Course Syllabus

Math 1316 – Plane Trignometry

Catalog 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.

Lecture hours = 3 **Lab hours** = 0

Prerequisites: None

Semester Credit Hours: 3
Lecture Hours per Week: 3
Lab Hours per Week: 0
Contact Hours per Semester: 48
State Approval Code: 27.0101.53 19

Class section meeting time:

Alternate Operations During Campus Closure: In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Panola College to move to altered operations. During this time, Panola College may opt to continue delivery of instruction through methods that include, but are not limited to: online learning management system (CANVAS), online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor Panola College's website (www.panola.edu) for instructions about continuing courses remotely, CANVAS for each class for course-specific communication, and Panola College email for important general information.

Core Components and Related College Student Learning Outcomes
This course counts as part of the academic requirements of the Panola College Core Curriculum and an Associate of Arts or Associate of Science degree. ☐ Yes ☐No: If no, skip to Instructional Goals.

The items below marked with an X reflect the state-mandated outcomes for this course **IF this is a CORE course**:

☐ Critical Thinking Skills – to include creative thinking, innovation, inquiry and analysis, evaluation and syntheses of information

　☐ CT1: Generate and communicate ideas by combining, changing, or reapplying existing information

　☐ CT2: Gather and assess information relevant to a question

　☐ CT3: Analyze, evaluate, and synthesize information

☐ Communication Skills – to include effective development, interpretation, and expression of ideas through written, oral, and visual communication

　☐ CS1: Develop, interpret, and express ideas through written communication

☐ CS2: Develop, interpret, and express ideas through oral communication

☐ CS3: Develop, interpret, and express ideas through visual communication

☐ Empirical and Quantitative Skills – to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions

☐ EQS1: Manipulate and analyze numerical data and arrive at an informed conclusion

☐ EQS2: Manipulate and analyze observable facts and arrive at an informed conclusion

☐ Teamwork – to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal

☐ TW1: Integrate different viewpoints as a member of a team

☐ TW2: Work with others to support and accomplish a shared goal

☐ Personal Responsibility – to include the ability to connect choices, actions, and consequences to ethical decision-making

☐ PR1: Evaluate choices and actions and relate consequences to decision-making

☐ Social Responsibility – to include intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities

☐ SR1: Demonstrate intercultural competence

☐ SR2: Identify civic responsibility

☐ SR3: Engage in regional, national, and global communities

Instructional Goals and Purposes:
This course is intended for students whose curriculum requires trigonometry as a perquisite for higher mathematics courses. It may also be taken as a first course in trigonometry or as a review course.

Learning Outcomes:
After studying all materials and resources presented in the course, the student will be able to:

1. Compute the values of trigonometric functions for key angles in all quadrants of the unit circle measures 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.

Course Content:
A general description of lecture/discussion topics included in this course are listed in the Learning Outcomes section of this syllabus.

Students in all sections of this course will learn the following content:

Circular Functions

1. Construct a rectangular coordinate system and plot a point.
2. Find the length of the radius vector r.
3. Find x or y, given y or x and r.
4. State from memory the distance formula and apply it.
5. Define trigonometric angle and construct it.
6. Define angle in standard position and construct it.
7. Define conterminal angles and give examples.

8. Define the six trigonometric functions.
9. Show that any point along the terminal side of X is valid in satisfying the definition.
10. Determine the reciprocals of sine, cosine, and tangent.
11. Show that any trigonometric function of an angle is equal to the same function of all angles conterminal with it.
12. Find the sign of the trigonometric functions in the four quadrants.
13. Find the values of the trigonometric function of X given a point along the terminal side of X.

Graphs, Inverse Circular Functions

1. Define periodic functions and illustrate.
2. Use the Unit Circle to determine the variation of each of the six trigonometric functions on the interval 0 to 360 degrees.
3. Determine the amplitude and period (wave length) of each trigonometric function.
4. Sketch the graphs of each of the six trigonometric functions
5. Solve equations for X on the interval 0 to 360 digress or 0 to 2.
6. Sketch graphs of y= a [sin (bx)] and y = a[cos(bx)]
7. Recall from memory the proper quadrants where the six inverse trigonometric functions are defined.
8. Write the principal value range for the inverse functions.
9. Evaluate the value of any of the six inverse trigonometric functions which do not yield well known angles.
10. Graph the six inverse trigonometric functions.

Trigonometric Functions: Solution of Triangles

Methods of Instruction/Course Format/Delivery:

Methods of Instruction/Course Format/Delivery: Methods employed will include Lecture/demonstration, discussion, problem solving, analysis, and reading assignments. Homework will be assigned. Faculty may choose from, but are not limited to, the following methods of instruction:

1. Lecture

2. Discussion

3. Internet

4. Video

5. Television

6. Demonstrations

7. Field trips

8. Collaboration

9. Readings

Major Assignments/Assessment:

Faculty may assign both in- and out-of-class activities to evaluate students' knowledge and abilities. Faculty may choose from – but are not limited to -- the following methods attendance, class preparedness and participation. Collaborative learning projects, exams/tests/quizzes, homework, internet, library assignments, readings, research papers, scientific observations, student-teacher conferences, and written assignments.

Assessment(s):

1. Exam per Chapter

2. Comprehensive Final Exam

Course Grade:

Assignment Weights	
Class Participation	10%
Homework/Quiz Average	15%
Exams	55%
Comprehensive Final Exam	20%

Letter Grades for the Course will be assigned as follows:

A: 90 < Average < 100

B: 80 < Average < 90

C: 70 < Average < 80

D: 60 < Average < 70

F: 00 < Average < 60

Other:
- Courses conducted via video conferencing may be recorded and shared for instructional purposes by the instructor.
- For current texts and materials, use the following link to access bookstore listings: http://www.panolacollegestore.com
- For testing services, use the following link: http://www.panola.edu/elearning/testing.html
- If any student in this class has special classroom or testing needs because of a physical learning or emotional condition, please contact the ADA Student Coordinator in Support Services located in the Administration Building or go to http://www.panola.edu/student-success/disability-support-services/ for more information.
- Withdrawing from a course is the student's responsibility. Students who do not attend class and who do not withdraw will receive the grade earned for the course.
- Student Handbook, *The Pathfinder:* http://www.panola.edu/student-success/documents/pathfinder.pdf