

Welcome to

# MATH 1230

TRIGONOMETRY

## INSTRUCTOR:

Precious Andrew  
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Office: AS123

## OFFICE HOURS/STUDY SESSIONS:

I'm available via Zoom Fridays 4-6pm, and 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](https://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
Total	600 points

A+: 96.5-100%	A: 92.5-96.4%	A-: 89.5-92.4%
B+: 86.5-89.4%	B: 82.5-86.4%	B-: 79.5-82.4%
C+: 76.5-79.4%	C: 72.5-76.4%	C-: 69.5-72.4%
D+: 66.5-69.4%	D: 62.5-66.4%	D-: 59.5-62.4%
F: < 59.5%		

For this class, **you will need**

reliable internet access, access to a printer (you can use one at the library) or a tablet, a scanner or scanner app like AdobeScan or CamScanner, and a scientific (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. **In an online course, not submitting an assignment will be regarded as an absence.** Students who miss an exam may be dropped from the course. Please communicate any special circumstances with me.

## MECS DIVISION CHAIR:

Ariel Ramirez  
aramirez8@unm.edu



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## 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](mailto: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/>



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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 -  
[vrcc@unm.edu](mailto:vrcc@unm.edu)

PASOS Resource Center - (505) 925-8546, [pasos@unm.edu](mailto: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 degrees.

**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.

## University Policies:

### Title IX:

Our classroom and our university should always be spaces of mutual respect, kindness, and support, without fear of discrimination, harassment, or violence. Should you ever need assistance or have concerns about incidents that violate this principle, please access the resources available to you on campus. Please note that, because UNM faculty, TAs, and GAs are considered "responsible employees" by the Department of Education, any disclosure of gender discrimination (including sexual harassment, sexual misconduct, and sexual violence) made to a faculty member, TA, or GA must be reported by that faculty member, TA, or GA to the university's Title IX coordinator.

For more information on the campus policy regarding sexual misconduct, please see: <https://policy.unm.edu/university-policies/2000/2740.html>.

**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](http://www.registrar.unm.edu)

## 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](mailto:arcsrvs@unm.edu) or by phone at 505-277-3506

## Schedule of Topics:

Week of	Topics	Textbook Homework (check your answers!)
June 3	Sec. 5.1 The Unit Circle	1-19,41-49
	Sec. 5.2 Trigonometric Functions	7-23,39-45,55-69,73,75
June 10	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
	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
June 17	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
	Sec. 6.4 Inverse Trigonometric Functions II	1-17,21-27,33,35,39,41
June 24	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
July 1	Sec. 7.1 Identities	7,9,13-17,21,29-45,49,53,67,81,83,91-95
	Review	
	Holiday, July 4 <sup>th</sup>	
	<b>Midterm Exam Friday, July 5<sup>th</sup>, 4pm-6pm</b>	
July 8	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
	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
July 15	Sec. 8.1 Polar Coordinates	5-13,23-31,37-61
	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
	<b>Project due Friday, July 19<sup>th</sup></b>	
July 22	Sec. 9.1 Vectors	5-21,33-47,53-59,67
	Review	
July 29	<b>Final Exam Monday, July 29<sup>th</sup>, 4pm-6pm</b>	

