

## Math 123 Trigonometry Spring 2017

MATH 123-501 33675 Class T/Th 10:30 am-11:45 am VAAS 127

**Instructor:** DR. Alfonso Heras

**Office:** A-142a

**Phone Number:** 505-925-8643

**Email:** aheras@unm.edu

**Text:** Precalculus, Second Edition, Paul Sisson.

**Prerequisite:** Grade of C (not C-) or better in Math 121

**Grades:** Your grade will be based on your performance on the following assignments and exams.

To receive a passing grade for this course you must have at least 70% overall.

**3 in-class tests:** 100 percentage points each; **Online Homework:** 100 percentage points; **Final Exam:** 100 percentage points. **STEM center Paper;** 100 percentage points. For a grand total of 600 points. **The final grade will your grand total divide by 6.**

**Grading:** To get full credit on graded work students must address all mathematical components presented by the problem, showing all steps and calculations. The use of proper notation, well-structured procedures, and legibility will be taken into account when assigning points.

**Calculator policy:** Graphing calculators are NOT ALLOWED on any tests, including the Final Exam. A scientific calculator may be necessary on all tests, including the Final Exam. Homework and non-graded work may be done with the help of a graphing calculator. A graphing calculator may be used by the instructor during class as a teaching aid.

Notes of any kind, 3x5 cards, books, cell phones, computers, headphones etc. are NOT ALLOWED on any tests, including the Final Exam.

**Homework:** a) Your homework is your most important effort in this class; homework is how you actually learn the material that will be on the quizzes and exams. Expect to do 2-3 hours of homework for every hour of class meeting time (on average 10-15 hours per week). Keep all of your homework together in a folder so that if you are having trouble in the course, you can bring it with you when you go to see your instructor or get tutoring. b) Most homework is done with pen and paper and will not be graded. Some homework is done through the online component of the class, and will be graded.

**Attendance:** Attendance is mandatory. If a student has three or more unexcused absences he/she may be dropped from the course. Tardiness or early departure may be regarded as absence. Please note that it is the student's responsibility to drop the course if he/she stops attending. A failing grade may be assigned if a student stops attending and does not drop.

**Missed Exams:** If you miss an exam, contact your instructor immediately. Make-up tests will only be given in appropriate circumstances and if you miss an exam and do not contact your instructor immediately, you will be dropped from the course.

**Student Behavior:** According to the Code of Conduct as stated in the Policies and Regulations for UNM, student activities that interfere with the rights of others to pursue their education or to conduct their University duties and responsibilities will lead to disciplinary action. This includes any activities that are disruptive to the class and any acts of academic dishonesty. Students are expected to behave in a courteous and respectful manner toward the instructor and their fellow students. Students may be dropped from a class for inappropriate behavior.

**Disability Statement:** We will accommodate students with documented disabilities. During the first two weeks of the semester, those students should inform the instructor of their particular needs.

List of Student Learning Outcomes (SLO) for Math 123

Course Goal #1: Communication Addresses UNM Core Area 2/HED Area II: Mathematics (Algebra Competencies)

SLO 1: Use correct mathematical notation and terminology.

SLO 2: Read and interpret graphs. Course Goal #2: Trigonometry of Real Numbers Addresses UNM Core Area 2/HED Area II: Mathematics (Algebra Competencies)

SLO 1: Students will be able to use the unit circle to define the six trigonometric functions.

SLO 2: Students will be able to graph the sine, cosine, and tangent functions.

SLO 3: Students will be able to fit a sine or cosine function to a given graph.

Course Goal #3: Trigonometry of Angles Addresses UNM Core Area 2/HED Area II: Mathematics (Algebra Competencies)

SLO 1: Students will be able to work with radians and to solve circular motion problems.

SLO 2: Students will be able to solve right triangles. They will be able to draw a sketch in an applied problem when necessary.

SLO 3: Students will be able to solve non-right triangles using the law of sines and the law of cosines.

Course goal #4: Analytic Trigonometry Addresses UNM Core Area 2/HED Area II: Mathematics (Algebra Competencies)

SLO 1: Students will be able to prove trigonometric identities.

SLO 2: Students will be able to apply addition and subtraction, double-angle and half-angle formulas.

SLO 3: Students will be able to graph the inverse sine, cosine, and tangent functions.

SLO 4: Students will be able to solve problems that require the inverse trigonometric functions.

SLO 5: Students will be able to solve trigonometric equations. These may require the formulas outlined in SLO 2.

SLO 6: Students will be able to work with the trigonometric form of complex numbers. This includes DeMoivre's formula.

SLO 7: Students will be able to work with the Euler form  $i\theta r \cdot e$  of complex numbers.

SLO 8: Students will be able to add and subtract vectors in two dimensions. They will be able to use the dot product to project one vector onto another and to determine the angle between two vectors. They will be able to solve a variety of word problems using vectors.

Course goal #5: Analytic Geometry Addresses UNM Core Area 2/HED Area II: Mathematics (Algebra Competencies)

SLO 1: Students will be able to 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: Students will be able to graph parametric equations in two dimensions that involve trigonometric functions.

Registration, Drop, and Grade Change Deadlines: The Department of Mathematics and Statistics will adhere to ALL registration deadlines published by the Office of the Registrar in the schedule of classes.

IMPORTANT DATES with respect to this class: Visit The UNM online Schedule.