Welcome to

MATH 1230

TRIGONOMETRY

INSTRUCTOR:
Precious Andrew
pandrew@unm.edu
Office: AS123

OFFICE HOURS:
Tuesdays and Thursdays 12:45-1:30pm and Thurdays 2:45-5:15pm in-person at Valencia Campus, Room Arts and Sciences 123 (A123). I'm also available via Zoom during these times, or by appointment.

COURSE DESCRIPTION:
We will explore the definitions of the fundamental trigonometric functions using both the right triangle and unit circle approaches. We'll evaluate and graph these functions and prove trigonometric identities, including double angle identities. We'll study the inverse trigonometric functions and apply our knowledge of right-angle trigonometry and the laws of sines and cosines to applications. We'll wrap up the course with a study of complex numbers and 2D vectors.

PREREQUISITES:
C or better in Math 1220 or an appropriate placement test. Check with your advisor to make sure you meet the requirements.

Start by *exploring* our course at canvas.unm.edu.

Here you will find course information and the link to our etextbook: *Pre-calculus Mathematics for Calculus,* 7th Edition, Stewart, Redlin, Watson.

In Canvas you can also access other course materials.

The *grade you earn* will be based on the following assignments and scale:

Midterm Exam	**200 points**
Final Exam	**200 points**
Worksheets/Assignments	**200 points**
Poster Project	**50 points**
Total	**650 points**

A+: 97-100%	**A: 93-96%**	**A-: 90-92%**
B+: 87-89%	**B: 83-86%**	**B-: 80-82%**
C+: 77-79%	**C: 73-76%**	**C-: 70-72%**
D+: 67-69%	**D: 63-66%**	**D-: 60-62%**
F: < 60%		

For this class, *you will need* reliable internet access, a scanner or scanner app like AdobeScan or Camscanner, and a basic (non-graphing) calculator.

Late work is generally not accepted, but please contact me if you have special circumstances.

Attending class is essential. Please commit to attend every class meeting, unless there is an emergency. If you miss three classes, you may be dropped from the course. This is because students who miss this many class meetings rarely successfully complete the course. *In an online course, not submitting an assignment or quiz will be regarded as an absence.* Please communicate any special circumstances with me.

Students who fail to complete the week 1 orientation assignments may be dropped from the course.

MECS DIVISION CHAIR:
Andrew Taylor
ataylor18@unm.edu

ABOUT YOUR INSTRUCTOR:

I hope to see you in office hours! For now, here is a little about me. My name is Precious Andrew. Most students call me my first name, Precious, or Ms. Andrew if you prefer. I have been teaching mathematics at UNM since 2007. I have lived in *New Mexico* since I was a child, I studied at UNM,I love red chile, and I enjoy powerlifting.



TUTORING:

You can schedule an appointment for free in-person or online *tutoring*. Stop by the Learning Center in the UNM-Valencia Campus library, email tutor@unm.edu, call (505)228-8860, or visit the link to schedule an appointment –

https://outlook.office365.com/owa/calendar/TESTLearningCommons@unmm.onmicrosoft.com/bookings/

Grade mode and Withdrawals: You must select your grade mode (Letter Grade, CR/NC, or Audit) within the first 2 weeks of the semester. Students who withdraw after the deadline will receive a grade of W. If you do not withdraw (but stop attending), you may receive a failing grade. Make sure to drop the class on my.unm if you wish to do so. See the list of all deadlines: www.registrar.unm.edu

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"You can totally do this!"

Here are some additional *resources*:

UNM Valencia Library - http://valencia.unm.edu/library/

UNM Valencia Life Resources - http://valencia.unm.edu/students/student-resources.html

Veteran's Resource Center - vrc@unm.edu

PASOS Resource Center - (505) 925-8546, pasos@unm.edu. The Resource Center is an on-campus center that serves as a "one-stop" for all non-academic needs of UNM-Valencia students.

Here are some of the *student learning outcomes:*

By the end of the semester, students should be able to:

Course Goal #1: Communication
- **SLO 1:** Use correct mathematical notation and terminology.
- **SLO 2:** Read and interpret graphs.

Course Goal #2: Trigonometry of Real Numbers
- **SLO 1:** use the unit circle to define the six trigonometric functions.
- **SLO 2:** graph the sine, cosine, and tangent functions.
- **SLO 3:** fit a sine or cosine function to a given graph.

Course Goal #3: Trigonometry of Angles
- **SLO 1:** work with radians and to solve circular motion problems.
- **SLO 2:** solve right triangles. They will be able to draw a sketch in an applied problem when necessary.
- **SLO 3:** solve non-right triangles using the law of sines and the law of cosines.

Course goal #4: Analytic Trigonometry
- **SLO 1:** prove trigonometric identities.
- **SLO 2:** apply addition and subtraction, double-angle and half-angle formulas.
- **SLO 3:** graph the inverse sine, cosine, and tangent functions.
- **SLO 4:** solve problems that require the inverse trigonometric functions.
- **SLO 5:** solve trigonometric equations. These may require the formulas outlined in SLO 2.
- **SLO 6:** work with the trigonometric form of complex numbers.
- **SLO 7:** work with the Euler form $r \cdot e^{i\theta}$ of complex numbers.
- **SLO 8:** work with vectors in two dimensions.

