Mathematics 1303 – Trigonometry

Course Objectives

1. **Gaining factual knowledge including the mathematical notation and terminology used in this course.** Learn the vocabulary, symbolism, and basic definitions used in trigonometry including definitions of the six trigonometric functions; types of angle measure and notation; parts of triangles and circles; the various types of triangles.

2. **Learning fundamental principles including the laws and theorems arising from the concepts covered in this course.** Become familiar with the laws and formulas that result directly from the definitions; for example, the fundamental identities, properties of angles and triangles, and characteristics of the trigonometric functions and inverse trigonometric functions (including graphs).

3. **Learning how to apply course material along with techniques and procedures covered in this course to solve problems.** Use the facts, formulas, and techniques learned in this course to prove identities and solve trigonometric equations; also, solve various types of triangle problems, distance and navigation problems, and linear and angular velocity problems.

4. **Developing specific skills, competencies, and thought processes sufficient to support further study or work in this field or related fields.** Acquire a level of proficiency in the fundamental concepts and applications necessary for further study in academic areas requiring trigonometry as a prerequisite, or, for work in occupational fields requiring a background in trigonometry. These fields might include the physical sciences and engineering, as well as mathematics.

Course Content

**Textbook:** Trigonometry, Fifth Edition, by McKeague, Turner. The following chapters including the particular sections listed are covered. (See textbook “Contents.”)

1. **The Six Trigonometric Functions.** Angles, degrees, and special triangles; the rectangular coordinate system; definitions - the trigonometric functions; identities.

2. **Right Triangle Trigonometry.** Definitions in right triangle trigonometry; calculators and functions of an acute angle; solving right triangles; applications; geometric approach to vectors.

3. **Radian Measure.** Reference angle; radians and degrees; definition - circular functions; arc length and area of a sector; velocity.

4. **Graphing and Inverse Functions.** Basic graphs and amplitude; period, reflection, and vertical translation; phase shift; inverse trigonometric functions.

5. **Identities and Formulas.** Proving identities; sum and difference formulas; double-angle and half-angle formulas, additional identities.

6. **Equations.** Solving trigonometric equations; more on trigonometric equations; equations involving multiple angles.

7. **Triangles.** The law of sines; the ambiguous case; the law of cosines; vectors: an algebraic approach; dot product.

8. **Complex Numbers and Polar Coordinates.** Complex numbers; trigonometric form of complex numbers; products and quotients; polar coordinates.

**Additional Content**

**Appendix B.** Exponentials and Logarithms. Exponential functions; logarithms; properties of logarithms; common and natural logarithms; exponential equations, change of base.
Math 1303.020 - Trigonometry
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Code of Conduct:
Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding the Academic Honor Code, which is available on the web at http://www.angelo.edu/forms/pdf/honorcode5.pdf.

Statement on Disability:
"Persons with disabilities which may warrant academic accommodations must contact the Student Life Office, Room 112 University Center, in order to request such accommodations prior to any accommodations being implemented. You are encouraged to make this request early in the semester so that appropriate arrangements can be made."

Other Classes:
Math 130A.150 TTh 12:30 – 1:45 MCS 112  Math 1312.020 MW 12:00-1:15 MCS 210
Math 1303.020 MWF 9:00-9:50 MCS 216  Math 1312.040 TTh 9:30-10:45 MCS 212

Office Hours:
Monday: 8:30-9:00, 10:00-11:30, 1:15-2:30  Tuesday: 8:30-9:30, 1:45-2:15
Wednesday: 8:30-9:00, 10:00-11:30, 1:15-2:30(MathLab)  Thursday: 8:30-9:30, 1:45-2:15
Friday: 8:30-9:00, 10:00-11:30  I will be in the Math Lab on Wednesdays from 1:15-2:30

Math Lab:
All classes:  Developmental Classes
MCS 215  M-Th: 2:00 – 5:00,  F: 2:00-4:00  MCS 211: M – F 1:00-4:00
MCS 211  M – Th 6:00 – 8:00 PM

Important Dates:
Look on the webpage for exam dates, drop date and holidays (Calendar)

Grading:
A: 90 and above  B: 80 – 89  C: 70 – 79  D: 60 – 69  F: below 60

Exams: 4 Exams – plus an optional 5th exam (to be given on 15th week of semester) that can be used to drop lowest of these four exams. You will be allowed to take the optional exam only if you have missed less than 6 class meetings.

Final Exam: Comprehensive – everybody must take exam – no exceptions

HW: will be assigned on a daily basis – you will be expected to have HW done by next class meeting see a more detailed description of requirements

Quizzes: short quizzes – part of HW – should be turned in with HW
Long Quizzes: – these make up your Quiz average and are turned in during class

Grading Distribution
Exams: 68 % of grade  Final Exam: 20 % of grade  HW: 6 % of grade  QZ: 6 %
HW: See Homework Policy on webpage.

Hw will be assigned in the following format

1) 5 – 10 problems will be due the very next class meeting – if you are not able to be in class, turn HW in early or have a classmate turn HW in for you. Other problems assigned for the day will not be due until Exam day

Use the form posted on webpage to turn in the daily HW problems.

(answers sheet (Word or PDF)

2) Rest of the HW will turned in a complete FOLDER (not loose, not stapled – but in a folder) on exam day at the beginning of class. If you forget it in your car, dorm, home – you will not be allowed to turn it in.

3) These two will make up your first of five HW grades:

75% (10 problems), 20% from the folder

Process will be repeated for each exam except the final exam. See HW policy or ask me if you are having trouble how the HW grade will be obtained.

NOTES:

You are required (responsible) to have notes from the webpage as indicated in class beginning with the second day of class. Read message portion each day to find out what notes should be printed.

Bonus:

Being late to class will be considered as being absent

Encouragement – to be in class and to do the HW

1. If you miss 0 or 1 day (either excused or unexcused) and have turned in all HW I will add 2 points to your overall average - add four points to your final exam.

2. If you miss 2 or 3 days (excused or unexcused) and have turned in all HW add 1 point to your overall average and – add four points to your final exam.

3. If you miss up 4 or 5 days – I will add 4 points to your final exam

If you miss more than five days, you will not be allowed to drop an exam and you will NOT have the option of taking the fifth exam. No points of any kind will be added.

Long Quizzes:

1. You will have 1 long quiz before each exam. You will be told in advance when the quiz will be given.

3. I will drop one of the long quizzes and average the remaining four to give you a long quiz average.

Short Quizzes:

unannounced – part of your HW. They should be turned in with HW folder.

NOTE: No Make-Ups of any kind. Graphing Calculators are discouraged and in most cases not allowed.