

Math 1316  
Plane Trigonometry  
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**MATHEMATICS DEPARTMENT**

Division of Arts & Science  
**SOUTH PLAINS COLLEGE**

Fall 2019  
Sheyleah Harris-Plant, Ph.D.

# South Plains College

## Mathematics 1316 – Plane Trigonometry

**Section:** 003, Tuesday and Thursday, 11:00 A.M.

**Room:** Agriculture Building 103

“Intelligence plus character – that is the goal of true education.” – Dr. Martin Luther King, Jr.

“Hard work is required, but must also produce value.” – Norman Chaffee

“True knowledge exists in knowing that you know nothing.” – Socrates

“There is no end to education. It is not that you read a book, pass an examination, and finish with education. The whole of life, from the moment you are born to the moment you die, is a process of learning.” – Jiddu Krishnamurti

“In the United States, we experience many freedoms. Two of these freedoms include the freedom to succeed and the freedom to fail. Which one will you choose?” – Alan Worley

**Instructor:** Sheyleah V. Harris-Plant, Ph.D.    **Office Hours:** (on the Levelland Campus)

**Phone:** (806) 796-0613

**Email:**

[sharris@southplainscollege.edu](mailto:sharris@southplainscollege.edu)

Monday	Tuesday	Wednesday	Thursday	Friday
1330-1530	1330-1530	1330-1530	1330-1530	
Lubbock Center	Levelland Campus	Lubbock Center	Levelland Campus	
<i>Or by appointment</i>				

**Note about Office Hours:** Any student is more than welcome to visit during office hours, however, for the student’s visit to be most effective it is best to make an appointment. Students from other classes are often visiting during office hours and other college responsibilities often prevent office hours without notice.

**Course Materials:** Spiral in South Plains College bookstore titled *Plane Trigonometry* by Sheyleah Harris-Plant.

**Reference Textbooks:** (The textbook is not required for the course, but the student is welcome to purchase any of the following textbooks.)

Dugopolski, M. (2015). *Trigonometry*, 4<sup>th</sup> ed, Boston: Pearson. ISBN 9780321923486

Lial, M. L., Hornsby, J., Schneider, D. I. (2008). *Trigonometry*, 9<sup>th</sup> ed, New Jersey: Pearson. ISBN 0321528859

Young, C. Y. (2012). *Trigonometry*, 3<sup>rd</sup> ed, New Jersey: John Wiley & Sons, Inc. ISBN 9780470648025

### Supplementary Course Information

Blackboard is the online course management system that will be used for this course. This course syllabus, as well as any class handouts, can be accessed through Blackboard. Login at <https://southplainscollege.blackboard.com/>. The user name and password should be the same as the MySPC and SPC email.

**User name:** first initial, last name, and last 4 digits of the Student ID

**Password:** Original CampusConnect Pin No. (found on SPC acceptance letter)

**Supplies:** Pencil, binder, loose-leaf paper, graph paper, ruler, stapler, and erasers (**SCIENTIFIC CALCULATORS ALLOWED, NO GRAPHING CALCULATORS**)

### Course Description

Topics will include trigonometric functions, radian measure, logarithms, oblique triangles, functions of composite angles, trigonometric identities and equations, and inverse trigonometric functions.

**Course Purpose**

The purpose of this course is to provide a fundamental background in trigonometry, to meet the mathematics requirement for the core curriculum, and to provide a basis for further study in mathematics.

**Course Requirements**

To maximize the potential to complete this course, a student should attend all class meetings, take notes and participate in class, complete all homework assignments and examinations including final examinations.

**Student Learning Outcomes/Competencies**

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.

**Core Objectives*****Communication Skills***

Effective development, interpretation, and expression of ideas through written, oral, and visual communication.

- Develop, interpret, and express ideas through written communication
- Develop, interpret, and express ideas through oral communication
- Develop, interpret, and express ideas through visual communication

***Critical Thinking***

Creative thinking, innovation, inquiry, analysis, evaluation, and synthesis of information.

- Generate and communicate ideas by combining, changing, and reapplying existing information
- Gather and assess information relevant to a question
- Analyze, evaluate, and synthesize information

***Empirical and Quantitative Competency Skills***

The manipulation and analysis of numerical data or observable facts resulting in informed conclusions.

