Department: Mathematics, Engineering, and Computer Science

Discipline: Mathematics

Course Number: MATH 1316

Course Title: Plane Trigonometry

Available Formats: conventional, hybrid, internet and ITV

Campuses: Levelland, Reese, and Dual Credit

Course Description: In-depth study and applications 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: Minimum score of 350 on the TSIA1, minimum score of 950 on the TSIA2, a diagnostic score of 6 on the TSIA2, TSI-exempt status, or a successful completion with a grade of 'C' or better in MATH 1314.

Credit: 3 **Lecture:** 3 **Lab:** 0

Textbook: *Trigonometry*, Dugopolski, 2019, 5th Edition, Prentice Hall/Pearson Education

Supplies: Please see the instructor's course information sheet for specific supplies.

This course partially satisfies a Core Curriculum Requirement: Mathematics Foundational Component Area (020)

Core Curriculum Objectives addressed:
- **Communications skills**—to include effective written, oral and visual communication
- **Critical thinking skills**—to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
- **Empirical and quantitative competency skills**—to manipulate and analyze numerical data or observable facts resulting in informed conclusions

Student Learning Outcomes: Upon completion of this course and receiving a passing grade, the student will be able to:

1. Compute the values of trigonometric functions for key angles in all quadrants of the unit circle measured in both degrees and radians.
2. Graph trigonometric functions and their transformations.
3. Prove trigonometric identities.
4. Solve trigonometric equations.
5. Solve right and oblique triangles.
6. Use the concepts of trigonometry to solve applications.

Student Learning Outcomes Assessment: A pre- and post-test questions will be used to determine the extent of improvement that the students have gained during the semester

Course Evaluation: There will be departmental final exam questions given by all instructors.

Attendance/Student Engagement Policy: Attendance and engagement are the most critical activities for success in this course. The instructor maintains records of the student's attendance and submission of assignments throughout the semester. The student is expected to attend at least eighty percent (80%) of the **total** class meetings **and** submit at least eighty percent (80%) of the **total** class assignments to have the best chance of success. If the student fails to meet these minimum requirements, the instructor may remove the student from the class with an X, upon their discretion, to help the student from harming their GPA. If the student can not receive an X, the instructor will assign an F.

Plagiarism violations include, but are not limited to, the following:
1. Turning in a paper that has been purchased, borrowed, or downloaded from another student, an online term paper site, or a mail order term paper mill;
2. Cutting and pasting together information from books, articles, other papers, or online sites without providing proper documentation;
3. Using direct quotations (three or more words) from a source without showing them to be direct quotations and citing them; or
4. Missing in-text citations.

Cheating violations include, but are not limited to, the following:
1. Obtaining an examination by stealing or collusion;
2. Discovering the content of an examination before it is given;
3. Using an unauthorized source of information (notes, textbook, text messaging, internet, apps) during an examination, quiz, or homework assignment;
4. Entering an office or building to obtain an unfair advantage;
5. Taking an examination for another;
6. Altering grade records;
7. Copying another's work during an examination or on a homework assignment;
8. Rewriting another student's work in Peer Editing so that the writing is no longer the original student's;
9. Taking pictures of a test, test answers, or someone else's paper.

COVID Syllabus Statement: It is the policy of South Plains College that as a condition of on-campus enrollment, all students are required to engage in safe behaviors to avoid the spread of COVID-19 in the SPC community. There will be no requirement for face coverings at any location on any South Plains College campus or classroom. Faculty, staff, or students may continue to wear a mask voluntarily, but there will be no requirements for face coverings in any circumstance. Students who believe they have been exposed or may be COVID-19 positive, must contact Health Services, DeEtte Edens, BSN, RN at (806) 716-2376 or dedens@southplainscollege.edu.

Student Code of Conduct Policy: Any successful learning experience requires mutual respect on the part of the student and the instructor. Neither instructor nor student should be subject to others' behavior that is rude, disruptive, intimidating, aggressive, or demeaning**.** Student conduct that disrupts the learning process or is deemed disrespectful or threatening shall not be tolerated and may lead to disciplinary action and/or removal from class.

