MATH 110: University Mathematics B II - Trigonometry
Summer 2023 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 coordinates.

Number of Credits: 4

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

Course-Section and Instructors:

Course-Section	Instructor
Math 110-031	Professor I. Peltekov

Office Hours for All Math Instructors: 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: Please see the Summer 2023 Academic Calendar for the last day to withdraw based on the summer session you are registered for.

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 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**	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.

Homework: Homework is an expectation of the course, and late assignments will not be accepted. All homework for the summer session is listed, by section, below.

- Online homework will be located in My Math Lab sections listed in conjunction with your text.
- All Written homework will be uploaded in Canvas as a .pdf file.

Quiz 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. Most quizzes will require the Respondus Lockdown Browser with a .pdf file. Upload after the quiz is completed.

Exams: There will be TWO common midterm exams held during the semester and one comprehensive common final exam. The exams will require the Respondus Lockdown Browser with a .pdf file. Upload after the exam is completed. Exams are held on the following days:

Midterm Exam I	June 14, 2023
Midterm Exam II	July 19, 2023
Final Exam	August 7, 2023

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: Summer 2023 Hours)

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/accessibility/

Important Dates (See: Summer 2023 Academic Calendar, Registrar)

Date	Day	Event
May 22, 2023	Monday	**Full, First, and Middle Summer** Session Begins
May 24, 2023	Wednesday	Last Day to Add/Drop for **First Summer** Session
May 26, 2023	Friday	Last Day to Add/Drop for **Middle Summer** Session
May 29, 2023	Monday	Last Day to Add/Drop for **Full Summer** Session
May 29, 2023	Monday	Memorial Day - University Closed/No Classes Scheduled
June 10, 2023	Saturday	Last Day to Withdraw from **First Summer** Session
June 16, 2023	Friday	Last Day to Withdraw from **Middle Summer** Session
June 16, 2023	Friday	Juneteenth - University Closed/No

		Classes Scheduled
June 26, 2023	Monday	Last Day of Classes for **First Summer** Session
June 30, 2023	Friday	Last Day to Withdraw from **Full Summer** Session
July 4, 2023	Tuesday	Independence Day - University Closed/No Classes Scheduled
July 5, 2023	Wednesday	**Second Summer** Session Begins
July 6, 2023	Thursday	Last Day to Add/Drop for **Second Summer** Session
July 17, 2023	Monday	Last Day of Classes for **Middle Summer** Session
July 20, 2023	Thursday	Last Day to Withdraw for **Second Summer** Session
August 8, 2023	Tuesday	Last Day of Classes for **Full and Second Summer** Session

Course Outline

Lecture	Section	Topic	MyLab Math (Online)	Hand-In Written (Canvas)	Additional Recommendation
1	P.1-P.6 1.1-1.5	*Introduction to the Course Algebra Review*	*Initial Algebra Assessment and Orientation*		*1.1 (30, 43, 52, 55) 1.2 (51, 52)* *1.3 (15, 31, 42, 57, 59)*
2	4.1	*Exponential Functions*	*4.1 (21, 22, 35, 39, 41, 43-46, 111)* *P.2 (41)*	*4.1 (24, 26, 56, 80, 96)*	*4.1 (25, 31, 37, 45-49, 51, 65, 69, 85, 95)*
3	4.2	*Logarithmic Functions*	*4.2 (33-45 odd, 49, 51, 55, 59, 61, 71, 93)* *P.6 (109)*	*4.2 (40, 50, 52, 58, 92, 104, 96, 112, 119)*	*4.2 (85, 91)*
4	4.3	*Rules of Logarithms*	*4.3 (11, 13, 15, 17, 31, 39, 53, 59, 83, 93)*	*4.3 (17, 38, 54, 82, 84)*	*4.3 (13, 15, 19, 33, 41, 67, 69, 89, 97)*
5	4.4	*Exponential and Log Equations*	*4.4 (11, 21, 39, 45, 61, 63, 65, 67, 69, 73)*	*4.4 (24, 26, 38, 48, 68, 78)*	*4.4 (29, 33, 39, 47, 53-59 odd)*
6	5.1	*Angles and their*	*5.1 (13, 15, 17,*	*5.1 (32, 68, 72, 90,*	*5.1 (9, 35, 39, 55,*