- Manipulate and analyze numerical data and arrive at an informed conclusion
- Manipulate and analyze observable facts and arrive at an informed conclusion

**Disclaimer**

The instructor reserves the right to alter any class policies as deemed necessary by the instructor or South Plains College and will announce any changes in class. If a student has any questions about a change in policy ask the instructor for clarification.

To successfully complete the course objectives, the students must already be prepared to factor algebraic expressions, reduce, add, subtract, multiply, divide, and simplify rational expressions, and simplify, add, subtract, multiply and divide exponential and radical expressions.

**Class Cancellation**

In the event of the class being canceled by the school, the student will be responsible for the lecture material. The class will continue on the calendar presented. All information needed is on Blackboard and should be accessed by the student.

**Attendance Policy\***

Attendance and effort are the most important activities for success in this course. Records of your attendance are maintained throughout the semester. Four absences, **for any reason**, are allotted to the student for the semester. Tardies count as one-half (1/2) of an absence. Tardies will be applied for consistently being late to class, as deemed by the instructor and leaving class early. If this number is exceeded, the instructor has the right to drop you with a grade of F or an X, depending on their discretion. You can seek temporary reinstatement within a week after being withdrawn, assuming the student submits their syllabus receipt, but you must withdraw yourself from the course via the Admission and Records Office within two days of reinstatement. In the latter case, you will receive a W or a U. **After the two days have expired, the instructor has the right to drop you for a final time, after which there will be no reinstatement. THERE WILL BE NO WAITING UNTIL THE END OF THE SEMESTER TO WITHDRAW!**

**Withdrawal**

If you wish to withdraw from this class for any reason, you must initiate the appropriate steps on your own. To withdraw from this class, you will need to go to the Admissions and Records office either on the Levelland campus or the Reese Center campus, and fill out a drop notification form, and pay \$5. The drop form can be obtained online in MySPC, under the Student Forms and Tools link. Please be aware that SPC may not permit an undergraduate student to drop a total of more than six courses (including any course a transfer student has dropped at another institution of higher education) if the student enrolled in college for the first time during the Fall 2007 academic term or any term subsequent to the Fall 2007 term.

**Email Policy**

All students at South Plains College are assigned a standardized SPC e-mail account. Although personal e-mail addresses will continue to be collected, the assigned SPC e-mail account will be used as the official channel of communication for South Plains College. The Student Correspondence Policy can be found at [www.southplainscollege.edu](http://www.southplainscollege.edu). To access the SPC student e-mail account, log in to MySPC and click the SPC Google Mail option under Campus Bookmarks. (Copied from SPC Student Guide)

Since all students have an assigned SPC email, the instructor will only acknowledge, respond, and send emails to your assigned SPC email. This ensures all correspondence from the instructor is received by the intended recipient.

**Final Grading Policy**

All grades are rounded from the tenths place. Upon the submission of grades at the end of the semester, **ALL GRADES ARE FINAL!**

**Grading Scale**

90 or above	A
80 to 89	B
70 to 79	C
60 to 69	D
59 and Below	F

**Assignment Weights**

<b>Practice Assessment</b>			<b>32 points</b>
<i>Portfolio</i>	2 @ 1 point		2 points
<i>Quizzes</i>	10 @ 2 points		20 points
<i>Homework</i>	10 @ 1 point		10 points
<b>Aptitude Assessment</b>			<b>68 points</b>
<i>Exams</i>	4 @ 12 points		48 points
<i>Final Exam</i>	1 @ 20 points		20 points
<b>Total Points</b>			<b>100 points</b>
<b>Extra Credit Points</b>			
<i>Quizzes</i>	4 @ 2 points		8 points
<i>Homework</i>	4 @ 1 point		4 points

**All supplemental material and your current grade are available all semester on South Plains College's Blackboard server.**

\* The submission of the syllabus receipt is required.

**Feedback**

The instructor will usually return feedback by the next class day; however, they reserve the right to have one (1) week to grade assignments and post grades from the due date.

**Religious Holy Days**

In accordance with Section 51.911, Texas Education Code, South Plains College will allow a student who is absent from class for the observance of a religious holy day to take an examination or complete an assignment scheduled for that day within seven (7) calendar days after the absence. Students are required to file a written notification of absence with each instructor within the first fifteen (15) days of the semester (**Monday, 16 September 2019**) in which the absence will occur. Forms for this purpose are available in the Student Services Office along with instructions and procedures. "Religious holy days" means a holy day observed by a religion whose place of worship is exempt from property taxation under Section 11.20, Tax Code. (copied from current South Plains College catalog)

**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. (copied from current South Plains College Faculty Handbook)

**Disabilities 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. (copied from current South Plains College Faculty Handbook)

**Sexual Misconduct**

As a faculty member, I am deeply invested in the well-being of each student I teach. I am here to assist you with your work in this course. If you come to me with other non-course-related concerns, I will do my best to help.

