

**Math 1316 Syllabus**  
**Trigonometry**  
**Spring 2016 Sul Ross State University**

<b>Sec. 001:</b>	Mon, Wed, Fri: 9:00-9:50a in ACR 205
<b>Instructor:</b>	Dr. Kris Jorgenson
<b>Office:</b>	ACR 109D
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<b>Office Hours:</b>	M, W, F: 10a-12p; Tu, Th: 11a-12p, 3:30–4:30p also available by appointment

**Course Description:** The prerequisite is Math 1315 or equivalent (College Algebra). The course will cover the topics of directed angular measure, definitions and evaluation of trigonometric functions, graphs of trig functions, the inverse trig functions, trigonometric identities and conditional equations, and applications of trigonometry laws for solving triangles to real-world problems, areas, damped harmonic motion, and geometric vectors.

**Student Learning Objectives:** Successful students will demonstrate correct understanding and knowledge of the topics of algebra and trigonometry including but not limited to those listed in the previous paragraph through use of correct terminology and problem-solving techniques. Students will use algebraic methods for the evaluation of trigonometric functions and for solving equations. Students will translate, extend, synthesize, and apply knowledge of concepts and problem-solving methods to different problem-solving situations. Students will demonstrate correct knowledge of the difference between numbers (perhaps in the context of another mathematical object such as a function or algebraic expression) that are in exact form and numbers that are approximate and will be able to report numbers in exact form and with a correct approximation when required. Students will express their solutions clearly in writing and in complete sentences when appropriate.

**Required Materials:** Textbook: Trigonometry, A Unit Circle Approach, 9th edition by Michael Sullivan, ISBN: 0321716574, the subject matter of Chaps. 1-5 with some extra material in aid of these topics. There is a loose-leaf version of the textbook which is cheaper.

Scientific Calculator: There will be some need of a scientific calculator though calculators may be used to check arithmetical calculations throughout the semester. A scientific calculator contains buttons with the denotations such as  $y^x$ ,  $a^b$ ,  $e^x$ , SIN, COS, TAN, but use of a calculator will not be a large part of this course. Graphing calculators contain a scientific calculator, but calculators capable of symbolic manipulation such as the TI-89 or TI-92 are not allowed. Appropriate scientific calculators cost usually \$8-\$30 each.

**For extra free online help:** Additional practice problems for exercises in this edition of the Sullivan text can be found online for free at the website: <http://interactmath.com> (At this web address, select "Enter". On the new page on the left, scroll down to "Sullivan: Trigonometry: A Unit Circle Approach, 9e" and press select. A list of chapters of this text will appear.) This site will give immediate feedback as to the correctness of your answers.

**Class Materials:** Students are expected to be prepared in every class with pencils and paper to take notes and get involved in in-class assignments. This will be part of your grade. You should also have access to Blackboard 9 and have an e-mail address that you check regularly be your e-address registered in Bb 9 since I may need to contact you outside of class with important information.

**Grading:** Your total grade will break down as follows:

**Daily Grade (DG)** worth **30%**

**Test Average (TA)** worth **70%** will be based on 4 in-class tests.

The **DG** will consist of **Homework (HW)** and **Quiz** grades. The unit assignments will be handed out at the beginning of each of unit of study. Quizzes and tests will be based on these unit assignments. Students should keep a homework notebook, which can be used during any in-class quiz, but not in-class tests.

Many HW problems will be done as class exercises. Two weeks before each test, HW will be submitted containing the unit assignments made known by me several days to a week before hand. A HW grade and take-home quiz grade will be derived from this submission. When you hand in HW, pages containing the required HW should be submitted, but **NO BLANK PAPER SHOULD BE SUBMITTED**. During the week prior to the test, an in-class quiz will be given.

Tests will be given during the 2nd half of a Wed. class period of test week and during the following Friday class period for the whole period. HW over the remaining unit assignments not previously handed in will be due to hand in on the Wed. of test week prior to the beginning of the test. Therefore, before each test, there will be 2 HW grades and 2 Quiz grades.

There will be 4 tests given during the term. Each test will be a unit test covering the assignments of that unit. The dates for these tests are as follows.

<b>Test 1</b>	<b>Wed Feb 10, Fri Feb 12</b>
<b>Test 2</b>	<b>Wed March 9, Fri March 11</b>
<b>Test 3</b>	<b>Wed April 13, Fri April 15</b>
<b>Test 4</b>	<b>Wed May 11, 8-10am</b>

Each of the 4 tests will count in the Test Average. However as a bonus to you, your highest test grade will count twice. Therefore, you will have 5 test grades in all.

