Plane Trigonometry
Math 1316 Syllabus
Spring 2025 Sul Ross State University

Sec. 001:	Tue, Thu: 11a-12:15p in ACR 205
Instructor:	Dr. Kris Jorgenson
Office:	ACR 109D
E-mail:	kjorgenson@sulross.edu
Office Hours:	Mon, Tue, Wed, Thu: 10-11a; Fri: 10a-12p; Tue, Thu: 2-3:30p;
	Fri: 3:30-4:30p; also by appointment

Course Description: The prerequisite is Math 1314 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, algebraic and geometric vectors and their applications.

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 apply knowledge of concepts and problem-solving methods to different problem-solving situations. Students will demonstrate correct knowledge of the difference between numbers 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. Such numbers are often in the context of other mathematical objects such as a function or algebraic expression. Students will express their solutions clearly in writing and complete sentences when appropriate.

This course is supportive of the
Student Learning Outcomes for the Bachelor of Science degree in Mathematics:
1) The student will be able to demonstrate content knowledge of basic mathematical principles.
2) The student will be proficient in logic, able to negate statements, provide counterexamples to false statements, and determine the validity of arguments.
3) The student will be able to communicate mathematical content clearly and with valid reasoning.

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 copy of this textbook on reserve in the library. Scientific Calculator: There will be some need of a scientific calculator though calculators may be used to check arithmetic calculations throughout the semester. A scientific calculator contains buttons with the denotations such as $\wedge$, y^x, a^b, e^x, SIN, COS, TAN, but use of a calculator will not be a large part of this course. Appropriate scientific calculators cost usually $10-$50 each. Symbolic graphing calculators, such as the TI-89 or TI-92, will not be allowed. Non-symbolic, menu-driven graphing calcultors, such as the TI-84, may be

used in some cases. Please check with me about this at the beginning of the semester. Only stand-alone (not contained within a cell-phone or computer) calculators will be allowed on in-class quizzes and tests with exceptions for some topics of Test 2 and quizzes prior to Test 2 for which any calculator will not be allowed.

Class Materials: Students are expected to be prepared in every class with pencils and paper in some sort of organized notebook for taking notes of lecture content and examples that will help you with the homework. You are required to be involved in class activities every class day. This will be part of your grade.

Blackboard: You are required to have access to Blackboard and have an e-mail address that you check regularly be your e-address registered in Bb since I will regularly need to contact you outside of class with important information.

Pandemic Restrictions It is strongly encouraged that students get a vaccination and a booster for the Covid-19 Corona Virus and any other vaccine that is advised for you by medical professionals. Students are also encouraged to wear a proper face covering and follow social distancing guidelines based on your own personal decision as there have been recent increases in contagious diseases that includes Covid-19.

Grading: Your total grade will break down as follows:

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

Test Average (**TA**) worth **70**% will be based on 3 in-class tests. Tests 1 and 2 will each be worth 20% of your grade while Test 3 will be worth 30% of your grade.

An **Individual Project Problem** (**IPP**) is an option that will replace **10**% of your Test Average so that your test average will be worth 60% of your grade. In this case, Tests 1 and 2 will be worth 17% each with Test 3, 26%.

The **DG** will consist of **Homework** (**HW**) and **Quiz** grades worth a total of **20**% of your grade and a **Class Study Grade** (**CSG**) worth **10**% of your grade. On days after the 1st day of class, when there is no in-class quiz or test students will receive a Class Study Grade (CSG) based on attendance and class participation. Unit assignments will be handed out at the beginning of each unit of study. Quizzes and tests will be based on these unit homework assignments. Students need to keep a homework notebook, which can be used during most in-class quizzes (with exceptions), but not in-class tests.   Many homework problems will be done as in-class exercises. When you hand in a HW assignment, please hand in loose pages that contain your work only and not a lot of blank pages of a notebook. Also, if possible, please write on only 1 side of each page that you hand in to allow for clarity and neatness.

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

Test 1	Thu, Feb 13
Test 2	Thu, March 27
Test 3	Mon, May 5, 10:15a-12:15p

Each of the 3 tests will count in the Test Average. I will allow 1 page of prepared notes (that you create) to be used on Tests 1 and 3, but no notes allowed on Test 2. This page of notes will be handed in with your test. On Test 3, I will also include 1 additional page of formulas with the test. Scientific calculators will be allowed during the tests except for most

of Test 2; though you will be allowed the use of your calculator on one section of Test 2. Calculators will not be allowed on any quizzes prior to Test 2 that involve inverse trig functions.