It is important for you to know that all faculty members are mandated reporters of any incidents of sexual misconduct. That means that I cannot keep information about sexual misconduct confidential if you share that information with me. Mrs. Crystal Gilster, the Director of Health & Wellness, can advise you confidentially as can any counselor in the Health & Wellness Center. They can also help you access other resources on campus and in the local community. You can reach Mrs. Crystal Gilster at 716-2362 or [cgilster@southplainscollege.edu](mailto:cgilster@southplainscollege.edu) or go by the Health and Wellness Center. You can schedule an appointment with a counselor by calling 716-2529.

**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: <https://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.

## Academic Honesty, Equal Opportunity

You are expected to uphold the ideas of academic honesty. All work that is graded must be your own. This policy applies to all work attempted in this course. If this policy is violated the student will receive an **F** for the assignment and will be dropped with an **F**. For more details on what is considered cheating, see the South Plains College catalog.

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.

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 Mrs. Crystal Glistler, Director of Health and Wellness at 806-716-2362 or email [cglistler@southplainscollege.edu](mailto:cglistler@southplainscollege.edu) for assistance.

## Holiday/Travel Statement\*

If a student has pre-existing plans to travel out of the area during scheduled class times, you must inform the instructor by **NO LATER THAN Monday, 16 September 2019**, at the end of class and submit the syllabus receipt. Failure to do so will result in the forfeiture of any assignments that will come into question during your dates of absence. These assignments will not be replaced or allowed for make-up work.

## Resources

- **Free** tutoring at Levelland is available in room 116 of the Mathematics-Engineering Building, at the Reese Center campus in room RC 207 in Building 2, and at the Lubbock Center Computer Lab in Lubbock (3907 Avenue Q). Please remember to sign in when you seek the help of a tutor in each of these places.
- The South Plains College Department of Mathematics and Engineering has put one copy of the textbook for this course on reserve in the **Levelland and Reese Campus** Libraries.

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http://www.norwich.net/~randyg/toon.html



"I forgot to make a back-up copy of my brain, so everything I learned last semester was lost."



\* The submission of the syllabus receipt is required.

**Expectations of the Instructor**

The student is within all rights to expect that the instructor does the following:

- Show up, as scheduled, to teach all the information pertaining to the course.
- Provide notice of any schedule changes.
- Maximize the time allotted for this course by assessing student aptitude for covered information at the close of each lecture, when time permits.
- Present the material in a manner that can generally be understood by the majority of the class.
- Be accessible to those who need assistance outside of the classroom setting, by way of e-mail or in person, during office hours or reasonably scheduled appointment times.
- Hold to any assignment(s) given during the course of the semester unless removed.
- Uphold the policies of the college as it pertains to the student's welfare in the course.
- Not make any exceptions regarding the dismissal of any student from the course for reasons listed herein.
- Allow each student the opportunity to discuss the material presented during the lecture period.
- Provide examinations based on the information discussed in class that contains problems which use solving methods **similar** to those assigned from sections pertaining to the exam.

**Expectations of the Student**

The instructor is within all rights to expect that the student does the following:

- Show up on time, as scheduled, to receive and learn all information pertinent to the course and be mindful of any schedule changes.
- If you are going to withdraw from this course, then **all withdrawals must be done by Thursday, 14 November 2019**. There will be no withdrawals given after this date.
- READ THE SYLLABUS!!! You will remain subject to the criteria outlined herein whether you read this or not, so it is in your best interest to do so!
- Take advantage of **all** resources available to you. In the collegiate setting, all students are considered adults and are expected to uphold conduct worthy of such consideration.
- Be mindful of the classroom setting and the roles therein. While student tuition is vital to the well-being of this academic institution, this does NOT warrant the concession of an instructor to you in a manner that compromises the integrity of the classroom setting and that of the institution itself.
- Bring all materials needed for the course and refrain from bringing anything that is not needed.
- Be willing to work together with – **BUT NOT DO WORK FOR** – fellow classmates.
- Keep all homework assignments organized in a binder. This will prove to be helpful in preparing for the exams.
- **Write all graded work legibly and in pencil only. All work not done in pencil will not be accepted by the instructor and will cause you to receive a grade of zero percent (0%) for the work in question.**
- Work homework early enough to get help, if needed.
- Turn all electronic devices **off** that have no use in the classroom setting. This means all music players, cellular telephones (or cell phones), pagers, etc. In the event that a cell phone must be on (family emergencies only), then the phone must be on vibrate mode and placed on your desk or table. If an unsanctioned device is in use during an exam, then its grade will be zero percent (0%) and possible removal from the course.
- Obtain all missed information and assignments from a fellow classmate. **NO LATE WORK will be accepted!!!**

