

MATH 108: University Mathematics I B

Spring 2022 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.

DMS Online Exam Policy Spring 2022: In the event it is determined that DMS will conduct Common Exams online during Spring 2022, those exams will be administered in Canvas with proctoring using both Respondus LockDown Browser+Monitor on a computer (PC or Mac only; iPad and Chromebooks are not currently supported) and Webex on a phone or secondary device.

Please be sure you read and fully understand our [DMS Online Exam Policy](#).

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 A. DeBarros
Math 108-004	Professor A. DeBarros

Office Hours for All Math Instructors: [Spring 2022 Office Hours and Emails](#)

Required Textbook:

Title	<i>Precalculus - A Right Triangle Approach</i>
Author	Ratti and McWaters
Edition	4th

Publisher	Pearson
ISBN #	MyMathLab + Bound: 9780134851013
Notes	w/ MyMathLab

University-wide Withdrawal Date: The last day to withdraw with a W is **Monday, April 4, 2022**. 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 Midterm Exam I	15%
Common Midterm Exam II	15%
Common Midterm Exam III	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	55 - 69
B	80 - 84	F	0 - 54

C+	75 - 79		
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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."

Homework: Homework is an expectation of the course. All written homework for the session is listed, by section. 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.

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 Midterm Exam I	February 9, 2022
Common Midterm Exam II	March 9, 2022
Common Midterm Exam III	April 20, 2022
Final Exam	May 6 - May 12, 2022

The time of the midterm exams is **4:15-5:40 PM** for daytime students and **5:45-7:10 PM** for evening students. 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: To properly report your absence from a midterm or final exam, please review and follow the required steps under the DMS Examination Policy found here:

http://math.njit.edu/students/policies_exam.php

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 2022 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 are in need of accommodations due to a disability please contact Scott Janz, Associate Director of Disability Support Services at 973-596-5417 or via email at scott.p.janz@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/studentsuccess/accessibility/>

Important Dates (See: [Spring 2022 Academic Calendar](#), Registrar)

Date	Day	Event
January 18, 2022	Tuesday	First Day of Classes
January 22, 2022	Saturday	Saturday Classes Begin
January 24, 2022	Monday	Last Day to Add/Drop Classes
March 14, 2022	Monday	Spring Recess Begins
March 19, 2022	Saturday	Spring Recess Ends
April 4, 2022	Monday	Last Day to Withdraw
April 15, 2022	Friday	Good Friday - No Classes
April 17, 2022	Sunday	Easter Sunday - No Classes
May 3, 2022	Tuesday	Friday Classes Meet
May 3, 2022	Tuesday	Last Day of Classes
May 4 - May 5, 2022	Wednesday and Thursday	Reading Days
May 6 - May 12, 2022	Friday to Thursday	Final Exam Period

Course Outline

Lecture	Section #	Topic	Assignment
1	P1	Real Numbers and their Properties	P1: ex. 82, 84, 86, 102, 104, 106, 108, 130-160 even
2	P2	Integer Exponents, and Scientific Notation	P2: ex. 10-94 even, 101-110
3	1.1	Linear equations in one variable	1.1: ex. 9-13, 15,17, 23-35 odd,37-47, 49-55 odd, 61, 63, 65, 68
4	8.1	Systems of Equations	8.1: ex. 59-75 odd 97, 99, 101

