MATH 108: University Mathematics I B
Spring 2025 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 whose major requires MATH 111. Linear functions, equations, inequalities, systems of linear equations, quadratic equations, polynomials, rational expressions, expressions involving radicals, partial fraction decomposition, conic sections, graphing functions.

Number of Credits: 4

Prerequisites: None.

Course-Section and Instructors:

Course-Section	Instructor
Math 108-002	Professor J. Okoth
Math 108-004	Professor J. Okoth

Office Hours for All Math Instructors: Spring 2025 Office Hours and Emails

Required Textbook:

Title	*Precalculus - A Right Triangle Approach*
Author	Ratti and McWaters
Edition	5th
Publisher	Pearson
ISBN #	Print:9780137519354 MyLab Math with Pearson eText: 9780137519255

Notes	w/ MyMathLab

University-wide Withdrawal Date: The last day to withdraw with a **W** is **Monday, April 7, 2025**. It will be strictly enforced.

COURSE GOALS

Course Objectives: Students should (a) learn algebra and its applications to science and engineering (b) learn about slope and its relationship to average rates of change, (c) understand how to recognize functions, operations on functions and graph of functions, (d) understand many practical applications of systems of equations.

Course Outcomes

- Students have improved logical thinking and problem-solving skills.
- Students have a greater understanding of the importance of algebra in science and technology.
- Students are prepared for further study in mathematics as well as science, engineering, and other areas.

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	15%
Common Exam	15%
Common Exam	15%
Common Exam	15%
Final Exam	30%

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. Students are expected to attend class. Each class is a learning experience that cannot be replicated through simply "getting the notes."

Religious Observance: NJIT is committed to supporting students observing religious holidays. Students must notify their instructors in writing of any conflicts between course requirements and religious observances, ideally by the end of the second week of classes and no later than two weeks before the anticipated absence.

Homework: Homework is an expectation of the course. Online homework is assigned through the portal, My Math Lab. All students are expected to obtain a subscription to My Math Lab for successful completion of the class.

Recitation Problems: Recitation problems for the session are listed, by section. These problems are to be done during weekly recitations. Recitation assignments with an asterisk will be graded for accuracy.

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: Quizzes will be given at the professor's discretion approximately once a week during class time or recitation throughout the semester. They will be based on the lecture, homework and the in-class discussions. There will be 8-12 assessments given throughout the semester.

Exams: There will be three common midterm exams held during the semester and one comprehensive common final exam. Each exam will test the material taught since the beginning of the semester. Exams are held on the following days:

Common Exam I	February 12, 2025
Common Exam II	March 12, 2025
Common Exam III	April 16, 2025
Final Exam Period	May 10 - May 16, 2025

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.

AI Usage: *AI usage is not permitted in this course for solving problems in-class/homework assignments, quizzes,*

and exams.

ADDITIONAL RESOURCES

Math Tutoring Center: Located in the Central King Building, Lower Level, Rm. G11 (See: Spring 2025 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.

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If you are in need of accommodations due to a disability please If you need an accommodation due to a disability please contact the Office of Accessibility Resources and Services at oars@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 2025 Academic Calendar, Registrar)

Date	Day	Event
January 21, 2025	Tuesday	First Day of Classes
January 27, 2025	Monday	Last Day to Add/Drop Classes
March 16, 2025	Sunday	Spring Recess Begins
March 22, 2025	Saturday	Spring Recess Ends
April 3, 2025	Thursday	Wellness Day - No Classes
April 7, 2025	Monday	Last Day to Withdraw
April 18, 2025	Friday	Good Friday - No Classes
April 20, 2025	Sunday	Easter Sunday - No Classes Scheduled
May 6, 2025	Tuesday	Thursday Classes Meet

May 7, 2025	Wednesday	Friday Classes Meet
May 7, 2025	Wednesday	Last Day of Classes
May 8, 2025	Thursday	Reading Day 1
May 9, 2025	Friday	Reading Day 2
May 10 - May 16, 2025	Saturday to Friday	Final Exam Period

