Fall 2024

MATH 135-003: Calculus For Business

S. Alptekin

MATH 135: Calculus for Business
Fall 2024 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: Intended for students with majors offered by SOM. An introduction to mathematics of business, principles of differential and integral calculus, and optimization.

Number of Credits: 3

Prerequisites: 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 135-003	Professor S. Alptekin

Office Hours for All Math Instructors: Fall 2024 Office Hours and Emails

Required Textbook:

Title	*Finite Mathematics and Calculus with Applications*
Author	M. Lial, R. Greenwell, N. Ritchey
Edition	11th
Publisher	Pearson
ISBN #	9780137419333
Notes	w/ MyMathLab

University-wide Withdrawal Date: The last day to withdraw with a **W** is **Monday, November 11, 2024**. It will be strictly enforced.

COURSE GOALS

Course Objectives: An introduction to mathematics of business, principles of differential and integral calculus, and optimization.

Course Assessment: The assessment of objectives is achieved through homework, quizzes, and common examinations with common grading.

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	20%
Midterm Exam I	20%
Midterm Exam II	20%
Final Exam	30%

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

A	90 - 100	**C**	65 - 74
B+	85 - 89	**D**	55 - 64
B	80 - 84	**F**	0 - 54
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. Each class is a learning experience that cannot be replicated through simply "getting the notes."

Homework: Homework is an expectation of the course.

Calculus is learned by solving problems. Homework assignments are completed online. The online assignments can be completed at https://mlm.pearson.com/northamerica/mymathlab/. In order to access the online assignments you need to have a student access code. Access codes are included with a new book that is bundled with MyMathLab; codes can be purchased separately from the textbook at the campus bookstore or online at the course website. If you buy a new book from another source make sure it is bundled with MyMathLab.

NOTE: Homework Assignments are DUE frequently (at least weekly) at the dates and times specified online and by your instructor.

How to get started with MyMathLab

http://m.njit.edu/Undergraduate/UG-Files/MML_Getting_Started.pdf

http://m.njit.edu/Undergraduate/UG-Files/Technology_Tips.pdf

Quiz Policy: Every week there will be a short quiz on the topics presented the previous week. There are no make-up quizzes. In case of an excused absence, the quiz will not be included in the final grade.

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

Midterm Exam I	Lecture 12
Midterm Exam II	Lecture 22
Final Exam Period	December 15 - December 21, 2024

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 2024 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 need accommodation due to a disability, please contact the Office of Accessibility Resources and Services at oars@njit.edu, or visit Kupfrian Hall 201 to discuss your specific needs. A Letter of Accommodation Eligibility from the office authorizing student accommodations is 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 2024 Academic Calendar, Registrar)

Date	Day	Event

September 2, 2024	Monday	Labor Day
September 3, 2024	Tuesday	First Day of Classes
September 9, 2024	Monday	Last Day to Add/Drop Classes
November 11, 2024	Monday	Last Day to Withdraw
November 26, 2024	Tuesday	Thursday Classes Meet
November 27, 2024	Wednesday	Friday Classes Meet
November 28 to December 1, 2024	Thursday and Sunday	Thanksgiving Recess - Closed
December 11, 2024	Wednesday	Last Day of Classes
December 12, 2024	Thursday	Reading Day 1
December 13, 2024	Friday	Reading Day 2
December 15 to December 21, 2024	Sunday to Saturday	Final Exam Period

Course Outline

Lecture	Lecture #	Sections	Topic	Homework
1	1	R3	Rational Expressions	# 12, 15, 22
		R4	Equations	# 9, 19, 26, 30, 31
		R5	Linear Inequalities	# 7, 11, 14, 18, 22
	2	3.2	Solving Linear Programming Problems Graphically	# 11, 13, 41
		3.3	Applications	# 1, 5, 6, 9
			Sensitivity Analysis - Project	P. 148 - 151
2	3	10.1	Properties of Functions	# 31, 33,46, 47 56, 58, 59
	4	10.3	Polynomial and Rational Functions	# 31, 34, 40, 45, 47
3	5	10.4	Exponential Functions	# 18, 28, 41, 44, 48
	6	10.5	Logarithmic Functions	# 12, 22, 24, 26, 32, 34, 37, 38,
4	7	10.6	Growth and Decay	# 15, 18, 19, 23

	8	11.1	Limits	# 36, 37, 47, 55, 56
5	9	11.1	Limits (Continued)	# 49, 50, 61, 62
	10	11.2	Continuity	# 15, 16, 19, 31, 48,
6	11		Exam Review	
	12		**MIDTERM EXAM 1**	
7	13	11.4	The Definition of the Derivative	# 1-4, 17, 18,
	14	11.5	Graphical Differentiation	# 15, 17, 19
			A Model for Drugs Administered Intravenously - Project	P. 661- 663
8	15	12.1	Techniques for finding Derivatives	#11, 14, 30, 44, 57, 58
	16	12.2	The Product Rule and the Quotient Rule	# 5, 11, 15, 23, 50
9	17	12.3	The Chain Rule	# 27, 33, 38, 41, 59
	18	13.1	Increasing and Decreasing Functions	# 9, 17, 27, 33
10	19	13.2	Relative Extrema	# 17, 27, 51, 56
	20	13.3	Concavity and Second Derivative Test	# 59-62 67, 71
11	21		Exam Review	
	22		**MIDTERM EXAM 2**	
12	23	14.2-14.3	Applications of Extrema	14,2 # 14-20 14.3 13-17
	24	15.1	Antiderivatives	# 13, 27, 39, 43
13	25	15.2	Substitution	# 9, 13, 19, 33
14	26	15.4	The Fundamental Theorem of Integral Calculus	# 11, 20, 27, 33
	27	16.2	Average Value of a Function	#28-35
15	28		**Catch Up/Review**	
	29		***FINAL EXAM***	