Welcome to Math 1230

TRIGONOMETRY

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

TUTORING/OFFICE HOURS:
Tuesdays 12:30-1:30pm and Tuesdays and Thursdays 4:15-5:45pm, or by appointment.

OFFICE: Arts and Sciences 123 (A123). **Zoom hours will be facilitated using the link posted in Canvas.**

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. (3 Credit Hours).

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 our textbook: *Pre-calculus Mathematics for Calculus,* 7th Edition, Stewart, Redlin, Watson.

THE GRADE YOU EARN WILL BE BASED ON THE FOLLOWING ASSIGNMENTS AND SCALE:

Midterm Exam	**25%**
Final Exam	**30%**
Worksheets	**30%**
Poster Presentation Project	**10%**
Discussion Board Videos & Other Assignments	**5%**
Total	**100%**

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, access to a printer, a scanner or scanner app like AdobeScan or Camscanner, and a scientific calculator.

LATE WORK is generally not accepted, but please contact me if you have special circumstances so we can discuss a plan to support your success.

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. Please communicate any special circumstances with me, as absences for professional events, religious or cultural holidays, athletics competitions, etc. can sometimes be excused with an alternative plan. Let's talk! **In an online course, not submitting an assignment or quiz will be regarded as an absence.**

MECS DIVISION CHAIR:
Andrew Taylor
ataylor19@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 at UNM-Valencia Campus, email tutor@unm.edu, call (505)228-8860, or visit the link to schedule an appointment – Tutoring Services

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: https://registrar.unm.edu/

"You can totally do this!"

AI Policy: Using generative AI to complete submitted coursework in this course will interfere with the advantages in learning and understanding that this course offers you. You are expected to complete submitted work without any generative AI assistance. The assignments in this course are aligned with specific learning processes and outcomes that support your future learning and expertise. Submitting AI-generated work in this course is inconsistent with course expectations and may violate UNM's academic integrity standards and Student Code of Conduct. If AI use is suspected, I will use submitted coursework, conversations with you about your work and process, and this syllabus to determine whether academic misconduct occurred. If you are unsure if a tool or use is allowed, please ask before submitting the assignment.

Here are some additional resources:

UNM-Valencia Campus Library Home Page :: Valencia Campus | The University of New Mexico

Veteran & Military Resource Center | The University of New Mexico

Pasos Resource Center :: Valencia Campus | The University of New Mexico (505) 925-8546. The Resource Center is an on-campus center that serves as a "one-stop" for all non-academic needs of UNM-Valencia students.

UNM IT Help Information: (505) 277-5757 for myUNM, NetID, and other IT needs.

Here are the student learning outcomes and essential skills:

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 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.

The New Mexico Higher Education Department (HED) defines the following three essential skills for general education mathematics courses. The unit assignments and assessments, including worksheets, discussion postings, exams, and the poster presentation, are designed to allow students the opportunity to demonstrate developing skills in these areas, as well as to demonstrate mastery of the student learning outcomes described above.

1. Communication
    a. Genre and Medium Awareness, Application, and Versatility: Identify and communicate in various genres and mediums (oral, written, and digital) using strategies appropriate for the rhetorical situations (i.e., attending to audience, purpose, and context).
    b. Strategies for Understanding and Evaluating Messages: Apply strategies such as reading for main points; seeking key arguments, counterarguments, rebuttals; locating supportive documentation for arguments; reading with a specific stakeholder lens; applying a theoretical lens (e.g. cultural, political, economic) to understand and evaluate messages in terms of the rhetorical situation (audience, purpose, and context).
    c. Evaluation and Production of Arguments: Evaluate the authority of sources in their own arguments and those of others; distinguish among supported claims, unsupported claims, facts, inferences, and opinions.

2. Quantitative Reasoning

    a. Communication/Representation of Quantitative Information: Express quantitative information symbolically, graphically, and in written or oral language.
    b. Analysis of Quantitative Arguments: Interpret, analyze and critique information or a line of reasoning presented by others.
    c. Application of Quantitative Models: Apply appropriate quantitative models to real world or other contextual problems.

3. Critical Thinking

    a. Problem Setting: Delineate a problem or question. Students state problem/question appropriate to the context.
    b. Evidence Acquisition: Identify and gather the information/data necessary to address the problem or question.
    c. Evidence Evaluation: Evaluate evidence/data for credibility (e.g. bias, reliability, and validity), probable truth, and relevance to a situation.
    d. Reasoning/Conclusion: Develop conclusions, solutions, and outcomes that reflect an informed, well-reasoned evaluation.

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 (Sarah Clawson, Coordinator), at (505) 925-8840 or by email at sjclawson@unm.edu. Also available is the Accessibility Resource Center at UNM-Albuquerque at arcsrvs@unm.edu or 505-277-3506. Communication is key. Please let me know early in the semester how I can best support your success in the course.

UAP 2720 and 2740. Our classroom and university should foster mutual respect, kindness, and support. If you have concerns about discrimination, harassment, or violence, please seek support and report incidents. Find confidential services at LoboRESPECT Advocacy Center, the Women's Resource Center, and the LGBTQ Resource Center. UNM prohibits discrimination on the basis of sex (including gender, sex stereotyping, gender expression, and gender identity). All instructors are "responsible employees" who must communicate reports of sexual harassment, sexual misconduct and sexual violence to Compliance, Ethics and Equal Opportunity. For more information, please see UAP 2720 and UAP 2740.

Credit-hour statement: This is a three credit-hour course delivered in an entirely asynchronous online modality over 16 weeks during the Fall 2026 semester. Please plan for a minimum of 18 hours per week to learn course materials and complete assignments.

Schedule of Topics:

Week of	Topics	Textbook Practice Problems
Aug 17	Sec. 5.1 The Unit Circle	1-19,41-49
	Sec. 5.2 Trigonometric Functions	7-23,39-45,55-69,73,75
Aug 24	Sec. 5.3 Trig Graphs I	3,7,11,15,19-23,31,35,36,37,39,43-49,51-53(by hand)
Aug 31	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
Sep 7	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
	Sec. 6.3 Trigonometric Functions of Angles	5-15,21,27,29,35-43,47-51,63,65
Sep 14	Sec. 6.4 Inverse Trigonometric Functions II	1-17,21-27,33,35,39,41
	Sec. 6.5 Law of Sines	3-9,17-21,33-41
Sep 21	Sec. 6.5 Law of Sines	3-9,17-21,33-41
	Sec. 6.6 Law of Cosines	7-15,25,39-43,49,51
Sep 28	Review	
	Midterm Exam (See details in Canvas)	
Oct 5	Work on poster project	
	Fall break Thursday and Friday	
Oct 12	Sec. 7.1 Identities	1-43
	Poster project due Friday, October 16th	
Oct 19	Sec. 7.2: Addition and Subtraction Formulas	21-33,59,61
	Sec. 7.3 Double and Half Angle Formulas	5-13,25,29,37,41,55,57,73,74,75
Oct 26	Sec. 7.3 Finish	
	Sec. 7.4 Trigonometric Equations	5-9,13, 17, 19, 25, 31, 37, 41-53
Nov 2	Sec. 7.5 Trigonometric Equations II	3, 9, 11, 17-25, 35b, 37b, 38b
	Sec. 8.1 Polar Coordinates	5-13,23-31,37-61
Nov 9	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
Nov 16	Sec. 8.3 finish	
	Sec. 9.1 Vectors	5-21,33-47,53-59,67
Nov 23	Sec. 9.2 Dot Product	5-35, 45-49
	Thanksgiving break Thursday and Friday	
Nov 30	Review	
	Final Exam (See details in Canvas)	