**Extra Credit:** I will allow students to add points to the test average (up to 10% of a test grade) by completing an extra credit assignment. This will be an application problem over a topic covered in one of the units of study and would be different for each student and must be approved by me. I will have some suggested problems for this, but a student may pick a problem of interest from the textbook as long as it has my approval. A student seeking extra credit in this way must complete this process, including discussion with me to ensure the student's understanding of the problem, by Friday April 29.

**Late Work, Rescheduled Quizzes/Tests** No late homework will be accepted after the time it is due. The HW that is due 2 weeks before the following test is due at the latest by 5 pm on the due date. To take an in-class quiz or test at a time other than the scheduled time, you must notify me of this absence on or before the day missed, and satisfy one of two requirements: either (1) supply a written medical excuse signed by a medical

professional for the day of the absence, or (2) if your excuse is for a university activity, you must notify me about this authorized absence in writing with your name, the name of your organization and the date(s) of your absence, and your name must appear on a published explained absence list that I am provided (or verified by a faculty sponsor). Also, you and I must set up a time for you to make up the quiz or test within a reasonable time period (not more than 1 or 2 days) before or after the time of the missed grade. Usually I will let you make up a grade according to the above conditions if it is due to another one-time occurrence, such as the care of someone else in your family or a friend, or work-related excuse as long as you can document your absence and you let me know **BY THE DAY OF THE ABSENCE AT THE LATEST**.

**Attendance** I will be taking attendance as university policy precludes you from missing more than 8 classes for anything other than authorized university activities. To excuse an absence for a university activity, in addition to letting me know of the absence by the day of the absence (as explained previously) you must also spend at least 45 minutes outside of class on this course with me or with a tutor, but they will need to sign a note that documents this made-up time. Also I will allow you to excuse a test day for a documented medical absence as long as you also make up the test. If you have 9 or more unexcused absences, I reserve the right to drop you from this class with a grade of 'F', which is university policy.

**Good Advice** Concentrate on learning the material of the course rather than worrying about your grade. Your time is best spent concentrating on the material to be learned in the impending assignments, asking questions, and devoting yourself to activities that will help you learn the material and do better in the course. I will worry about the details of your grade since you doing so does not help you earn a higher grade. But learning the material and doing well on the tests *will* help your grade. **Remember that math is not a spectator sport**, so the more problems you work yourself, the more practice you will get, the more confident you will be, and the better you will do in this course. Working on the problems helps you to figure out what your specific questions are.

### **More Good Advice**

Keep absences to a minimum. You never know when you might miss something you will find important either from the lecture or class discussion such as questions other students ask. Remember: **YOU ARE RESPONSIBLE FOR EVERYTHING THAT IS DISCUSSED DURING CLASS WHETHER YOU ARE PRESENT OR NOT.**

Also do not allow yourself to develop bad habits such as missing classes. It's human nature to be controlled by our habits, so once you develop a daily habit for the semester, it can be hard to break this habit. So be sure that you allow the necessary time for this course, **ESPECIALLY** if you consider mathematics not to be your best subject. If you have trouble in math, then you should attend **EVERY** class of a college mathematics course. Not showing up to class or not doing the required work will not cause this class to "go away". If you do have to miss, let me know before class, and plan to come and see me and make an appointment to discuss what was missed and pick up assignments you did not get back. However meeting in my office is not a substitute for attending class.

Ask questions no matter how easy or trivial they may seem. There is no such thing as a bad or silly question. Questions result when you are interested and have been thinking about areas, such as mathematics, in which you have some limitations in your educational background. Being in a college mathematics course means you will have questions both obvious and more subtle. Asking questions is a very important part of learning.

Study and work problems regularly—every day. You should complete at least 3 assignments daily on average during the semester. You can't expect to succeed in a math course by waiting till the last minute to only study and cram prior to a test. If you promise yourself you will study for ½-hour, get into the work, forget the clock, then the next thing you know, you've studied and worked for one to two hours.

**Classroom Conduct** It is important to conduct yourself in a college classroom so that everyone can benefit from good communication between instructor and students. My goal is to create a classroom environment in which everyone can do their best work, learn, and make the best grades possible.