Course Outline

Lect. Date	Sect.	Topic	Online Assignments (eoo = every other odd)	Recitation Problems
1 T 1/21	1.1	Linear equations in one variable	*1.1: ex. 9, 15, 31, 35, 39, 43, 47, 63, 65, 67*	*38, 40*, 54, 64*
2 R 1/23	1.2	Applications of Linear Equations	1.2: ex. 23, 31, 37, 39, 41, 45, 49, 53, 57, 59, 63	24, 44*, 60
3 M 1/27	P3	Polynomials	*P3: ex. 17, 19, 21, 23, 31, 35, 39, 53, 71, 95*	*20*, 28, 54*
4 T 1/28	P4	Factoring Polynomials	*P4: ex. 11, 19, 29, 33, 37-45 odd, 49, 51, 59, 67-81 odd, 95-111 eoo= every other odd*	*12, 34, 40*, 50*, 52*
5 R 1/30	P4	Factoring Polynomials (continue)	*P4: ex. 11, 19, 29, 33, 37-45 odd, 49, 51, 59, 67-81 odd, 95-111 eoo*	*60, 70*, 82, 102, 112*
6 M 2/3	1.3	Quadratic Equations (Factoring/Quadratic Formula)	1.3: ex. 19-33 odd, 45-55 odd, 61-85 eoo, 99, 101, 105	24, 34, 48*, 56*
7 T 2/4	1.3	Quadratic Equations (Completing the square)	1.3: ex. 19-33 odd, 45-55 odd, 61-85 eoo, 99, 101, 105	62, 64*, 100, 102
8 R 2/6	1.4	Complex Numbers	1.4: ex 9, 11-23 eoo, 31, 35, 37, 39-51 eoo, 53, 55, 57	22, 32, 46*, 56
9 M 2/10	P5	Rational Expressions	P5: ex. 21, 31, 33, 37, 39, 49, 55, 59, 71, 73, 79, 87, 89, 91	22, 32, 40*, 48, 56
10 T 2/11		*CATCH UP AND REVIEW*		

