



**Trigonometry Syllabus**  
**CHS Mathematics Department**

**Contact Information:** Parents may contact me by phone, email, or visiting the school.

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**Teacher Contact Websites:**

- Google Classroom

**CCSD Vision Statement:** The Chillicothe City School District will provide tomorrow's leaders with a high quality education by developing high expectations and positive personal relationships among students, staff, and community members.

**CCSD Mission Statement:** The Chillicothe City School District empowers students to learn, to lead, and to serve.

**Course Description and Prerequisite(s) from Course Handbook:**

**Trigonometry - 267**

**State Course #:** 111600

**Prerequisite:** At least a "B+" in Algebra II/"B-" in Honors Algebra II and teacher approval

**Required Option**

**Grade:** 11-12

**Graded Conventionally**

**Credit:** .5

**Course Description:**

This course is designed for college bound students. In-depth study of trigonometric and circular functions including modeling, graphing, and connecting to polar coordinates, complex numbers and series. This course deals with trigonometric functions of acute angles, the right triangle, the oblique triangle, graphs of functions, and trigonometric identities and equations. Students apply problem solving techniques to measure angles and distances indirectly and to

establish mathematical relationships dealing with triangles. Trigonometric relations are used to create and analyze mathematical models and functions.

**Learning Targets:** Defined below for clarity are the Unit Titles, Big Ideas of every Unit taught during this course, and the Essential Questions to be answered to better understand the Big Ideas. A student's ability to grasp and answer the Essential Questions will define whether or not he or she adequately learns and can apply the skills found in Big Ideas. This will ultimately define whether or not a student scores well on assessments administered for this course.

- **1st or 3rd Quarter**
  - **Unit I Title: Angle Relationships, Radian Measure, and the Unit Circle**
    - **Big Idea #1:** I can determine values of the trigonometric functions of angles.
      - *Essential Question #1: When are angles measured in degrees, minutes, and seconds? F-FT. 2*
      - *Essential Question #2: How are angles found and drawn on the coordinate plane? F-FT. 2*
      - *Essential Question #3: How are the values of trigonometric functions determined? F-TF.3*
      - *Essential Question #4: What are reciprocal identities and how are they used? F-TF.3*
      - *Essential Question #5: How do the locations of angles in the coordinate plane affect the six trigonometric functions? F-TF.3*
      - *Essential Question #6: What is a reference angle and its function in trigonometry? F-TF.3*
      - *Essential Question #7: How can non-acute angle measures be found using trigonometric functions? F-TF.3*
    - **Big Idea #2:** I can use trigonometric functions with right triangles to solve problems.
      - *Essential Question #1: How are trigonometric functions in right triangles used to solve real world problems? F-TF.3*
      - *Essential Question #2: Why are the Law of Sines and the Law of Cosines important in solving problems? G-SRT.10 G-SRT.11*
    - **Big Idea #3:** I can determine and apply the radian measure of angles.
      - *Essential Question #1: What is radian measure? F-TF.1*
      - *Essential Question #2: When is radian measure used to solve real world problems? F-TF.1*
    - **Big Idea #4:** I can use the Unit Circle to solve real-world problems.

- *Essential Question #1: How is the Unit Circle derived?* F-TF.2
    - *Essential Question #2: How is the unit circle used in the real-world?* F-TF.2
  - **Unit II Title: Graphs of the Circular Functions**
    - **Big Idea #1:** I can compose and translate graphs of the sine and cosine functions.
      - *Essential Question #1: What are the key features of the graphs of the sine and cosine functions?* F-TF.4 F-TF.5
      - *Essential Question #2: What causes the transformation of the sine and cosine functions?* F-TF.4 F-TF.5
    - **Big Idea #2:** I can compose and translate the graphs of secant, cosecant, and cotangent functions.
      - *Essential Question #1: What are the key features of the graphs of the tangent and cotangent functions?* F-TF.4 F-TF.5
      - *Essential Question #2: What are the key features of the graphs of the secant and cosecant functions?* F-TF.4 F-TF.5
      - *Essential Question #3: How are sine and cosine used to graph tangent, cotangent, secant, and cosecant?* F-TF.4 F-TF.5
- **2nd or 4<sup>th</sup> Quarter**
  - **Unit III Title: Trigonometric Identities**
    - **Big Idea #1:** I can use, simplify, and verify the fundamental identities of trigonometry.
      - *Essential Question #1: What are the fundamental identities of trigonometry and how are they found?* F-TF.8
      - *Essential Question #2: How are the fundamental identities used to simplify trigonometric expressions?* F-TF.8
      - *Essential Question #3: What determines whether a trigonometric equation is a trigonometric identity?* F-TF.8
    - **Big Idea #2:** I can understand and use the multiple-angle identities.
      - *Essential Question #1: Why are the sum and difference properties important?* F-TF.8 F-TF. 9
      - *Essential Question #2: What are the double-angle identities and their purpose?* F-TF.8
      - *Essential Question #3: What are the half-angle identities and their purpose?* F-TF.8
  - **Unit IV Title: Inverse Circular Functions and Trigonometric Equations**
    - **Big Idea #1:** I can understand the graphs and characteristics of the inverse trigonometric function.
      - *Essential Question #1: How are the inverse trigonometric functions derived?* F-TF.6