		Measures	33-41 odd, 65, 67, 73, 75, 77, 83, 91-103 odd)	96) *Application Problem 5.1*	57, 61, 69, 91)
7		*Pulley System Project*		Problems in Packet	
8	5.2 5.3	*Right Triangle Trigonometry Trigonometric Functions of any Angle*	5.1 (13, 15, 17, 33-41 odd, 65, 67, 73, 75, 77, 83, 91-103 odd)	5.2 (12, 16, 34, 42, 46, 52, 90, 91, 92) *Application Problem 5.2 5.3 (16, 24, 36)*	5.2 (7 ,9, 17, 33, 39, 43, 49, 55, 59, 89)5.3 (23, 41, 45, 47, 59, 65, 75)
9	CATCH UP AND REVIEW				
10	5.3	*Trigonometric Functions of any Angle*	5.1 (13, 15, 17, 33-41 odd, 65, 67, 73, 75, 77, 83, 91-103 odd)	5.3 (88, 102)	5.3 (44, 47, 57, 79, 89, 91)
	EXAM 1				
11	5.4	*Graphs of Sin and Cos*	5.4 (11, 19, 27, 31, 37, 49, 59, 69, 81, 93, 95)	5.4 (20, 38, 60, 64, 84) *Application Problem 5.4*	5.4 (4, 21, 45, 52, 56, 59, 70, 79, 83, 87, 91)
12	5.5	*Graphs of other Trigonometric Functions*	5.5 (9, 25, 27, 43, 47, 51, 53, 59)	5.5 (26, 46)	5.5 (29,37, 54, 58)
13	5.6	*Inverse Trigonometric Functions*	5.6 (9-21 odd, 43, 45, 63, 83, 85)	5.6 (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)
14	6.1	*Verifying Identities*	6.1 (11, 13, 15, 17, 21, 22, 35, 43, 51, 59, 81)	6.1 (12, 16, 24, 32, 38, 48) *Application Problems 6.1*	6.1 (23, 25-31 odd, 63, 71, 95, 96, 97)
15	6.2	*Sum and Difference Formulas*	6.2 (9, 17, 23, 29, 30, 45, 47, 49, 53, 55, 65, 95, 97)	6.2 (24, 30, 44, 70) *Application Problems 6.2*	6.2 (11, 15, 22, 25, 29, 41, 51, 63, 113)
16		*Application 2: Rolling Wheel Problem*		Problems in Packet	
17	6.3	*Double Angle/Half Angle Formulas*	6.3 (9, 11, 15, 17, 39, 51, 53, 65)	6.3 (18, 27, 28, 52, 56) *Application Problem 6.3*	6.3 (7, 13, 23, 27, 33, 35, 37, 41-49 odd, 47, 55, 57, 59, 91)

18	6.5	*Trig Equations I*	*6.5 (9, 11, 15, 17, 41, 49, 63, 71, 75)*	*6.5 (16, 42, 50, 64, 76)*	*6.5 (7-15 odd, 17, 23, 46, 47, 52, 55, 61, 67, 77, 81)*
19	6.6	*Trig Equations II*	*6.6 (9, 13, 15, 19, 23, 27, 71, 73)*	*6.6 (14, 20, 78, 84)*	*6.6 (7-25 odd, 85)*
20	7.1	*Law of Sines*	*7.1 (11, 21, 23, 25, 33, 84)*	*7.1 (44, 73, 89)* *Application Problem 7.1*	*7.1 (17, 21-29 odd,61, 73, 89)*
21	7.2	*Law of Cosines*	*7.2 (11, 19, 21, 29, 33, 47, 56, 61, 66, 67, 73, 76, 77)*	*7.2 (10, 16, 22, 66)* *Application Problems 7.2*	*7.2 (9, 11, 18, 19, 35, 63) may require calculator*
22	7.3	*Areas of Polygons Using Trigonometry*	*7.3 (11, 15, 25, 33, 35, 37, 39, 41, 45)*	*7.3 (10, 12, 40, 54)* *Application Problems 7.3*	*7.3 (27, 35, 56) may require calculator*
23	2.2	*Circles*	*2.2 (75, 79, 83-93 odd)*	*2.2 (80, 84, 86, 88, 90)*	*2.2 (75, 77, 79, 81, 85, 92)*
24	CATCH UP AND REVIEW				
25	10.3 7.6	*The Ellipse Poloar Coordinates*	*10.3 (9, 11, 13, 23, 35, 51, 53)*	*10.3 (10, 18, 30, 36, 58) 7.6 (12, 32, 40)*	*10.3 (13, 19, 27, 31, 41, 45, 49) 7.6 (13, 19, 25, 29, 31, 37, 41, 43, 46, 49)*
	COMMON EXAM 2				
26	7.6	*Polar Coordinates*	*7.6 (11, 31, 33, 41, 55, 59, 61, 65, 67, 69, 77)*	*7.6 (72, 74, 76, 78)*	*7.6 (57,60, 63, 65, 67, 71, 73)*
27	8.1	*Systems of Linear Equations in Two Variables*	*8.1 (17, 59, 61, 67, 71, 83, 85, 89, 91-97 odd, 109, 111)*	*8.1 (62, 66, 76, 78)* *Application Problem 8.1*	*8.1 (39, 45, 51, 55, 57, 69, 71, 95, 99)*
28	8.2 8.3	*Systems of Linear Equations in Three Variables*	*8.2 (13, 25, 51, 63)*	*8.2 (22, 26)* *Application Problem 8.2 8.3 (20, 22, 32, 56)*	*8.2 (9, 11, 23, 29) 8.3 (17, 19, 21, 25, 39)*
29	8.3	*Partial Fraction Decomposition*	*8.3 (11-15 odd, 33, 59, 63, 65, 79)*	*8.3 (78, 84)*	*8.3 (17, 19, 21, 25, 39)*
30	8.4	*Systems of NonLinear Equations*	*8.4 (11, 45, 47, 49, 51, 59, 61, 67)*	*8.4 (20, 34, 46, 50, 62, 68, 72)* *Application Problems 8.4*	*8.4 (15, 21, 31, 41, 45, 65, 69)*
31	Open	*Finding Limits:*		*Assignment 12.1*	

	Stax Section 12.1	*Numerical and Graphical Approaches*			
32	Open Stax Section 12.2	*Finding Limits: Properties of Limits*		*Assignment 12.1*	
	CATCH UP AND REVIEW				
	FINAL EXAM				