I think you will find that I am a very friendly, sympathetic, and generous instructor as long as you are sincerely working to succeed in this course and certain guidelines for classroom behavior are followed during class to allow a sanctity of study for your fellow students. Class habits such as holding conversations during class lecture, or being engaged in activities not related to this course such as working on a different course or reading a newspaper will work against the goal of this course and cause you to be counted absent. Also engaging with electronic communication devices of any kind during class or coming into class more than 5 minutes late or leaving early before class is dismissed circumvent the goals of this course and cause you to lose credit. My sympathy and generosity will quickly evaporate if I find that you are working against the goals of the course or that you are simply trying to get a good grade without learning or without honestly doing the required work. I want you to have every opportunity to succeed in this course.

Please be aware of the rules for Academic Honesty that you will find in the Sul Ross Student Handbook and building codes prohibiting food, beverages, tobacco (smokeless or otherwise) in the classroom. Use commonsense to think of anything else that will allow you to learn and do the best work that you can in this class, and for me to better help you do your best work. Remember that being registered for this course does not allow you to behave in any manner you wish during class. You must keep other people in mind. It is within university policy for me to send a student out of this class on a temporary or permanent basis if disruptions or interruptions like the types listed above persist.

**Equal Access** The university is committed to equal access in compliance with the Americans with Disabilities Act of 1990 (ADA) and section 504 of the Rehabilitation Act of 1973. If you have questions regarding accessibility, please consult with the Director of Counseling and Accessibility Services, Mary Schwartz, in Ferguson Hall Rm. 112, and feel free to discuss this with me in private. The mailing address is Accessibility Services, Box C-122, Sul Ross State University, Alpine, Texas 79832. The telephone number is (432) 837-8203. E-mail: [mschwartz@sulross.edu](mailto:mschwartz@sulross.edu).

This course is supportive of the Program Learning Outcomes for the Bachelor of Science degree in Mathematics:

The graduating student will demonstrate that he/she is able to:

- Apply knowledge of basic mathematics principles;
- Identify and provide valid proofs or solutions for theorems and problems;
- Recognize and dispute invalid mathematical statements using counter-examples.

### Important University Dates

Tue, January 19	First day of classes; late registration, schedule changes begin
Fri, January 22	Last day for late registration and schedule changes
Wed, February 3	12th class day: last day to drop without creating record
Mon-Fri March 14-18	Spring Break Holiday, no classes
Fri, April 8	Last day to drop a course with grade of "W" by 4 pm in Registrar's Office
Mon, April 18	Honors Convocation, 7:30 pm in Marshall Auditorium
Wed, May 4	Last Class Day before finals
Thu, Fri May 5, 6	Dead Days, no classes
M-Th, May 9-12	Final Exams

X - No Class      Math 1316 Tentative Course Outline

Spring 2014	Mon	Wed	Fri
Jan. 20, 22	X MLK Day	Distance, Midpoint	Equation of Circle
Jan. 25, 27, 29	Angle Measures	Arc Length, Sector Area	Functions
Feb. 1, 3, 5	Triangle Ratios	Trig Values	General Definitions Of Trig Functions
Feb. 8, 10, 12	Review Test 1	Review Test 1 <b>Test 1</b>	<b>Test 1</b>
Feb. 15, 17, 19	Even, Odd functions	Periods, graphs sine, cosine	Fund. Identities
Feb. 22, 24, 26	Periods, graphs Trig Fns	Properties Trig Functions	Inverse functions
Feb. 29, Mar. 2, 4	Inverse Trig Functions	Inverse Trig Functions Right Triangle Applications	Right Triangle Trig applications
Mar. 7, 9, 11	Review Test 2	Review Test 2 <b>Test 2</b>	<b>Test 2</b>
Mar. 14-18	X - SPRING BREAK	X - SPRING BREAK	X - SPRING BREAK
Mar. 21, 23, 25	Angle Sum, Difference Identities	Double Angle Identities Half Angle Identities	Half Angle Identities
Mar. 28, 30, Apr. 1	Cofunction Identities Law of Sines	Law of Sines	Law of Cosines
Apr. 4, 6, 8	Law of Cosines	Applications Area of Triangles	Simple Harmonic and Damped Motion
Apr. 11, 13, 15	Review Test 3	Review Test 3 <b>Test 3</b>	<b>Test 3</b>
Apr. 18, 20, 22	Polar Coordinates	Polar Equations Polar Coordinates	Polar Equations Polar Forms of C
Apr. 25, 27, 29	Polar Forms of Complex Numbers	Vectors, Geometric Vectors	Geometric Vectors Applications of Vectors
May. 2, 4	Applications of Vectors	Review Test 4	X - Dead Day
Wed May 11		<b>Test 4 8-10 am</b>	