Course goal #5: Analytic Geometry
- **SLO 1:** work with polar coordinates; this includes graphing in polar coordinates and transforming an equation with polar coordinates into one with rectangular coordinates, and vice versa.
- **SLO 2:** graph parametric equations in two dimensions that involve trigonometric functions.

University Policies:

Title IX:

The University of New Mexico and its faculty are committed to supporting our students and providing an environment that is free of bias, discrimination, and harassment. The University's programs and activities, including the classroom, should always provide a space of mutual respect, kindness, and support without fear of harassment, violence, or discrimination. Discrimination on the basis of sex includes discrimination on the basis of assigned sex at birth, sex characteristics, pregnancy and pregnancy related conditions, sexual orientation and gender identity. If you have encountered any form of discrimination on the basis of sex, including sexual harassment, sexual assault, stalking, domestic or dating violence, we encourage you to report this to the University. You can access the confidential resources available on campus at the LoboRESPECT Advocacy Center (https://loborespect.unm.edu), the Women's Resource Center (https://women.unm.edu), and the LGBTQ Resource Center (https://lgbtqrc.unm.edu).

If you speak with an instructor (including a TA or a GA) regarding an incident connected to discrimination on the basis of sex, they must notify UNM's Title IX Coordinator that you shared an experience relating to Title IX, even if you ask the instructor not to disclose it. The Title IX Coordinator is available to assist you in understanding your options and in connecting you with all possible resources on and off campus. For more information on the campus policy regarding sexual misconduct and reporting, please see https://policy.unm.edu/university-policies/2000/2740.html and CEEO's website.

If you are pregnant or experiencing a pregnancy-related condition, you may contact UNM's Office of Compliance, Ethics, and Equal Opportunity at ceeo@unm.edu. The CEEO staff will provide you with access to available resources and supportive measures and assist you in understanding your rights.

Credit-hour statement: This is a three credit-hour course delivered in an entirely asynchronous online modality over 16 weeks during the Spring 2025 semester. Please plan for a *minimum* of 18 hours per week to learn course materials and complete assignments.

Accessibility Statement and Accommodations:

UNM is committed to providing equitable access to learning opportunities for students with documented disabilities. As your instructor, it is my objective to facilitate an inclusive classroom setting, in which students have full access and opportunity to participate. To engage in a confidential conversation about the process for requesting reasonable accommodations for this class and/or program, please contact the UNM-Valencia Equal Access Services, at (505) 925-8910 and/or The Accessibility Resource Center at arcsrvs@unm.edu or by phone at 505-277-3506 (https://arc.unm.edu)

Schedule of Topics:

Week of	Topics	Textbook practice
Jan 20	Sec. 5.1 The Unit Circle	1-19,41-49
	Sec. 5.2 Trigonometric Functions	7-23,39-45,55-69,73,75
Jan 27	Sec. 5.3 Trigonometric Graphs I	3,7,11,15,19-23,31,35,36,37,39,43-49,51-53(graph by hand), 77
Feb 3	Sec. 5.4 Trigonometric Graphs II	3-13,17,19,23,27,29,35,39-43,47-53
	Sec. 5.5 Inverse Trigonometric Functions	3-11, 17, 23, 25, 31-41
Feb 10	Sec. 6.1 Angle Measure	5,7,13-17,21,27,29,45,47,51-57,61-67,71,73,79-85
	Sec. 6.2 Trigonometry of Acute Angles	3-7,11,15-21,31,35,47-59
Feb 17	Sec. 6.3 Trigonometric Functions of Angles	5-15,21,27,29,35-43,47-51,63,65
	Sec. 6.4 Inverse Trigonometric Functions II	1-17,21-27,33,35,39,41
Feb 24	Sec. 6.5 Law of Sines	3-9,17-21,33-41
Mar 3	Sec. 6.6 Law of Cosines	7-15,25,39-43,49,51
	Sec. 7.1 Identities	7,9,13-17,21,29-45,49,53,67,81,83,91-95
Mar 10	**Review**	
	Midterm Exam Friday, March 14th, 4pm-6pm	
Mar 17	***Spring Break***	
Mar 24	Sec. 7.2: Addition and Subtraction Formulas	21-33,59,61
	Project due Friday, March 28th	
Mar 31	Sec. 7.3 Double and Half Angle Formulas	5-13,25,29,37,41,55,57,73,74,75
Apr 7	Sec. 7.4 Trigonometric Equations	5-9, 13, 17, 19, 25, 31, 37, 41-53
	Sec. 7.5 Trigonometric Equations II	3, 9, 11, 17-25, 35b, 37b, 38b
Apr 14	Sec. 7.5 Finish	
	Sec. 8.1 Polar Coordinates	5-13,23-31,37-61
Apr 21	Sec. 1.6 Complex Numbers	21, 29-35, 39-69
	Sec. 8.3 Polar Form of a Complex Number	5-17,21-47,53-57,61-65
Apr 28	Sec. 8.3 Finish	
	Sec. 9.1 Vectors	5-21,33-47,53-59,67
May 5	Review	
	Final Exam Friday, May 9th, 4pm-6pm	

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