Instructor: Penny Long  
Place: Nacogdoches High School  
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Office Hours: Monday through Friday 7-7:20 am, Megalunch 90 minutes per week, email is checked daily

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.
- Please read the department syllabus at http://www.sfasu.edu/math/courses/syllabi/MTH133Syllabus.pdf

Attendance Policy
- You are expected to attend class regularly. 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.
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 \(\pi/4\) and \(\pi/6\) 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: 1, 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.