MATH 1316 **Spring 2017**

Plane Trigonometry

Time: TR 9:30 – 10:45
Room: ACR 204

Instructor: Eric Funasaki
Office: ACR 109C
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Office Hours:

MWF 10 – 10:50, TR 8:30 – 9:20, TR 11 – 12:15, or by appointment.

Textbook:

Trigonometry: A Unit Circle Approach, 9th edition, Michael Sullivan.
ISBN: 978-0-321-71710-8 (loose-leaf)
978-0-321-75599-5 (softcover)
978-0-321-71657-6 (hardcover)

Course Description:

In-depth study and application of trigonometry including definitions, identities, inverse functions, solutions of equations, graphing, and solving triangles. Additional topics such as vectors, polar coordinates and parametric equations may be included.

Prerequisite:

Math 1314 College Algebra

Mathematics Program Learning Objectives:

The student should be able to:
1. Apply knowledge of basic mathematics principles;
2. Identify and provide valid proofs or solutions for theorems or problems; and
3. Recognize and dispute invalid mathematical statements using counterexamples.

Course Objectives:

The student will be able to:
1. Identify and work with trigonometric functions and their graphs;
2. Identify and work with inverse trigonometric functions and their graphs;
3. Solve trigonometric equations;
4. Verify trigonometric identities; and
5. Identify and work with polar coordinates.

EC-6 Core Teacher Competencies:

1. Competency 013 (Mathematics Instruction): The teacher understands how students learn mathematical skills and uses that knowledge to plan, organize, and implement instruction and assess learning.

2. Competency 014 (Number Concepts and Operation): The teacher understands concepts related to numbers, operations and algorithms, and the properties of numbers.
3. Competency 015 (Patterns and Algebra): The teacher understands concepts related to patterns, relations, functions, and algebraic reasoning.
4. Competency 016 (Geometry and Measurement): The teacher understands concepts related to principles of geometry and measurement.
5. Competency 017 (Probability and Statistics): The teacher understands concepts related to probability and statistics and their applications.
6. Competency 018 (Mathematical Processes): The teacher understands mathematical processes and knows how to reason mathematically, solve mathematical problems, and make mathematical connections within and outside of mathematics.

Course Assessment:

Your grade will be based on the following components:

10% In-class problems and participation
20% Homework assignments and quizzes
48% Exams
22% Comprehensive Final Exam

The grading scale will be:

90 – 100 A 80 – 89 B 70 – 79 C 60 – 69 D 0 – 59 F

Course Schedule (tentative):

Week 1

1/17 T 1.3 Functions and Their Graphs, 1.4 Properties of Functions
1/19 R 2.1 Angles and Their Measures

Week 2

1/24 T 2.2 Trigonometric Functions: Unit Circle Approach
1/26 R 2.3 Properties of Trigonometric Functions

Week 3

1/31 T 2.4 Graphs of the Sine and Cosine Functions
2/2 R 2.5 Graphs of the Tangent, Cotangent, Cosecant, and Secant Functions
2.6 Phase Shift

Week 4

2/7 T 2.6 Phase Shift, 1.7 One-to-One Functions
2/9 R Review for Exam 1

Week 5

2/14 T Exam 1
2/16 R 3.1 The Inverse Sine, Cosine, and Tangent Functions

Week 6

2/21 T 3.1 The Inverse Sine, Cosine, and Tangent Functions
3.2 The Inverse Trigonometric Functions (Continued)
2/23 R 3.2 The Inverse Trigonometric Functions (Continued)

Week 7

2/28 T 3.3 Trigonometric Equations
3/2 R 3.3 Trigonometric Equations, 3.4 Trigonometric Identities

Week 8

3/7	T	3.4 Trigonometric Identities
3/9	R	3.5 Sum and Difference Formulas

Week 9

3/14	T	Spring Break (no class)
3/16	R	Spring Break (no class)

Week 10

3/21	T	3.6 Double-angle and Half-angle Formulas
3/23	R	Review for Exam 2

Week 11

3/28	**T**	**Exam 2**
3/30	R	4.1 Right Triangle Trigonometry; Applications

Week 12

4/4	T	4.2 The Law of Sines
4/6	R	4.2 The Law of Sines, 4.3 The Law of Cosines

Week 13

4/11	T	4.3 The Law of Cosines
4/13	R	5.1 Polar Coordinates

Week 14

4/18	T	5.1 Polar Coordinates, 5.3 The Complex Plane; De Moivre's Theorem
4/20	R	5.3 The Complex Plane; De Moivre's Theorem

Week 15

4/25	T	Review for Exam 3
4/27	**R**	**Exam 3**

Week 16

5/2	T	Review for Final Exam
5/4	R	Dead Day (no class)

Week 17

5/8	**M**	**Final Exam (8 am – 10 am)**

Attendance Policy:

Role will be taken. You are responsible for all material covered in class as well as any assignments and announcements that are made. If you miss an assignment, exam, or quiz you will receive a grade of zero unless the instructor has been notified in advance.

Sul Ross State University policy is to assign a grade of F when 9 hours of class are missed by a student. For this course that is when you miss **6** classes.

Cheating:

Cheating will not be tolerated. Anyone caught cheating will receive a grade of zero on that assignment, exam, or quiz. This includes homework assignments where the student who copied another student's work and the student who allowed their work to be copied will both receive a grade of zero.

Homework Assignments:

A homework assignment is due **2** class periods after it is assigned. A late homework assignment will be penalized at least 50% or not accepted.

Cell Phones and Other Electronic Devices:

Your cell phone must be **off** while you are in class. You may not read or send text messages while class is in session. If there is an unusual situation where you simply must be able to read and send a message without delay, place your phone in vibrate mode and leave the room before reading and responding. No other electronic devices may be used during class without the permission on the instructor.

ADA Statement:

Sul Ross State University is committed to equal access in compliance with the Americans With Disabilities Act of 1973. It is the student's responsibility to initiate a request for accessibility services. Students seeking accessibility services must contact Mary Schwartze, M.Ed., L.P.C., in Counseling and Accessibility Services, Ferguson Hall, Room 112. The mailing address is P.O. Box C-122, Sul Ross State University, Alpine, TX 79832. Telephone: 432-837-8691. E-mail: mschwartze@sulross.edu.

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