Syllabus: MTH 1316 Plane Trigonometry
Department of Mathematics and Statistics
Fall 2020, Dual Credit (Sections 400 & 401)

Instructor: Penny Long
Place: Nacogdoches High School
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Office Phone: 936.564.2466 ext. 2703
Class Times: Monday/Wednesdays/Fridays 3rd period or 4th period
Office Hours: Monday through Friday 7-7:20 am, ISP twice a week, email is checked daily

COVID-19 MASK POLICY
Masks (cloth face coverings) must be worn over the nose and mouth at all times in this class and appropriate
physical distancing must be observed. Students not wearing a mask and/or not observing appropriate physical
distancing will be asked to leave the class. All incidents of not wearing a mask and/or not observing appropriate
physical distancing will be reported to the Office of Student Rights and Responsibilities. Students who are reported
for multiple infractions of not wearing a mask and/or not observing appropriate physical distancing may be subject
to disciplinary actions.

Required Materials

Course Description
We will study the six trigonometric functions and how they are related to one another. Our study will
include radian measure of angles, the trig functions and their inverse functions, trig identities, graphs of
trig functions, solutions of triangles, complex numbers, and a polar coordinate system for the plane.

Course Requirements
There will be three exams and a comprehensive final that will be proctored on your campus. There are
quizzes that must be completed. Homework assignments are made after the lectures and while they are
not necessarily graded, practicing homework is how we learn mathematics, so the homework should be
completed in preparation for the quizzes.

Final Grade Components Grading Scale
20% Homework/Quizzes 90% - 100% A
60% Tests (3 @ 20% each) 80% - 89% B
20% Comprehensive Final Exam 70% - 79% C
100% Final Course Grade 60% - 69% D

General Policies and Information
• You earn your grade by communicating your understanding of the material through showing
  clearly how the solution was derived on the homework, quizzes, and exams.
• Clearly communicating mathematics will be essential in this course.
• Submit homework when asked, scanned as a PDF to my email: plong@nacisd.org
• If attending online, students should be on time, properly dressed, with video on.

Attendance Policy
• You are expected to attend class regularly, either through Zoom or face-to-face.
• Since you have a full semester to arrange any plans, they are not an excuse for missing the final.
• Students who have 3 or more unexcused absences may have points deducted from their final
  average.
• You are expected to take the weekly quiz during the class meeting time, either online or face-to-
  face.
## Course outline:

### Angles and definitions of trigonometric functions

- Angles
- Trigonometric functions

### Graphs of trigonometric functions

- Basic graphs of the trigonometric functions
- Modified graphs of the trigonometric functions

### Inverse Trigonometric Functions and Solving Equations

- Definitions and graphs of inverse trigonometric functions
- Calculations with inverse trigonometric functions
- Solving trigonometric equations

### Identities

- Logic and techniques for proving various types of trig identities

### Solving Triangles

- Solving right triangles using Law of Cosines and Law of Sines

### Vectors, Complex Numbers, and Polar Coordinates

- Vectors
- Complex number system
- Polar coordinate system

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### University Policies

- **Academic Integrity (A-9.1)**: Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism. **Definition of Academic Dishonesty**: Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one's own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one's paper without giving the author due credit. Please read the complete policy at [http://www.sfasu.edu/policies/academic_integrity.asp](http://www.sfasu.edu/policies/academic_integrity.asp)

- **Withheld Grades Semester Grades Policy (A-S4)**: Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average. The circumstances precipitating the request must have occurred after the last day in which a student could withdraw from a course. Students requesting a WH must be passing the course with a minimum projected grade of C.

- **Students with Disabilities**: To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to [http://www.sfasu.edu/disabilityservices/](http://www.sfasu.edu/disabilityservices/).

- **Acceptable Student Behavior**: Classroom behavior should not interfere with the instructor's ability to conduct the class or the ability of other students to learn from the instructional program (see the Student Conduct Code, policy D-34.1). Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed.

### Student Learning Outcomes (SLO): At the end of MTH 133, a student who has studied and learned the material should be able to:

1. State and use the unit circle and ratio definitions of the six trigonometric functions. **[EEO: 2, 5]**
2. Recall and use exact values of the trigonometric functions at integer multiples of /4 and /6 in various contexts, especially in graphing trigonometric functions. **[EEO: 2, 5]**
3. Graph the trigonometric functions and transformations of trigonometric functions by recognizing amplitude, changes in period, vertical translations, and phase shifts. **[EEO: 1, 2, 5, 6]**
4. Use appropriate trigonometric identities in solving equations involving trigonometric functions and in calculating trigonometric function values. **[EEO: 2, 3, 4, 5]**
5. Use logical reasoning and known trigonometric identities to verify that an equation is a trigonometric identity. **[EEO: 3]**
6. Use inverse trigonometric functions in applications and in solving equations. **[EEO: 1, 4, 6, 7]**
7. Determine unknown measures of sides and/or angles of triangles for which some specific measures are given. **[EEO: 1, 4, 6, 7]**
8. Solve application problems using tools such as vectors, right triangle trigonometry, the Law of Sines, and the Law of Cosines. **[EEO: 1, 4, 6, 7]**
9. Perform arithmetical operations with complex numbers and find powers and roots of complex numbers in trigonometric form. **[EEO: 2, 4, 7]**
10. Use polar coordinate system, relate it to the rectangular coordinate system, and graph equations using polar coordinates. **[EEO: 2, 5, 7]**

**There are no specific program learning outcomes for this major addressed in this course. It is a general education core curriculum course and/or a service course.**

### Exemplary Educational Objectives (EEO):

1. To apply arithmetic, algebraic, geometric, higher-order thinking, and statistical methods to modeling and solving real-world situations.
2. To represent and evaluate basic mathematical information verbally, numerically, graphically, and symbolically.
3. To expand mathematical reasoning skills and formal logic to develop convincing mathematical arguments.
4. To use appropriate technology to enhance mathematical thinking and understanding and to solve mathematical problems and judge the reasonableness of the results.
5. To interpret mathematical models such as formulas, graphs, tables and schematics, and draw inferences from them.
6. To recognize the limitations of mathematical and statistical models.
7. To develop the view that mathematics is an evolving discipline, interrelated with human culture, and understand its connections to other disciplines.