## Portfolio

The student will keep a binder which will be used as a reference and study guide. Your portfolio should be brought to class every day! The portfolio will be checked twice randomly by the instructor during the semester. The materials to be included in the portfolio can be found on the Blackboard course. The portfolio has a procedure page available on the Blackboard course. Each section should be separated by a labeled divider. Homework, quizzes, exams, and other useful material will be kept in the portfolio. The evaluation of the portfolio will take into consideration

- a. How complete the notebook is,
- b. Its organization and neatness, and
- c. How well the directions were followed

***All printed material can be found on Blackboard for this course and needs to be read at least once during the semester.***

## Homework

Achieving success in this class will require giving regular effort outside of class, meaning doing homework. If you plan to be successful in this class, expect to spend a **minimum** of 4 to 6 hours outside of class every week maintaining or increasing your math skills. Homework is a planned practice for students to master the skills taught in class and needed in higher-level mathematics courses.

Every student must do homework. Homework will be assigned daily. The assigned homework will be available on the South Plains College's Blackboard server, for printing. The homework will not be graded. However, the practice is required in order to more fully understand each topic and to successfully negotiate the quizzes and the exams.

## Quizzes

Quizzes will be given and homework collected weekly to assess if the student is practicing and mastering their math skills (doing homework). Questions will be similar to the questions in the assigned homework. No make-up quizzes will be allowed. Fourteen (14) quizzes will be administered, however, only ten (10) quizzes are counted in the one hundred (100) points for the course. The extra four (4) quizzes are built-in extra credit for the student.

## Exams\*

Exams are used to assess the amount of the course objectives that the student has mastered. The answer boxed will be the answer graded and only one answer will be graded, so the answer seen will be the one graded. Tentative exam dates are noted in the class calendar. Students have the scheduled class time to take exams and the time scheduled by the college to take the final exam. No student will be allowed to begin an exam after the first person has turned in their exam and left the classroom. If the student does poorly on their first exam, they are **required** to schedule an appointment to discuss their performance with the instructor in their office.

If a student should have to miss an exam, the instructor will consider replacing the missed exam with the final exam score if the following conditions have been met:

1. Turn in their syllabus receipt, and
2. Notify the instructor before the exam is missed.

## Exam Corrections

Students are able to correct one exam (excluding the final exam), of their choice, by the last day of the class (the last class before Final's Week) for seventy-five percent (75%) of their missed points. To complete the exam correction, the student will correct the questions missed on the exam on a different sheet of paper and return the corrections with the original exam.

## Final Exam\*

There will be a **comprehensive** final exam at the end of the semester. Failure to attempt the final exam will result in a failing grade for the course. The final exam will be given at the scheduled time determined by South Plains College, not during class time. Conflicts in test schedules should be worked out with individual instructors. A student's library records and all financial records must be clear before the student will be allowed to take final examinations in any course.

\* The submission of the syllabus receipt is required.

Homework Assignments are **assigned** on the day shown in the chart.