The **IPP** will be an application problem over a topic covered in one of the units of study and will 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. Each student's IPP must be chosen and approved by me on or before Thu. April 17 and completed by Fri. April 25. It is best to hand in the IPP before this date so that there is time for discussion and corrections so that you can get full credit on the IPP.

I give letter grades according to the traditional 90%-100% for an A; 80-89% for a B; 70-79% for a C; 60-69% for a D; and less than 60% for an F; with some exceptions. Students whose total average is between 50-59% with Test Average over 50% will often be rounded up to a D but only if the student has completed every major assignment (no exceptions) while doing their best work. Students working similarly who end up with a final grade that is a borderline grade of 89%, 79%, or 69% will often be rounded up to the next grade-level as long as their test average is in line with this total average.

To Guarantee Full Credit for Work Done at a Time Different Than the Scheduled Time:

* For Homework, deadlines will be stated for each homework grade. There is usually some flexibility or grace period for receiving full credit because I want you to do your best work and have the time to get help from me by asking questions, which is important. So as long as you ask your questions on a homework assignment by the homework deadline (or earlier), then being a little bit late will not incur a penalty. Homework that is handed in after the deadline without discussing your questions with me by this deadline, will probably receive only half credit. However, I encourage corrections of all graded work, so grades can be raised by discussing your corrections with me in my office.

* For Tests or In-class Quizzes, be sure to contact me about the missed grade **before or by the day of the absence** and be able to produce documentation (by the day of the grade or soon after) for a medical excuse or from a faculty sponsor for an absence due to a trip with a Sul Ross student organization. You can send me these documents by e-mail or in-person. Be sure to make an appointment with me to make up the quiz or test in my office area no more than 2-3 days before or after the absence.

* For a Class Study Grade, if you work on this course in my office area during office hours (or other times I am available in my office) for 60 minutes or more, then you can make up a CSG as long as this is done before the day of the next test.

Attendance I will be taking attendance as university policy precludes you from missing 3 weeks or more 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 60 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 with me or in the testing center. If you have 3 weeks or more of 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, and the more confident you will be, and you will do better in this course. Working on the problems helps you to figure out what your specific questions are.

It is important to be working on the homework assignments yourself so that you will undergo the personal growth necessary for success on the tests. Making mistakes and learning from your mistakes is an important part of the learning process in mathematics. But you won't have this growth important for success if you are not doing the homework yourself and then asking questions. Losing some points on a homework assignment will not count for a lot, but if you learn from these mistakes, then you will do better on the tests, which do count for a lot of your grade. So working on the homework yourself, asking questions, and learning from mistakes is **essential** to your success in this course. The best lessons learned often come from correcting a quiz or homework problem in which you have made a mistake. Remember that

LEARNING FROM MISTAKES + PERSISTENCE = SUCCESS!

More Good Advice

Keep absences to a minimum. You never know when you might miss something 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 weekly habit for the semester, it can be hard to break this habit.   So be sure that you allow the necessary time for this course FROM THE BEGINNING OF THE TERM, ESPECIALLY if you consider mathematics to not 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 magically go away. If you are not understanding the material and/or have fallen behind in your work, missing class will not help. IF YOU FALL BEHIND, PLEASE DO NOT DROP THIS COURSE WITHOUT TALKING TO ME FIRST. Making mistakes or falling behind is natural, so it is best to talk to me about this. If you do have to miss class, let me know beforehand. Discuss with me what you are not understanding. It is essential to get your questions answered. But meeting with me outside of class 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 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 the learning process.

Study and work problems regularly–every day or every other day. Work on assignments discussed in class as soon as you can after class while the methods discussed are still fresh in mind. You can't expect to succeed in a math course by waiting till the last minute to only study and cram immediately prior to a test. If you promise yourself you will study for a

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 an 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 to allow a sanctity of study for your fellow students. Habits such as holding conversations during class, or being engaged in activities not related to this course such as working on a different course or reading your cell-phone will work against the goals of this course and cause you to be counted absent and you will lose Daily Grade credit. 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 learn and succeed in this course.

Please be aware of the rules for Academic Honesty that you will find in the Sul Ross Student Handbook. 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.

SRSU Accessibility Services. Sul Ross State University (SRSU) is committed to equal access in compliance with the Americans with Disabilities Act of 1973. It is SRSU policy to provide reasonable accommodations to students with documented disabilities. It is the student's responsibility to initiate a request each semester for each class. Students seeking accessibility/accommodations services must contact Mrs. Mary Schwartze Grisham, LPC, SRSU's Accessibility Services Director or Ronnie Harris, LPC, Counselor, at 432-837-8203 or email mschwartze@sulross.edu or ronnie.harris@sulross.edu. Our office is located on the first floor of Ferguson Hall, room 112, and our mailing address is P.O. Box C122, Sul Ross State University, Alpine. Texas, 79832.

