

Trigonometry

Chris Blackburn, Room H-12, (541)790-5191, blackburn@4j.lane.edu

Office Hours: 7:45-8:30 Tuesdays and Fridays

Website: blogs.4j.lane.edu/churchillstandingclassroom/

Twitter: @CHSStandInClass

Prerequisites:

Precalculus A or equivalent course(s) with grade "C-" or better.

Course Description:

Trigonometry has wide applications in the world around us. It is a vital tool in construction, physics, and engineering. Trigonometry is preparatory for Calculus 1 (Differential Calculus, MTH 251). The major topics covered include radian measure, circular functions and their graphs, right triangle ratios and related trigonometric functions, identities, solving trigonometric equations, law of sines, law of cosines, and applications. Other topics include polar coordinates, parametric equations, vectors, and conic sections. A graphing calculator is required. See current calculator recommendation chart.

Course Objectives:

In order to successfully complete this course, the student should have demonstrated the ability to:

1. Use geometry, algebra, and graphing calculator skills from previous courses;
2. Move easily between degree and radian measure;
3. Identify and use the six trigonometric functions in right triangle applications;
4. Identify, apply, and interpret features of the equations and graphs of the six circular functions;
5. Recall and apply the basic trigonometric identities;
6. Use the sum, difference, double-angle, and half-angle identities;
7. Identify features of and use the three major inverse trigonometric functions;
8. Solve trigonometric equations analytically and with graphing technology;
9. Apply the Law of Sines and Law of Cosines where appropriate;
10. Use polar coordinates and polar equations and transform them to rectangular form and back.
11. Use complex numbers in standard form and in polar form (optional topic—time permitting);
12. Solve problems using vector notation;
13. Use parametric equations;
14. Work with the definitions, equations, and graphs of conic sections;
15. Apply geometric and trigonometric relationships to appropriate multi-step problems;
16. Use a graphing calculator to graph equations and explore concepts for equations in rectangular, parametric, or polar form.

Required Materials:

- a. Required Text: *Precalculus: Enhanced with Graphing Utilities*, 3rd edition, by Sullivan & Sullivan
- b. A programmable graphing calculator: TI 83 Plus or TI 84 Plus is recommended. TI 83s will work.
- c. Graph paper, ruler.

Class Format

Most classes will begin with a warmup. The warmups will be turned in on Fridays with your other work. If you are absent ask your classmates what the warmup was and complete it. During warmup

time, attendance will be taken. After the warmup, we will go over homework questions, then proceed to new material. There will be quizzes or in-class assignments on some days instead of new material.

Homework and Class Work

Homework and class work are extremely important parts of your learning. Math is a very interactive discipline where practice is vital to your understanding. You will turn in these assignments every Friday (or last day of the week). When time is given in class to work on class work or homework you are expected to be working on it. This means you will be working on PreCalculus and no other subject. Since my class is PreCalculus you will lose credit for the assignment given if you are working on another subject's work.

Tests and Quizzes

On the last day of every week we will have either a test or a quiz. You will be allowed to use notes on most of the quizzes but not on the tests.

Late Work

Homework and class work will be collected on the last day of each week. If you are absent on that day you will turn it in the first day you get back. If you are absent during the week you need to request an extension from me. Otherwise you will turn in your assignments on the last day of the week. Late work will be accepted within one week of the due date for half credit. If you miss a test or quiz you have one week from your return to make it up. Otherwise you will receive 25% reduced credit for every week beyond the first week of your return.

Grading

You will be assigned a letter grade on your transcript based on the following breakdown: 60% of your grade will be based on tests, 20% on quizzes, and 20% on homework and other assignments.

Attendance Policy

I am required to submit attendance online within the first ten minutes of class. If you come to class after the ten minutes are up, you will be required to go to the front office to get an admit slip.

Electronics Policy

Cell phones and ipods are a distraction to your learning. If I see them out during class, I will give you a choice to give them to me for the period or to leave for the class.

Getting Help

1. Come to office hours.
2. Consult with classmates and form study groups – math doesn't have to be a solitary struggle.
3. Get help from a free or paid tutor.
4. Consult your lesson notes which will be posted to my website and are also available via email by request.

Si necesita más información en Español sobre esta clase, por favor comuníquese con María Ladona al 541-790-5151 o por correo electrónico schaad_ma@4j.lane.edu.