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, Downtown Center, 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 <u>may</u> 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.

Student Code of Conduct Policy: Any successful learning experience requires mutual respect from the student and the instructor. Neither the instructor nor the student should be subject to others' rude, disruptive, intimidating, aggressive, or demeaning behavior. 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.

South Plains College policies concerning diversity, disabilities, non-discrimination, Title IX Pregnancy Accommodations, and Campus Concealed Carry Statements can be found here: https://www.southplainscollege.edu/syllabusstatements/.

South Plains College policies, return to campus plan, and protocols regarding COVID-19 can be found here: https://www.southplainscollege.edu/emergency/covid19-faq.php.

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.

TexBook Program: *This course is in the SPC TexBook program, so you do not need to purchase a textbook or access code for this course.*
- **What is TexBook?** The required textbook/digital content for this course is available to you in Blackboard from the first day of class. The charge for the textbook/digital content is the lowest price available from the publisher and bookstore and is <u>included</u> in your tuition.
- **How do I access my TexBook?** Your course material is in your Blackboard course from the first day of class. Access to your course material is provided either by VitalSource or other links inside your Blackboard course. VitalSource (and many publisher's) eBook features include the ability to hear the text read aloud, highlight, take notes, create flash cards, see word definitions, build study guides, print select pages, and download 100% of the book for offline access.
- **Help with TexBook issues and support:** check with your professor or visit**: https://support.vitalsource.com/hc/en-us/requests/new** (available 24/7 via chat, email, phone, and text)
- **Opting out of TexBook:** Participating in TexBook is not mandatory, and you can choose to opt out. However, by opting out you will lose access to the course textbook/digital content and competitive pricing, and you will need to purchase the required course material on your own. If you drop the class or opt-out before the opt-out deadline, the TexBook fee will be automatically refunded to your SPC account. The opt-out deadline for Fall and Spring is the

twelfth class day. The opt-out deadline for shorter terms varies between the second and third class day.

Please consult with your professor before deciding to opt-out. If you still feel that you should purchase the course textbook/materials on your own, send an **opt-out email** to **pwells@texasbook.com**. Include your first name, last name, student ID number, and the course you are opting out of. Once you have been opted-out, you will receive a confirmation email. If you need assistance with the process, contact the SPC Bookstore:

Email: pwells@texasbook.com / **Phone**: 806-716-2097
Email: agamble@texasbook.com / **Phone**: 806-716-4610

MATH 1316 – PLANE TRIGONOMETRY
South Plains College – SPRING 2023

Professor: Dr. Ramesh Krishnan   (alias: Krams)

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

Office Hours: M: 10:20 – 11:00am ; 12:45 – 2:30pm; T: 12:20 – 2:30pm;
                        W: 10:20 – 11:00 am (virtual); F: 8:00 – 10:45 am

The Faculty will be at his office at AG108 only on Mondays and Tuesdays.
For contacting the faculty during virtual office hours please email the faculty.

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

You are automatically enrolled in "Texbook Program". Read the common course syllabus listed above to know more about the Texbook Program.

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.

The Course ID to be used on www.coursecompass.com is: **krishnan48586**

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

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

Week	Day	Date	Topic
1	M		
	W	Jan 18	Syllabus, 1.1: Angles and Degree Measure
2	M	Jan 23	1.2: Angles in Degrees & Radians, Arc Length, and Area
	W	Jan 25	1.3: Angular and Linear Velocity
3	M	Jan 30	1.4: Trigonometric Functions
	W	Feb 1	1.5: Solving Right Triangle
4	M	Feb 6	1.6: The Fundamental Identity, Reference Angle
	W	Feb 8	Exam I Review
5	M	Feb 13	3.1: Basic Identities
	W	Feb 15	Exam I (20%)
6	M	Feb 20	3.2: Verifying Identities
	W	Feb 22	3.3: Sum & Difference Identities for Cosine
7	M	Feb 27	3.4: Sum & Difference Identities for Sine & Tangent
	W	Mar 1	3.5: Double Angle and Half Angle Identities
8	M	Mar 6	Exam II Review
	W	Mar 8	Exam II (20%)
9	M	Mar 20	5.1: The Law of Sines
	W	Mar 22	5.2: The Law of Cosines
10	M	Mar 27	5.3: Area of a Triangle
	W	Mar 29	5.4: Vectors
11	M	Apr 3	5.5: Application of Vectors
	W	Apr 5	Exam III: Review
12	M	Apr 10	4.1: Inverse Trig Functions
	W	Apr 12	Exam III (20%)
13	M	Apr 17	4.2: Basic Sine, Cosine, and Tangent Equations
	W	Apr 19	4.3:
14	M	Apr 24	2.1: Unit Circle and Graphing
	W	Apr 26	2.2: Graphing Secant, Cosecant, Tangent and Cotangent
15	M	May 1	
	W	May 3	Final Exam Review
16	M	May 8	Final Exam