Fall 2019

MATH 110-001: University Mathematics B II - Trigonometry

R. Obaisi

NJIT New Jersey's Science & Technology University

THE COLLEGE OF SCIENCE AND LIBERAL ARTS

THE DEPARTMENT OF MATHEMATICAL SCIENCES

MATH 110: University Mathematics B II - Trigonometry
Fall 2019 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. Trigonometric functions and identities, laws of sines and cosines, logarithmic equations, systems of nonlinear equations, polar coodinates.

Number of Credits: 4

Prerequisites: MATH 108 or placement by performance on standardized entrance examinations.

Course-Section and Instructors

Course-Section	Instructor
Math 110-001	Professor R. Obaisi
Math 110-003	Professor N. Tsipenyuk
Math 110-005	Professor L. Feng
Math 110-009	Professor J. Stone
Math 110-011	Professor J. Stone
Math 110-013	Professor A. Feknous
Math 110-017	Professor C. Taylor
Math 110-019	Professor S. Erfani

Office Hours for All Math Instructors: Fall 2019 Office Hours and Emails

Required Textbook:

Title	*Precalculus - A Right Triangle Approach*
Author	Ratti and McWaters
Edition	4th
Publisher	Pearson
ISBN #	9780134851013

Notes	w/ MyMathLab

REQUIRED TEXTBOOK #2: *Precalculus*, Abramson: https://openstax.org/details/books/precalculus

University-wide Withdrawal Date: The last day to withdraw with a **W** is **Monday, November 11, 2019**. 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:

Homework and Quizzes	15%
Common Midterm Exam I	15%
Common Midterm Exam II	20%
Common Midterm Exam III	20%
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."

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

- Online homework will be in My Math Lab sections listed will be in conjunction with your text.

Quizzes Policy: Quizzes will be given 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 three common midterm exams held during the semester and one comprehensive common final exam. Exams are held on the following days:

Common Midterm Exam I	September 25, 2019
Common Midterm Exam II	October 23, 2019
Common Midterm Exam III	November 20, 2019
Final Exam Period	December 14 - 20, 2019

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

Mandatory Tutoring Policy: Based upon academic performance indicating a significant gap in understanding of the course material, students may receive a notice of being assigned to mandatory tutoring to assist in filling the gap. A student will have 2 points deducted from the course average for each instance in which the required tutoring is not completed by the stated deadline.

Cellular Phones: All cellular phones and other electronic devices must be switched off and put away during all class times.

ADDITIONAL RESOURCES

Math Tutoring Center: Located in the Central King Building, Lower Level, Rm. G11 (See: Fall 2019 Hours)

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 Fenster Hall Room 260. 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: Fall 2019 Academic Calendar, Registrar)

Date	Day	Event
September 3, 2019	T	First Day of Classes
September 13, 2019	M	Last Day to Add/Drop Classes
November 11, 2019	M	Last Day to Withdraw
November 26, 2019	T	Thursday Classes Meet
November 27, 2019	W	Friday Classes Meet
November 28 - December 1, 2019	R - Su	Thanksgiving Recess
December 11, 2019	W	Last Day of Classes
December 12 & 13, 2019	R & F	Reading Days
December 14 - 20, 2019	Sa - F	Final Exam Period