- 2/12		**EXAM #1**	Covering Lectures 1-8	
11 R 2/13	P5	Rational Expressions	P5: ex. 21, 31, 33, 37, 39, 49, 55, 59, 71, 73, 79, 87, 89, 91	60, 72, 80, 92*
12 2/17	P6	Rational Exponents and Radicals	*P6: ex. 25, 33, 37, 41, 47, 51, 53, 59, 63, 69, 73, 89, 93, 95, 99, 103, 107, 111*	*32, 38, 46*, 56*
13 2/18	P6	Rational Exponents and Radicals	*P6: ex. 25, 33, 37, 41, 47, 51, 53, 59, 63, 69, 73, 89, 93, 95, 99, 103, 107, 111*	*60*, 70*, 92, 104*
14 2/20	1.5	Solving other types of equations	1.5: ex. 19, 21, 25, 31-55 eoo, 63-79 eoo	20, 26, 30, 34*
15 2/24	1.5	Solving other types of equations	1.5: ex. 19, 21, 25, 31-55 eoo, 63-79 eoo	50*, 52, 72, 74
16 2/25	1.6	Inequalities	1.6: ex. 25, 33, 37, 51, 53, 57, 61, 63, 65, 69, 73, 77, 89, 93, 97, 101, 105, 109	34, 52, 60*, 78
17 2/27	1.6	Inequalities	1.6: ex. 25, 33, 37, 51, 53, 57, 61, 63, 65, 69, 73, 77, 89, 93, 97, 101, 105, 109	90*, 96, 106
18 3/3	1.7	Absolute Value Equations and Inequalities	1.7: ex: 19, 23, 27, 31, 37-61 eoo	16, 28, 38, 50*, 56
19 3/4	2.1	The Coordinate Plane	2.1: ex. 15, 17, 19, 35, 37, 41-47 odd	16, 18*, 44
20 3/6	2.3	Lines	2.3: ex. 11-14, 29, 33, 35, 37, 41, 42, 51-54, 83, 85, 87, 101, 103	52, 86, 102, 103*
21 3/10	2.2	Graphs	2.2: ex. 23, 27, 35, 41, 43, 45, 53, 57, 69, 71, 73, 75, 77, 81, 83, 89, 91	28, 58, 90*
22 3/11		*CATCH UP AND REVIEW*		
- 3/12		**EXAM #2**	Covering Lectures 9-20	
23 3/13	2.4	Functions	2.4: ex. 9, 12-20, 31-32, 41-53 odd, 65, 69, 79-84	26, 42, 44*
3/16		SPRING BREAK	3/16/25 - 3/22/25	
24 3/24	2.5	Properties of Functions	2.5: ex. 35, 37, 39, 49-51, 53, 57, 61, 67, 71, 77, 81, 109, 111	36, 62, 76*
25 3/25	2.6	Library of Functions	2.6: ex. 11, 21, 23, 25, 31, 35, 43, 45 and A Library of Basic Functions p. 252	24, 28*, 36
26 3/27	2.7	Transformations of Functions	2.7: ex.11-17 odd, 18, 37-61 eoo, 65, 67, 71, 75, 79, 87, 89, 91 97, 98, 99, 103, 105	64, 70, 93*, 115
27 3/31	2.7	Transformations of Functions	2.7: ex.11-17 odd, 18, 37-61 eoo, 65, 67, 71, 75, 79, 87, 89, 91 97, 98, 99, 103, 105	64, 70, 93*, 115
28 4/1	2.8	Combining Functions; Composite Functions	2.8: ex. 9-19 odd, 23, 25, 29, 39, 45, 49, 55, 59, 61, 67, 69, 73, 77	28*, 50, 76
4/3		Wellness Day - No Classes	4/3/25	
29 4/7	2.9	Inverse Functions	2.9: ex. 9, 11, 25, 27, 29, 33, 55, 57, 59 67, 69, 79	26, 34, 60*
30 4/8	3.1	Quadratic Functions	3.1: ex. 11, 15, 27, 33, 39, 43, 45, 49, 61, 65, 67, 79, 81	42, 50*, 70

31 4/10	3.2	Polynomial Functions	3.2: ex. 9, 29, 33, 35, 37, 39, 45, 47, 65, 67, 71, 87	48, 64, 70*
32 4/14	3.3	Dividing Polynomials (long division)	3.3: ex. 9-15 odd, 19, 21, 29, 35, 39, 41, 49, 51	12, 32, 50*
33 4/15		*CATCH UP AND REVIEW*		
- 4/16		**EXAM #3**	Covering Lectures 21-31	
34 4/17	3.3	Dividing Polynomials (Synthetic)	3.3: ex. 9-15 odd, 19, 21, 29, 35, 39, 41, 49, 51	12, 32, 50*
4/18		Good Friday - No Classes	4/18/25	
35 4/21	3.6	Rational Functions	3.6: ex. 9, 13, 17, 21, 25, 27, 39-67 odd	42*, 48*, 58
36 4/22	3.6	Rational Functions	3.6: ex. 9, 13, 17, 21, 25, 27, 39-67 odd	68, 70
37 4/24	3.7	Variation	3.7: ex. 15, 19, 21, 23, 29, 33, 35, 37	18, 24, 43*
38 4/28	10.2	Parabolas	10.2: ex. 37-51 odd	50*, 52
39 4/29	10.4	Hyperbolas	10.4: ex. 29, 33, 37, 41, 43-51 odd, 73, 75	44*, 50
40 5/1	10.4	Hyperbolas	10.4: ex. 29, 33, 37, 41, 43-51 odd, 73, 75	44*, 50
41 5/5		*REVIEW*		
42 5/6		*REVIEW*		
		FINAL EXAM	5/10/25 - 5/16/25	

Updated by Professor M. Potocki-Dul - 1/16/2025
Department of Mathematical Sciences Course Syllabus, Spring 2024