2012 Fall
Mathematics 133.004, Plane Trigonometry

Professor: Dr. Pamela Roberson
Department: Mathematics & Statistics
Email: roberson@sfasu.edu
Phone: 936-468-1882 (office)
Office: 340 Mathematics building

Class meeting times and places: 11:00 a.m. – 12:15 p.m. TR, Room 208 Math building


Course description: The course revolves around the study of the six trigonometric functions and their relationships to one another, as well as their applications to other areas of mathematics and problems in the physical world. This course of study should assist the student in making the transition from manipulative skills to an understanding of mathematical concepts. Our study will include radian measure of angles, the trigonometric functions, inverse trigonometric functions, graphs of trigonometric functions, trigonometric identities, trigonometric equations, solution of triangles, vectors in the plane, complex numbers, and a polar coordinate system for the plane.

Course Requirements:

- **Three in-class exams** (If a student must miss an exam due to an excused absence, special arrangements should be made in advance.)
- **A comprehensive final exam** (lasting 2 hours on Thursday, Dec. 13, 10:30 – 12:30)
- **Homework** will be assigned from the textbook but will not be turned in for a grade.
- **Reading questions** on Desire2Learn: Several questions due before each class meeting will cover the sections that will be discussed in class that day. Each question will require a short answer.
- **Class attendance and participation**: Students are expected to attend all class meetings, arriving on time. Leaving class early without notifying the professor in advance will result in your being counted absent for the class session. Students that sleep in class, send or receive text messages, or conduct other online activities not directly related to class will be counted absent.
- **Preparing for class**: Students should be prepared to invest several hours per day outside of class reading the text, practicing examples, and working homework exercises. Material to be discussed in class should be read before coming to class.

Grading Policy: 65% First Three Exams (top two 25% each, lowest 15%)
10% Reading questions (due before each class meeting) and class participation (including attendance)
25% Comprehensive Final Exam

A final average ranging from 90 to 100 will be an A in the course, 80 to 89 a B, 70 to 79 a C, 60 to 69 a D, and below a 60 will be an F. Your grades for this class will be recorded on D2L so that you have access to them as soon as they are available. You can log on to D2L directly at [http://d2l.sfasu.edu](http://d2l.sfasu.edu).
Course outline:

- Angles and trigonometric functions 15%
- Graphs of trigonometric functions 15%
- Inverse trig functions & solving trig equations 15%
- Identities 20%
- Solving triangles 15%
- Vectors, complex numbers, polar coordinates 20%

Department syllabus: Please read the official Department of Mathematics & Statistics syllabus for MTH 133 at [http://www2.sfasu.edu/math/courses/syllabi/mth133syllabus.pdf](http://www2.sfasu.edu/math/courses/syllabi/mth133syllabus.pdf).

Attendance Policy: Students are expected to attend all class meetings, arriving on time. If you are absent, you are responsible for determining what you missed and for being prepared for class when you return. When class begins, roll is taken, and if you are not in your seat, you will be counted absent. Leaving class early without notifying the professor in advance will result in your being counted absent for the class session. Late reading questions are not accepted. Bring your university ID card to all exams.

AARC: The Academic Assistance and Resource Center (AARC) located on the first floor of the Steen Library offers several types of academic assistance. All services are FREE. You may make weekly appointments for one-on-one tutoring and use the math walk-in help table and access the Math Online Lab. See the AARC web pages for more information [http://libweb.sfasu.edu/aarc](http://libweb.sfasu.edu/aarc).

Academic Integrity (Policy 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.

The penalty for a student found cheating on any part of an assignment, quiz, or exam in this class will range from a grade of zero on the work to a grade of F in the course, and may result in additional, more severe disciplinary measures. A student who allows another to copy his work and the student copying the work are both guilty of cheating. Do your own work. Do not show your completed work to others. Do not allow others to copy your work.

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-54)

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.

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 http://www.sfasu.edu/policies/student_conduct_code.asp). 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:
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 π/4 and π/6 in various contexts, especially in graphing trigonometric functions. [EEO: 2, 5]
3. Graph the trigonometric functions, and graph 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 the 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 the mathematics 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.