Trigonometry
Austin Community College

Section: Spring 2008 / MATH-1316-005 / synonym 13046
Class meetings: TTh 10:35am-11:50am / NRG PB3

Instructor: Herb Ling
Office hours: MTWTh 9:00am-9:50am, or by appointment / NRG PB4
Web site: http://www.austincc.edu/herbling/trig.html
E-mail: herbling@austincc.edu
Voice mail: 223-1795, 22304#

Other tools: 1-inch binder for course notes and homework
scientific calculator (TI-30 or similar model)

Grading:
- unit tests (4) 60%
- daily grades 10%
- final exam--cumulative 30%

There will be no make-up tests. A missed test earns a grade of zero (0).

Each class meeting you will earn a daily score of up to 10 points. Your attendance and courteous participation can earn you up to 2 points. A quiz may be given in class and may earn you up to 8 points.

April 21 (Mon) is the last day that a student may withdraw from this course. Any student enrolled in the course after that date must receive a letter grade.

Schedule

<table>
<thead>
<tr>
<th>week of</th>
<th>topics</th>
<th>reading</th>
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</thead>
<tbody>
<tr>
<td>Jan 15, 17</td>
<td>similarity, right triangles, basic trig ratios; special angles</td>
<td>1.1, 1.2, 2.1, 2.3</td>
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<tr>
<td>Jan 22, 24</td>
<td>calculators, applications; trig ratios for arbitrary angles</td>
<td>2.4, 2.5, 1.3, 2.2</td>
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<tr>
<td>Jan 29, 31</td>
<td>basic trig identities; review</td>
<td>1.4</td>
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<td>Feb 5, 7</td>
<td>Test 1; radian measure, trig functions on the unit circle</td>
<td>3.1, 3.2, 3.3</td>
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<tr>
<td>Feb 12, 14</td>
<td>angular velocity, rotations; basic graphs of trig fns</td>
<td>3.4, 4.1</td>
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<tr>
<td>Feb 19, 21</td>
<td>graphing techniques; graphs of general trig fns</td>
<td>4.2, 4.3</td>
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<tr>
<td>Feb 26, 28</td>
<td>review; Test 2</td>
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<tr>
<td>Mar 4, 6</td>
<td>basic trig identities; how to prove identities</td>
<td>5.1, 5.2</td>
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<td>Mar 11, 13</td>
<td>SPRING BREAK</td>
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<tr>
<td>Mar 18, 20</td>
<td>sum and difference, double-angle ids; half-angle ids</td>
<td>5.3, 5.4, 5.5, 5.6</td>
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<td>Mar 25, 27</td>
<td>inverse functions; solving trig equations</td>
<td>6.1, 6.2, 6.3</td>
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<tr>
<td>Apr 1, 3</td>
<td>review; Test 3</td>
<td>6.4</td>
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<tr>
<td>Apr 8, 10</td>
<td>law of sines, solving triangles; law of cosines</td>
<td>7.1, 7.2, 7.3</td>
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<tr>
<td>Apr 15, 17</td>
<td>vectors, components, applications</td>
<td>7.4, 7.5, notes</td>
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<tr>
<td>Apr 22, 24</td>
<td>review; Test 4</td>
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<tr>
<td>Apr 29, May 1</td>
<td>polar coordinates; parametric equations</td>
<td>8.5, 8.6</td>
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<tr>
<td>May 6, 8</td>
<td>course review; (cumulative) final test</td>
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You are more likely to do well if you have enough time and use good strategies.

Learning anything takes time. For this course, you should spend at least 3 hours each week outside of class, reading, thinking about suggested problems, writing solutions, discussing concepts with each other, and reviewing. Many students may need more study time (6-10 hours a week).

Study “smart”. Work under conditions (light, sound, time of day, lack of distraction) that are best for you. Write neatly and organize your work. Every hour or so, take a five-minute break: get up, move around, get a drink of water. Look for patterns and connections. Smile!

Your regular attendance and courteous participation are expected.

In-class activities and discussions should be very helpful for most students. If you must miss a class, it is your responsibility to find out what material you missed and cover it outside of class. If you are absent for 4 or more TTh classes, your instructor is allowed to withdraw you from the course.

Please be considerate. Before class begins, turn off cell phones or other devices that may disturb the class. If you must leave during class, slip out quietly. Listen carefully when anyone else is speaking. Learn patience. Support your classmates as they struggle to learn. This is a team effort.

There are resources on campus to help you.

