

MATH 108-W01: University Mathematics I B

Winter 2019 - 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: 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. Effective From: Spring 2009.

Number of Credits: 4

Prerequisites: None.

Course-Section and Instructors

Course-Section	Instructor
Math 108-W01	Professor K. Carfora

Days, Times, and Locations:

Days	Times	Locations
M, T, W, R, F	9:00AM - 11:45PM	CKB 320
M, T, W, R, F	12:45PM - 3:15PM	CKB 320

Required Textbook:

Title	<i>Precalculus - A Right Triangle Approach</i>
Author	Ratti and McWaters
Edition	4th
Publisher	Pearson
ISBN #	978-0134851013
Notes	w/ MyMathLab

University-wide Withdrawal Date: Please note that the last day to withdraw with a W is Wednesday, January 8, 2020. 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 many practical applications of systems of equations, (d) gain experience in the use of partial fraction decomposition, (e) learn about logarithmic and exponential functions and understand their application in the areas of science and engineering. (f) Students should gain an appreciation for the importance of trigonometry in scientific, engineering, and other applications.

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	15%
Quizzes	15%
Midterm Exam	30%
Final Exam	40%

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

A	85 - 100	C	65 - 74
B	80 - 84	D	55 - 64
C+	75 - 79	F	0 - 54

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 is an expectation of the course. All written homework for the session is listed, by section, above. On line homework will also be 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.

Quiz Policy: Quizzes will be given at the professor's discretion approximately once a week 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 one midterm exams held in class during the semester and one comprehensive final exam. Exams are held on the following days:

Midterm Exam	January 6, 2020
Final Exam	January 17, 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 EXAMS during the semester. In the event the Final Exam is not taken, under rare circumstances where the student has a legitimate reason for missing the final exam, a makeup exam will be administered by the math department. In any case the student must notify the Math Department Office and the Instructor that the exam will be missed and present written verifiable proof of the reason for missing the exam, e.g., a doctors note, police report, court notice, etc., clearly stating the date AND time of the mitigating problem.

ADDITIONAL RESOURCES

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](#).

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Important Dates (See: [Winter 2019-20 Academic Calendar](#), Registrar)

Date	Day	Event
December 26, 2019	R	Winter Session Classes Begin
December 28, 2019	Sa	Last Day to Add/ Drop
Dec. 31, 2019 & Jan. 1, 2020	T & W	No Classes/ University Closed
January 8, 2020	W	Last Day to Withdraw
January 17, 2020	F	Last Day of Winter Session/ Final Exams

Course Outline

Lecture	Section #	Topic	Assignment
DAY 2 F 12/27	P6	Square Roots	P6: ex 25, 31, 51, 61, 69, 71
	P3	Polynomials	P3: ex. 18-28 even, 32-42 even, 54, 72, 95
	P4	Factoring Polynomials	P4: ex. 28-34 even, 38-48 even, 66-84 even, 94-106 even
DAY 3 M	1.3	Quadratic Equations	1.3: ex. 20-38 even, 42-64 even, 68-78 even, 91, 93, 104

12/30	1.4	Complex Numbers	1.4: ex. 10-36 even, 40-50 even
DAY 4 R 1/2	P5	Rational Expressions	P5: ex. 26-38 even, 48, 50, 56, 60, 70-76 even, 86, 90, 92
	P6	Rational Exponents and Radicals	P6: ex. 26-74 even, 78-112 even
DAY 5 F 1/3	1.5	Other Types of Equations	1.5: ex. 20-24 even, 30-36 even, 40-58 even, 64-80 even
	1.6	Inequalities	1.6: ex. 20, 24, 32, 51, 57, 59, 65, 67-77 odd, 95-105 odd
	1.7	Absolute Value Equations and Inequalities	1.7: 14, 16, 26, 28, 34, 36, 54-72 even, 79
DAY 6 M 1/6		Catch up and Review	
		MIDTERM EXAM	
DAY 7 T 1/7	2.1	The Coordinate Plane	2.1: ex. 15-21 odd, 35, 37, 41
	2.2	Graphs	2.2: ex. 22-28 even, 35, 37-46, 53, 57, 67, 70, 76, 81, 83, 89, 91
	2.3	Lines	2.3: ex. 33, 37, 47, 53, 60, 67, 73
	8.1	Systems of Linear Equations	8.1: ex. 59-75 odd, 97, 99, 101
DAY 8 W 1/8	2.4	Functions	2.4: ex. 9, 12, 14, 15, 20, 32, 43, 44, 51-54, 70, 79-84
	2.5	Properties of Functions	2.5: ex. 9-16, 35-39 odd, 57-67 odd, 107-110
	2.6	Library of Functions	2.6: ex. 9, 11, 17, 25, 31, 35, 41
DAY 9 R 1/9	2.7	Transformations of Functions	2.7: ex. 9-19 odd, 23-34, 36-58 even, 63, 75-94, 95-105
	2.8	Combining/Composite Functions	2.8: ex. 9-20, 23, 32, 39, 47, 49, 62, 67, 69, 73, 76, 77
DAY 10 F 1/10	2.9	Inverse Functions	2.9: ex. 9-16, 17, 25, 26, 29, 33, 55, 57, 67-77 odd
	3.1	Quadratic Functions	3.1: ex. 9-16, 21, 27, 29, 31, 51, 55, 65, 67, 79, 81
DAY 11 M 1/13	3.2	Polynomial Functions	3.2: ex. 9-14, 29-34, 37, 48, 64, 65, 87
	3.3	Dividing Polynomials	3.3: ex. 9-29 odd, 35-41 odd, 49, 51
DAY 12 T 1/14	3.6	Composite Functions	3.6: ex. 9-26, 28, 32, 35-51 odd, 53-58, 59-73 odd
	3.7	Variation	3.7: ex. 9-13, 29-41 odd
DAY 13 W 1/15	10.2	Parabolas	10.2: ex. 17-31 odd, 37-47 odd
	10.4	Hyperbolas	10.4: ex. 17-27 odd, 29-53 odd, 69, 71-75 odd
DAY 14 R 1/16		Catch Up and Review	
DAY 15 F 1/17		Review	
		FINAL EXAM	