5	1.2	Applications of Linear Equations	1.2: ex. 9-12, 20-34 even, 37-46, 47-59 odd, 60, 63,67, 69
6	P6	Rational Exponents and Radicals	P6: ex. 26-62 even, 86-94 even, 64-74 even, 78, 80, 82, 96-112 even
7	P3	Polynomials	P3: ex. 18-28 even, 32-42 even, 54, 72, 95
8	P4	Factoring Polynomials	P4: ex. 28-34 even, 38-48 even, 66-84 even, 94-106 even
9		<i>CATCH UP AND REVIEW</i>	
		EXAM #1	
10	P4	Factoring Polynomials (continue)	P4: ex. 28-34 even, 38-48 even, 66-84 even, 94-106 even
11	1.3	Quadratic Equations (Factoring/Quadratic Formula)	1.3: ex. 20-30 even, 48-52 even, 91, 93
12	1.3	Quadratic Equations (Completing the square)	1.3: ex. 32-38 even, 42-46 even, 54-64 even, 68-78 even, 97, 104
13	1.4	Complex Numbers	1.4: ex 10-36 even, 40-50 even, 54-62 even
14	P5	Rational Expressions	P5: ex. 26, 30, 34, 36, 38, 48, 50, 56, 60, 70-76 even, 86, 88, 90, 92
15	1.5	Solving other types of equations	1.5: ex. 20-24 even, 30-36 even,
16	1.5	Solving other types of equations	1.5: ex. 40-58 even, 64,66, 70-80 even
17	1.6	Inequalities	1.6: ex. 12, 20, 24, 32, 51, 57, 59, 65, 67-77 odd, 95-105 odd
18	1.7	Absolute Value Equations and Inequalities	1.7: ex: 14, 16, 26, 28, 34, 36, 38-52 even
19	1.7	Absolute Value Equations and Inequalities	1.7: ex. 54-72 even, 79
20	2.1	The Coordinate Plane	2.1: ex. 15-21 odd, 35, 37, 41
21		<i>CATCH UP AND REVIEW</i>	
		EXAM #2	
22	2.2	Graphs	2.2: ex. 22-28 even, 35, 37-46, 53, 57, 67, 70, 76, 81,83, 89, 91
23	2.3	Lines	2.3: ex. 9, 13, 27, 34-46 even, 51-54, 79-87 odd, 93,96-104 even
24	2.4	Functions	2.4: ex. 9, 12, 14, 15, 20, 32, 43, 44, 51-54, 70, 79-84
25	2.5	Properties of Functions	2.5: ex. 9-16, 35-39 odd, 57-67 odd, 107-110
26	2.6	Library of Functions	2.6: ex. 9, 11, 17, 25, 31, 35, 41
27	2.7	Transformations of Functions	2.7: ex. 9-19 odd, 23-34, 36-58 even, 63, 69

28	2.7	Transformations of Functions	2.7: ex. 75-82, 83-94, 95-105
29	2.8	Combining Functions; Composite Functions	2.8: ex. 9-20, 23, 32, 39, 47, 49, 62, 67, 69, 73, 76, 77
30	2.9	Inverse Functions	2.9: ex. 9-16, 17, 25, 26, 29, 33, 57-60, 67-77 odd
31	3.1	Quadratic Functions	3.1: ex. 9-16, 21, 27, 29, 31, 51, 55, 65, 67, 79, 81
32	3.2	Polynomial Functions	3.2: ex. 9-14, 29-34, 37, 48, 64, 65, 87
33		<i>CATCH UP AND REVIEW</i>	
		EXAM #3	
34	3.3	Dividing Polynomials	3.3: ex. 9-16, 17-29 odd, 35-41 odd, 49, 51
35	3.6	Rational Functions	3.6: ex. 9-26, 28, 32, 35-51 odd, 53-58
36	3.6	Rational Functions	3.6: ex. 59-71 odd
37	3.7	Variation	3.7: ex. 9-23, 29-41 odd
38	10.2	Parabolas	10.2: ex. 17-47 odd
39	10.4	Hyperbolas	10.4: ex. 17-27 odd, 29-53 odd, 69, 71-75 odd
40		<i>CATCH UP AND REVIEW</i>	
41		<i>CATCH UP AND REVIEW</i>	
42		<i>REVIEW</i>	
		FINAL EXAM	

Updated by Professor M. Potocki-Dul - 1/5/2022
Department of Mathematical Sciences Course Syllabus, Spring 2022