The Learning Lab (NRG 4119) provides free walk-in tutoring in many subjects, including math, reading, and writing. There is also a computer room with tutorial software for practice in basic skills. You can find detailed information about the learning labs on various campuses at http://www.austincc.edu/tutor/

The Library (NRG 1223) has books, videotapes, and audio tapes that can help you learn math and/or study more effectively. Most materials can be used in the library or checked out.

The Computer Center (NRG 1203) across the hall from the library has Internet access and productivity software for student use. In particular, you can browse the class web page at the computer center.

The Testing Center (NRG 1103) gives students flexibility in scheduling their tests and reduces the pressure of having to complete tests within a single class period.

Other useful information may be found at http://www.austincc.edu/faculty/newsemester/, especially in the “Campus Based Student Support Overview” chart, and in the ACC student handbook at http://www.austincc.edu/handbook/

Consider your options.

If you want to change sections or withdraw from this course, please discuss it with your instructor first. He may have suggestions that can help you complete the course.

Incomplete grades (I) will be given only in very rare circumstances. Generally, to receive a grade of “I”, a student must have taken all examinations, be passing, and after the last date to withdraw, have a personal tragedy occur which prevents course completion.
Statement on Students with Disabilities

Each ACC campus offers support services for students with documented physical or psychological disabilities. Students with disabilities must request reasonable accommodations through the Office of Students with Disabilities on the campus where they expect to take the majority of their classes. Students are encouraged to do this three weeks before the start of the semester.

Students who are requesting accommodation must provide the instructor with a letter of accommodation from the Office of Students with Disabilities (OSD) at the beginning of the semester. Accommodations can only be made after the instructor receives the letter of accommodation from OSD.

Statement on Student Discipline

Classroom behavior should support and enhance learning. Behavior that disrupts the learning process will be dealt with appropriately, which may include having the student leave class for the rest of that day. In serious cases, disruptive behavior may lead to a student being withdrawn from the class. ACC’s policy on student discipline can be found on page 32 of the Student Handbook.

Statement on Scholastic Dishonesty

Acts prohibited by the college for which discipline may be administered include scholastic dishonesty, including but not limited to, cheating on an exam or quiz, plagiarizing, and unauthorized collaboration with another in preparing outside work. Academic work submitted by students shall be the result of their thought, work, research or self-expression. Academic work is defined as, but not limited to, tests, quizzes, whether taken electronically or on paper; projects, either individual or group; classroom presentations; and homework.

Students who violate the rules concerning scholastic dishonesty will be assessed an academic penalty which the instructor determines is in keeping with the seriousness of the offense. This academic penalty may range from a grade penalty on the particular assignment to an overall grade penalty in the course, including possibly an F in the course. ACC’s policy can be found on page 33 of the Student Handbook.

Statement on Academic Freedom

Institutions of higher education are conducted for the common good. The common good depends upon a search for truth and upon free expression. In this course the professor and students shall strive to protect free inquiry and the open exchange of facts, ideas, and opinions. Students are free to take exception to views offered in this course and to reserve judgment about debatable issues. Grades will not be affected by personal views. With this freedom comes the responsibility of civility and a respect for a diversity of ideas and opinions. This means that students must take turns speaking, listen to others speak without interruption, and refrain from name-calling or other personal attacks.

Course Description

MATH 1316 TRIGONOMETRY (3-3-0). This course is designed for students majoring in mathematics, science, engineering, or certain engineering-related technical fields. Content includes the study of trigonometric functions and their applications, trigonometric identities and equations, vectors, and the complex number system.

Course Prerequisite

One semester of high school precalculus or trigonometry or MATH 1314 or its equivalent or recent completion of ACC’s MATD 0390 with a B or better or satisfactory score on the ACC Assessment Test. Prior to the 1977-78 catalog, trigonometry was numbered MTH 1643. Credit can be earned for either MATH 1316 or the older trigonometry course, but not both. (MTH 1753)

Instructional Methodology

This course is taught in the classroom primarily as a lecture/discussion course.
Course Rationale
This course, intended for mathematics, science, and engineering majors, is designed to prepare students for the calculus sequence. The six trigonometric functions are studied with the goals of developing a deeper understanding of both general function behavior and periodic function behavior, exploring those applications that have trigonometric models, and acquiring further proficiency with symbol manipulation.

Common Course Objectives
1. Compute the values of the six trigonometric functions for key angles measured in both degrees and radians.
2. Graph all six trigonometric functions and their transformations.
3. Use the basic trigonometric identities to verify other trigonometric identities.
4. Solve trigonometric equations.
5. Solve right and oblique triangles.
6. Represent complex numbers in trig form, and perform basic operations with them.
7. Use the concepts of trigonometry to solve applied problems.