Course Outline

Lecture	Sections	Topics	Hand-In Homework Problems	Additional Practice Problems
1	P.1,P.2, P.3, P.4, P5, P.6, 1.1, 1.2, 1.3, 1.5	Introduction to the course Algebra Review		Textbook Problems
2	P.1,P.2, P.3, P.4, P5, P.6, 1.1, 1.2, 1.3, 1.5	Algebra Review Continued		
3	4.1	Exponential Functions	24, 26, 37, 56, 61, 65, 69, 80, 85, 95, 96	4.1: 25,31,45- 49,51
4	4.2	Logarithmic Functions	40, 50, 52, 58, 92, 104, 96, 112, 119	4.2: 33,37,45,49,55,61,75,85,91
5	4.3	Rules of Logarithms	17, 19, 38, 54, 82, 84, 97	4.3: 13,15,33,41,67,69,89
6	4.4	Exponential and Log Equations	24, 26, 38, 47, 48, 68, 78	4.4: 21,29,33,39, 53-63 odd
7	5.1	Angles and their Measures	32, 65, 68, 72, 90, 91, 96 Application Problem 5.1	5.1: 9,13,35,39,55,57,61, 69,73,77
8		APPLICATION 1: PULLEY SYSTEM PROJECT	Problems in Packet	
9	5.2	Right Triangle Trigonometry	12, 16, 34, 42, 46, 52, 90, 92	5.2: 7,9,17,27,33,39,43,49, 55,59,89
10		CATCH UP AND REVIEW COMMON EXAM 1 - SEPT. 25, 2019	Application Problem 5.2	
11	5.3	Trigonometric Functions of any Angle	16, 24, 36, 41, 45, 47, 59	5.3: 19,23,65,75
12	5.3	Trigonometric Functions of any Angle	79, 91, 102	5.3: 44,47,57,88,89
13	5.4	Graphs of Sine and Cosine	20, 21, 38, 45, 49, 60, 64, 83, 84 Application Problem 5.4	5.4:24,52,56,59,70,79,87,91
14	5.5	Graphs of Other Trig. Functions	26, 46, 51, 53	5.5: 29,37, 54, 58
15	5.6	Inverse Trigonometric Functions	12, 20, 22, 40, 44, 46, 64 Application Problems 5.6	5.6: 9,11,17,21,27,33 ,35,37,47,51,65,69,81,85
16	6.1	Verifying Identities	12, 16, 22, 24, 32, 38, 48, 61, 83 Application Problems 6.1	6.1:13,23,25-35 odd, 59,63,71,81,95,96, 97
17	6.2	Sum and Difference Formulas	24, 30, 44, 70 Application Problems 6.2	6.2: 9,11,15,22,25,29 ,41,51, 63,113
18		APPLICATION 2: ROLLING WHEEL PROBLEM	Problems in Packet	
19	6.3	Double Angle/Half Angle Formulas	18, 27, 28, 41, 43, 49, 52, 56 Application Problem 6.3	6.3: 7,13,23,33,35,37,45,47,55,57,59, 91
20		CATCH UP AND REVIEW COMMON EXAM II - OCT. 23, 2019		

21	6.5	Trig Equations I	16, 42, 50, 64, 76	6.5: 7-15 odd,17,23, 46,47,52,55,61,67,77,81
22	6.6	Trig Equations II	14, 20, 78, 84	6.6: 7-25 odd,85
23	7.1	Law of Sines	44, 73, 89 Application Problems 7.1	7.1: 17, 21-29 odd,61
24	7.2	Law of Cosines	10, 16, 22, 63, 66 Application Problems 7.2	7.2: 9,11,18,19,35 (HW may require calculator)
25	7.3	Areas of Polygons Using Trigonometry	10, 12, 40, 54 Application Problems 7.3	7.3:27,35,56 (HW may require calculator)
26		CATCH UP AND REVIEW		
27	2.2	Circles	80, 84, 86, 88, 90	2.2: 75,77,79,81,85,92
28	10.3	The Ellipse	10, 18, 30, 36, 58	10.3: 13,19,27,31,41,45,49
29	7.6	Polar Coordinates	12, 32, 40, 41, 49, 51, 53, 60	7.6: 13,19,25,29,31,37,43,46
30	7.6	Polar Coordinates	72, 74, 76, 78	7.6: 57,61,63,65,67,71,73
31	8.1	Systems of Linear Equations in Two Variables	62, 66, 76, 78 Application Problem 8.1	8.1:39,45,51,55,57,69,71, 95, 99
32	8.2	Systems of Linear Equations in Three Variables	22, 26 Application Problem 8.2	8.2: 9,11, 23, 29
33		CATCH UP AND REVIEW COMMON EXAM III - NOV. 20, 2019		
34	8.3	Partial Fraction Decomposition	20, 22, 32, 56	8.3: 17,19,21,25,39
35	8.3	Partial Fraction Decomposition	78, 84	8.3: 59,61,69
36	8.4	Systems of Non-Linear Equations	20, 34, 46, 50, 62, 68, 72 Application Problems 8.4	8.4:15,21,31,41,45,65,69
37	Open Stax Section 12.1	Finding Limits – Numerical and Graphical Approaches	Assignment 12.1	
38	Open Stax Section 12.2	Finding Limits: Properties of Limits	Assignment 12.2	
39				
40		CATCH UP AND REVIEW		
		FINAL EXAM	FINAL EXAM WEEK: DEC. 14 - 20	