Diversity Statement: In this class, the teacher will establish and support an environment that values and nurtures individual and group differences and encourages engagement and interaction. Understanding and respecting multiple experiences and perspectives will serve to challenge and stimulate all of us to learn about others, about the larger world and about

ourselves. By promoting diversity and intellectual exchange, we will not only mirror society as it is, but also model society as it should and can be.

Disability Statement: Students with disabilities, including but not limited to physical, psychiatric, or learning disabilities, who wish to request accommodations in this class should notify the Disability Services Office early in the semester so that the appropriate arrangements may be made. In accordance with federal law, a student requesting accommodations must provide acceptable documentation of his/her disability to the Disability Services Office. For more information, call or visit the Disability Services Office at Levelland (Student Health & Wellness Office) 806-716-2577, Reese Center (Building 8) 806-716-4675, or Plainview Center (Main Office) 806-716-4302 or 806-296-9611.

Nondiscrimination Policy: South Plains College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following person has been designated to handle inquiries regarding the non-discrimination policies: Vice President for Student Affairs, South Plains College, 1401 College Avenue, Box 5, Levelland, TX 79336. Phone number 806-716-2360.

Title IX Pregnancy Accommodations Statement: If you are pregnant, or have given birth within six months, Under Title IX you have a right to reasonable accommodations to help continue your education. To activate accommodations you must submit a Title IX pregnancy accommodations request, along with specific medical documentation, to the Director of Health and Wellness. Once approved, notification will be sent to the student and instructors. It is the student's responsibility to work with the instructor to arrange accommodations. Contact the Director of Health and Wellness at 806-716-2362 or email rcanon@southplainscollege.edu for assistance.

Campus Concealed Carry: Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in South Plains College buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and South Plains College policy, license holders may not carry a concealed handgun in restricted locations. For a list of locations and Frequently Asked Questions, please refer to the Campus Carry page at: http://www.southplainscollege.edu/campuscarry.php
Pursuant to PC 46.035, the open carrying of handguns is prohibited on all South Plains College campuses. Report violations to the College Police Department at 806-716-2396 or 9-1-1.

SPC Bookstore Price Match Guarantee Policy: If you find a lower price on a textbook, the South Plains College bookstore will match that price. The difference will be given to the student on a bookstore gift certificate! The gift certificate can be spent on anything in the store.

If students have already purchased textbooks and then find a better price later, the South Plains College bookstore will price match through the first week of the semester. The student must have a copy of the receipt and the book has to be in stock at the competition at the time of the price match.

The South Plains College bookstore will happily price match BN.com & books on Amazon noted as *ships from and sold by Amazon.com*. Online marketplaces such as *Other Sellers* on Amazon, Amazon's Warehouse Deals, *fulfilled by* Amazon, BN.com Marketplace, and peer-to-peer pricing are not eligible. They will price match the exact textbook, in the same edition and

format, including all accompanying materials, like workbooks and CDs.

A textbook is only eligible for price match if it is in stock on a competitor's website at time of the price match request. Additional membership discounts and offers cannot be applied to the student's refund.

Price matching is only available on in-store purchases.   Digital books, access codes sold via publisher sites, rentals and special orders are not eligible. Only one price match per title per customer is allowed.

Note: The instructor reserves the right to modify the course syllabus and policies, as well as notify students of any changes, at any point during the semester.

Professor: Dr. Ramesh Krishnan   (alias: Krams)

Office: AG 108   **PHONE:** (806) 894-9611 **x** 2698
Email: rkrishnan@southplainscollege.edu

Office Hours: **MW:** 10:20 – 11:00am ; 12:15 – 2:30pm; Fri 8:00 – 10:00 am
The Faculty will be at his office at AG108 only on Mondays and Tuesdays.
The rest of the days will be virtual office hours. For contacting the faculty during virtual office hours please email the faculty.

Textbook: Trigonometry, 5th ed., Dugopolski + MyLab

ATTENDANCE: Attendance and effort are highly important for success in this course.
Any student having more than 3 absences in the class stands a chance of automatically being dropped from this course with a grade of F. The only exception will be a medical emergency for which proper documentation, as deemed appropriate by the professor, will be needed.

GRADING: Grades in the course will be based on the following components:

• 3 exams	(60%)		$A \geq 90$
• Homework	(10%)		$80 \leq B < 90$
• Quiz	(10%)		$70 \leq C < 80$
• Final exam	(20%)		$60 \leq D < 70$
			$F < 60$

TOTAL   **100%**

PS: NO MAKE-UP exams will be given. If you miss **one**, the final exam will count twice. **NO MAKE-UP on the Quiz**! Quiz will be unannounced.