Date	Topic	Assignment
<b>Tuesday, 27 August</b>	Introduction	Syllabus Receipt
<b>Outline for Exam 1 – Angles and Trigonometric Functions</b>		
<b>Thursday, 29 August</b> <i>Quiz 1 Due (Syllabus Receipt)</i>	Angles	#1-34 all
<b>Monday, 2 September</b>	<b>No Class (Labor Day)</b>	
<b>Tuesday, 3 September</b>	Non-Acute Angles	#1-25 all
<b>Thursday, 5 September</b> <i>Quiz 2</i> <i>Memory Quiz 1</i>	Trigonometric Functions	#1-20 all
<b>Tuesday, 10 September</b>	Non-Standard Position Angles	#1-15 all
<b>Tuesday, 17 September</b>	<b>Exam 1 Due (12 points)</b>	
<b>Outline for Exam 2 – Trigonometric Applications</b>		
<b>Thursday, 12 September</b> <i>Quiz 3</i> <i>Memory Quiz 2</i> <b>Exam 1 Given</b>	Using a Calculator	#1-12 all
	Solving Right Triangles	#1-9 all
<b>Tuesday, 17 September</b> <b>Exam 1 Due</b>	Law of Sines	#1-9 all
<b>Thursday, 19 September</b> <i>Quiz 4</i> <i>Memory Quiz 3</i>	Law of Cosines	#1-10 all
<b>Tuesday, 24 September</b>	Triangle Applications	#1-23 all
<b>Thursday, 26 September</b> <i>Quiz 5</i> <i>Memory Quiz 4</i>	Radian Applications	#1-10 all
<b>Tuesday, 8 October</b>	<b>Exam 2 Due (12 points)</b>	
<b>Outline for Exam 3 – Graphing and Basic Analytical Trigonometry</b>		
<b>Tuesday, 1 October</b>	Characteristics of Trigonometric Functions	#1-16 all
<b>Thursday, 3 October</b> <i>Quiz 6</i> <i>Memory Quiz 5</i> <b>Exam 2 Given</b>	Graphs of the Sine and Cosine Functions	#1-14 all
<b>Tuesday, 8 October</b> <b>Exam 2 Due</b>	Graphs of the Secant and Cosecant Functions	#1-12 all
<b>Thursday, 10 October</b> <i>Quiz 7</i> <i>Memory Quiz 6</i>	Graphs of the Tangent and Cotangent Functions	#1-10 all
<b>Tuesday, 15 October</b>	Fundamental Identities	#1-25 all
<b>Thursday, 17 October</b> <i>Quiz 8</i> <i>Memory Quiz 7</i>	Simplifying Trigonometric Identities	#1-20 all
<b>Tuesday, 22 October</b> <i>Memory Quiz 8</i>	Verifying Trigonometric Identities	#1-16 all
<b>Thursday, 24 October</b> <i>Quiz 9</i> <i>Memory Quiz 9</i>	Inverse Trigonometric Functions	#1-19 all
<b>Tuesday, 29 October</b>	Trigonometric Equations with Single Angles	#1-15 all
<b>Tuesday, 5 November</b>	<b>Exam 3 Due(12 points)</b>	

Date	Topic	Assignment
<b>Outline for Exam 4 – Trigonometric Identities</b>		
<b>Thursday, 31 October</b> Quiz 10 Memory Quiz 10 <b>Exam 3 Given</b>	Sum and Difference Identities	#1-18 <b>all</b>
<b>Tuesday, 5 November</b> <b>Exam 3 Due</b>	Double-Angle Identities	#1-15 <b>all</b>
<b>Thursday, 7 November</b> Quiz 11 Memory Quiz 11	Half-Angle and Power Reducing Identities	#1-20 <b>all</b>
<b>Tuesday, 12 November</b>	Sum-to-Product and Product-to-Sum Identities	#1-10 <b>all</b>
<b>LAST DAY TO DROP</b> <b>Thursday, 14 November</b> Quiz 12 Memory Quiz 12r	Trigonometric Equations with Multiple Angles	#1-14 <b>all</b>
<b>Tuesday, 26 November</b>	<b>Exam 4 Due (12 points)</b>	
<b>Comprehensive Final Exam</b>		
<b>Tuesday, 19 November</b>	Vectors and Dot Product	#1-30 <b>all</b>
<b>Thursday, 21 November</b> Quiz 13 Memory Quiz 13 <b>Exam 4 Given</b>	Vector Applications	#1-14 <b>all</b>
<b>Tuesday, 26 November</b> <b>Exam 4 Due</b>	Polar Plane	#1-21 <b>all</b>
<b>Thursday, 28 November</b>	<b>No Class (Thanksgiving)</b>	
<b>Tuesday, 3 December</b> Quiz 14 Memory Quiz 14	Complex Plane and Forms of Complex Numbers	#1-24 <b>all</b>
<b>Thursday, 5 December</b>	Final Exam Question Session	
<b>Tuesday, 10 December</b>	<b>Final Exam (20 points) – 10:15 A.M. – 12:15 P.M.</b>	