- *Essential Question #2: How are the inverse trigonometric functions graphed?* F-TF.6
- *Essential Question #3:*
- **Big Idea #2:** I can solve trigonometric equations in the real world.
  - *Essential Question #1: How are trigonometric equations solved?* F-TF.7
  - *Essential Question #2: When are trigonometric equations used to solve problems in the real-world?* F-TF.7
- **END OF COURSE EXAM**

### **Course Materials:**

- Google Chromebook
- Lined notebook paper
- Folder to put notes/papers in
- TI-84 +C is recommended, but not required

### **Textbook:**

Lial, M. L., Hornsby, J. E., Schneider, D. I., & Daniels, C. (2012). *Trigonometry Mymathlab* (10 ed.). : Addison-Wesley.

### **Electronic Resources:**

Google Classroom  
MathXL

### **Course Expectations:**

- This course will require dedication and a strong effort. What you put into Trigonometry is exactly what you will get out of it. Trigonometry is not only a building block for your subsequent math courses, but also the fourth half-credit math course on your high school transcript, which means it affects your high school GPA. Grades are earned in this classroom and I am there to help you earn the best grade possible. This classroom is a partnership and will only work if we all work together. I am always available for extra help after school or through email. We will move at a quick pace through our syllabus so it is vital that you keep up with notes and assignments. I am looking forward to this school year and getting to know all of you!

### **Grading:**

Unit Exams	50%
Assessments (Including: Quizzes, Essays, Labs, and Projects)	30%
Class work/Homework	20%
<ul style="list-style-type: none"> <li>• Each nine week's grade comprises 40% of a student's final grade.</li> <li>• The End of Course Exam comprises 20% of a student's final grade.</li> </ul>	

**Grading Scale:**

The grading scale for Chillicothe High School can be found in the student handbook or online at <http://www.chillicothe.k12.oh.us/1/Content2/studenthandbook>.

**Late Work:** Late work will be subject to the Board-adopted policy on assignments that are submitted late (to be reviewed in class).

- Regardless of the absence type (excused or unexcused), students will be expected to make up work and be held accountable for learning all material they missed.
- Any student who is absent from school (excused or unexcused) will have one (1) additional day for every day they missed, to make up his/her work for full credit (100%).
- Any student who exceeds the allotted time to turn in an assignment for full credit may still turn in late work for partial credit.
  - Any student who turns in work up to 1 week late must at least be given the opportunity to earn 75% on that assignment.
  - Any student who turns in work between 1 and 2 weeks late must at least be given the opportunity to earn 60% on that assignment.
- The end of the 9 weeks is the cut off point for teachers to accept late work from students for full or partial credit, unless the teacher decides to give the student an incomplete for the 9 weeks due to extenuating circumstances.

**Performance Based Section: Writing Assignments/Exams/Presentations/Technology**

One or more of the End of Unit Exams may be Performance Based. According to the Ohio Department of Education, “Performance Based Assessments (PBA) provides authentic ways for students to demonstrate and apply their understanding of the content and skills within the standards. The performance based assessments will provide formative and summative information to inform instructional decision-making and help students move forward on their trajectory of learning.” Some examples of Performance Based Assessments include but are not limited to portfolios, experiments, group projects, demonstrations, essays, and presentations.

### CHS Trigonometry Course Syllabus

After you have reviewed the preceding packet of information with your parent(s) or guardian(s), please sign this sheet and return it to me so that I can verify you understand what I expect out of each and every one of my students.

Student Name (please print): \_\_\_\_\_

Student Signature: \_\_\_\_\_

Parent/Guardian Name (please print): \_\_\_\_\_

Parent/Guardian Signature: \_\_\_\_\_

Date: \_\_\_\_\_