Program Marketable Skills:
Marketable Skill (MS) 1: Students Demonstrate Logical and Analytical Skills.
MS 2: Students Demonstrate Problem-Solving Using Analytic and Algebraic Methods.
MS 3: Students Use Technology in Problem-Solving and Presentation.
MS 4: Students Use Communication and Pedagogical Skills.

Required Student Responsibilities Statement
All full-time and part-time students are responsible for familiarizing themselves with the Student Handbook and the Undergraduate & Graduate Catalog and for abiding by the University rules and regulations. Additionally, students are responsible for checking their Sul Ross email as an official form of communication from the university. Every student is

expected to obey all federal, state and local laws and is expected to familiarize themselves with the requirements of such laws.

Core Curriculum Courses Student Learning Objectives for 2024-2025

Empirical & Quantitative Skills. Students will develop empirical and quantitative skills to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.

Classroom Climate of Respect

Importantly, this class will foster free expression, critical investigation, and the open discussion of ideas. This means that all of us must help create and sustain an atmosphere of tolerance, civility, and respect for the viewpoints of others. Similarly, we must all learn how to probe, oppose and disagree without resorting to tactics of intimidation, harassment, or personal attack. No one is entitled to harass, belittle, or discriminate against another on the basis of race, religion, ethnicity, age, gender, national origin, or sexual preference. Still we will not be silenced by the difficulty of fruitfully discussing politically sensitive issues.

Important Dates

Wed, Jan. 15	First day of classes, first day of late registration and schedule changes
Mon, Jan. 20	MLK, Jr. Holiday, No Classes
Tue, Jan. 21	Last day for late registration and schedule changes
Fri, Jan. 31	Last Day to Drop a 16-Week Course Without Creating an Academic Record; 12th class day
Mon, March 10	Mid-Semester, 16-week term
Mon-Fri March 17-21	Spring Break Holidays, No Classes
Thu, April 3	University/Community Meal on the Mall, SRSU Birthday
Fri, April 4	Last day to drop a class with a grade of "W" in a 16-week course by 4 pm in University Registrar's Office
Mon, April 14	Honors Convocation, 7 pm, Marshall Auditorium
Wed, April 30	Last Day of Class before Finals, 16-week term
Thu, May 1	Dead Day, No Classes
Fri, Mon-Wed: May 2, 5-7	Final Exams, 16-week term, End of Term

Tentative Class Schedule-Math 1316, Sec. 001 Spring 2025		
X = no class	Tue	Thu
Jan. 16	**X**	First Day of Class Distance, Midpoints
Jan. 21, 23	Circles, Arcs, Angles	Angle Measures: Radians, Degrees, DMS
Jan. 28, 30	Arc Length, Area of Sector, Wheel Rotation	Similar Triangles, Functions, Domains, Graphs
Feb. 4, 6	Triangle Trig Definitions, General Trig Definitions Point Angles	Quadrantal Angles Coterminal Angles
Feb. 11, 13	Review Test 1	**Test 1**
Feb. 18, 20	Domains of Trig Functions, Fundamental Identities,	Even/Odd Functions Periodicity, Simplifying Trig Expressions
Feb. 25, 27	Periodicity, Simplifying Trig Expressions	Graphs and Properties of the Trig Functions
Mar. 4, 6	Inverse Functions	Inverse Trig Functions, Solving Trig Equations
Mar. 11, 13	Evaluating Inverse Trig Functions	Right Triangle Applications
Mar. 17-21	**X - Spring Break -->**	
Mar. 25, 27	Review for Test 2	**Test 2**
Apr. 1, 3	Sum/Difference Identities, Double Angle Formulas	Half Angle Identities, Cofunction Identities Law of Sines
Apr. 8, 10	Law of Sines Law of Cosines	Law of Cosines
April. 15, 17	Polar Coordinates	Polar Forms of Complex Numbers
April. 22, 24	Polar Forms of Complex Numbers Geometric Vectors	Geometric Vectors
Apr. 29	Geometric Vectors Dot Products, Applications	**X - Dead Day, No Classes**
Mon., May 5	**Mon., May 5, Test 3 (Final Exam)** **Test 3: 10:15a-12:15p**	