

Trigonometry

There are many reasons that a student might decide to take trigonometry. Here are a few:

- A deep love and appreciation for all things mathematical, and they haven't taken trig yet.
- It's a prerequisite for another course or program of study that interests them.
- It satisfies the math requirement for transfer.
- They need to learn how to solve similar problems for their work.

If your only reason for signing up for this class is that it satisfies a transfer math requirement, and none of the other reasons apply to you, there is probably a more appropriate class for you to take. Most majors that are not math and science based require statistics. Also, although trig is only 3 units and statistics is 4, most students find statistics to be an easier class as well as being more applicable to their major.

However, if math and/or science is your passion, you have come to the right place! The topics and techniques of trigonometry are used in calculus and physics, and the level of sophistication of the problem solving is a good transition from algebra to higher levels of math.

Trigonometry starts by solving a wide variety of problems using a technique called **indirect measurement**. This technique is used to find the size of something by measuring quantities related to it. For example, you could calculate the diameter of the sun by knowing the distance to the sun. Or, you could calculate how fast you need to pedal a bicycle in order to travel 25 mph.

Later in the course, we will define trigonometric functions, which will allow us to model **periodic** phenomena. How can you tell how late the sun will set next July 4th? Trig can help. How about how low the tide will be when you plan to visit tide pools? Trig again. Want to calculate π to as many decimal places desired? You'll need calculus too, but trig is there.

To give you an idea of what I expect you to come out of this class with, I will share three Student Learning Outcomes with you. They are:

At the end of the semester, students will:

- demonstrate their understanding of proportion in the context of right triangles and circles by analyzing a variety of problems, then applying the trigonometric definitions, choosing appropriate ideas, and applying these ideas to the solution of the problems.
- demonstrate their understanding of "real life" periodic phenomena by modeling periodic data with trigonometric functions and making predictions based on the models through equation solving and function and graphical analysis.
- demonstrate, through results on a survey, an appreciation of the usefulness of trigonometry to their academic path choice and to appropriate life encounters.