EQUAL OPPORTUNITY: South Plains College strives to accommodate the individual needs of all students in order to enhance their opportunities for success in the context of a comprehensive community college setting. It is the policy of South Plains College to offer all educational and employment opportunities without regard to race, color, national origin, religion, gender, disability or age.

DISABILITY: Students with disabilities, including but not limited to physical, psychiatric or learning disabilities, who wish to request accommodations in this class should notify the Special Services Office early in the semester so that the appropriate arrangements may be made. In accordance with federal law, a student requesting accommodations must provide acceptable documentation of his/her disability to the Special Services Coordinator. For more information, call or visit the Special Services Office in the Student Services Building, 894-9611 ext. 2529, 2530.

DROPPING A COURSE: If you decide to drop the course, return a completed official drop form to the registrar's office by the dates given in the schedule of classes.

HOMEWORK: All homework will be done and submitted through MyLab. There will be no make up for the homework assignments if you miss the due dates on MyLab. Sufficient time will be

provided to finish your homework assignments. Please do not wait until the last minute to finish your assignments as the software MyLab is live online and there is a very good chance the website could be down on the last day or you could be having a problem connecting on your end. Either way no opportunity will be provided to make up the assignment. You are expected to finish your assignments well in advance. Also the cutoff time shown on the website is Eastern Time 11:59pm!

The Course ID to be used on www.coursecompass.com is: **krishnan32579**

COURSE OBJECTIVES: Upon completion of this course, the student will be able to:
1. Find the distance between two points
2. Describe the trigonometric functions and their uses
3. Use the relationship between trig functions to describe angles
4. Use calculators to find the trig functions of any angle
5. Find related angles
6. Solve right triangles
7. Use the laws of sine and cosine
8. Find the area of any triangle
9. Convert degrees into radians and vice-versa
10. Find the length of a circular arc
11. Use the concepts of linear and angular velocity to solve word problems
12. Use trig identities to solve algebraic equations
13. Solve trigonometric equations
14. Graph trig functions and use the graphs to determine relationships
15. Describe the inverse trigonometric functions and use them

Week	Day	Date	Topic	What is Due?
1	M			
	W	Jan 19	Syllabus, 1.1: Angles and Degree Measure	
2	M	Jan 24	1.2: Angles in Degrees & Radians, Arc Length, and Area	
	W	Jan 26	1.3: Angular and Linear Velocity	
3	M	Jan 31	1.4: Trigonometric Functions	
	W	Feb 2	1.5: Solving Right Triangle	
4	M	Feb 7	1.6: The Fundamental Identity, Reference Angle	
	W	Feb 9	Exam I Review	
5	M	Feb 14	3.1: Basic Identities	
	W	Feb 16	Exam I (20%)	
6	M	Feb 21	3.2: Verifying Identities	
	W	Feb 23	3.3: Sum & Difference Identities for Cosine	
7	M	Feb 28	3.4: Sum & Difference Identities for Sine & Tangent	
	W	Mar 2	3.5: Double Angle and Half Angle Identities	
8	M	Mar 7	Exam II Review	
	W	Mar 9	Exam II (20%)	

9	M	Mar 21	5.1: The Law of Sines	
	W	Mar 23	5.2: The Law of Cosines	
10	M	Mar 28	5.3: Area of a Triangle	
	W	Mar 30	5.4: Vectors	
11	M	Apr 4	5.5: Application of Vectors	
	W	Apr 6	Exam III: Review	
12	M	Apr 11	4.1: Inverse Trig Functions	
	W	Apr 13	Exam III (20%)	
13	M	Apr 18	4.2: Basic Sine, Cosine, and Tangent Equations	
	W	Apr 20	4.3:	
14	M	Apr 25	2.1: Unit Circle and Graphing	
	W	Apr 27	2.2: Graphing Secant, Cosecant, Tangent and Cotangent	
15	M	May 2		
	W	May 4	Final Exam Review	
16	M	May 9	Final Exam	

NOTE: The Schedule above is only a guideline. Please follow instructions in class for exact dates of the exams.