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
Summer 2021 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 Summer 2021: Exams will be proctored using both Respondus LockDown Browser+Monitor and Webex. Students will be required to join a Webex meeting from their phone with their cameras on, and to access the exam through LockDown Browser on a Mac or Windows PC with webcam. Students must follow all instructions related to environment checks and camera positioning.

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 110-030	Professor J. Hayes

Office Hours for All Math Instructors: Summer 2021 Office Hours and Emails

Required Textbook:

Title	*Precalculus - A Right Triangle Approach*
Author	Ratti and McWaters
Edition	4th
Publisher	Pearson
ISBN #	978-0134851013
Notes	**w/ MyMathLab**
Required Textbook #2	Precalculus, by Abramson: https://openstax.org/details/books/precalculus

Withdrawal Date: Please see the Summer 2021 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:

Common Midterm Exam I	20%
Common Midterm Exam II	20%
Quizzes	15%
All Homework and Other Required Course Worl	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.

Homework Policy: 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:

Common Midterm Exam I	June 16, 2021
Common Midterm Exam II	July 21, 2021
Final Exam	August 2, 2021

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.

ONLINE REQUIREMENTS

Course Lecture, Recitation, and Office Hours: The greatest effort to maintain the benefits of Face-to-Face instruction and interaction will be completed through the use of Regular lecture periods, recitation and office hours through the use of WebEx and other conferencing and communication tools. All of these tools require the use of a web camera, microphone and high-speed internet in order to fully engage with the class. Active participation and interaction are expected.

Recitation: Recitation will be conducted during Wednesday classes; students are expected to attend recitation sessions and will be required to submit work at the end of the session to ensure full recitation attendance.

Hand In Homework and Exercises: All written work will be submitted through Canvas (via file upload) under the appropriate assignment heading. All submitted documents must be in PDF format, or in the OneNote Class Notebook as indicated per assignment. All pdf submissions must be labeled as LASTNAME_FIRSTNAME_Assignment.pdf.

Quizzes will mostly take place on Canvas with the use of the Lockdown Browser and Respondus,. These measures ensure that testing integrity is maintained, and work can be accurately graded. It is recommended that you download Lockdown Browser and Respondus at the beginning of the course. Additional steps may need to be taken to allow for supporting work to be submitted.

Common Exams: Common exams will be administered with the use of the Lockdown Browser and Respondus. Additional steps may need to be taken to allow for supporting work to be submitted.

Tools for Uploading Files:

NJIT Recommendations for Scanning your work into a PDF. Scanning with the IOS Notes App Scanning with Google Drive App for Android

Requirements for Quiz and Test Taking

- You must have a Webcam for quiz and test taking.
- Desk must be clear of ALL textbooks, notebooks, calculators etc.
- You must show your blank sheets of paper (both sides) to the camera during the environment check.
- You must show you turning your phone and placing far away from your desk during the environment check.
- You must show your handwritten work to the camera before exiting Respondus/Lockdown Browser. Once you have uploaded your work in Canvas, you must check that the assignment is there.
- You should also check that you uploaded the proper assignment. Emailed or late submissions will not be accepted.

ADDITIONAL RESOURCES

Math Tutoring Center: Located in the Central King Building, Room G11 (See: Summer 2021 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 Chantonette Lyles, Associate Director of the Office of Accessibility Resources and Services at 973-596-5417 or via email at lyles@njit.edu. The office is located in Kupfrian Hall, Room 201. A Letter of Accommodation Eligibility from the Office of Accessibilty Resources and Services 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: Summer 2021 Academic Calendar, Registrar)

Date	Event
May 24, 2021	First Day of Classes for **FIRST, MIDDLE, AND FULL SUMMER SESSIONS**
May 26, 2021	Last Day to Add/Drop Classes for **FIRST SUMMER SESSION**
May 28, 2021	Last Day to Add/Drop Classes for **MIDDLE SUMMER SESSION**
May 31, 2021	Last Day to Add/Drop Classes for **FULL SUMMER SESSION**
May 31, 2021	University Closed for Memorial Day
June 28, 2021	Last Day of **FIRST SUMMER SESSION**
June 29, 2021	First Day of **FTF AND SUMMER SESSION**
July 4, 2021	University Closed for Independence Day
July 5, 2021	University Closed for Independence Day
July 7, 2021	First Day of **FTF SUMMER SESSION**
July 19, 2021	Last Day of **MIDDLE SUMMER SESSION**
August 2, 2021	Last Day of **FULL SUMMER SESSION**
August 16, 2021	Last Day of **FTF SUMMER SESSION**

Course Outline

Lecture	Sections	Topic	MyLab Math (Online)	Hand-In Written (Canvas)	Additional Recommended
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 Measures	5.1 (13, 15, 17, 33-41 odd, 65, 67, 73, 75, 77, 83, 91-103 odd)	5.1 (32, 68, 72, 90, 96) Application Problem 5.1	5.1 (9, 35, 39, 55, 57, 61, 69, 91)
7		Pulley System		Problems in Packet	

		Project			
8	5.2-5.3	Right Triangle Trigonometry Trigonometric Functions of any Angle	5.2 (9, 11, 19, 25, 26, 27, 37, 41, 55, 57, 61, 63, 86, 89, 93) 5.3 (9, 11, 19, 21, 25, 27, 29, 39, 42, 45, 79, 81, 87, 89, 91)	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	5.3 (47, 48, 49, 59, 61, 63, 65, 101, 114, 121)	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 Non-Linear 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 Stax Section12.1	Finding Limits: Numerical and Graphical Approaches		Assignment 12.1	
32	Open Stax Section12.2	Finding Limits: Properties of Limits		Assignment 12.2	
	CATCH-UP AND REVIEW				
	FINAL EXAM				