 4/28	4.5	* Integration by Substitution (cont.)	14	4.5	Finish homework from previous week
	Extra	* Introduction to Game Theory			
15 5/12		**FINAL EXAM**	15	-	**FINAL EXAM**