

Geometry

Course Overview and Syllabus

Course Number: 4530

Grade Level: 9–12

Prerequisite Courses: Algebra I

Credits: 1.0

Course Description

This full-year course formalizes what students learned about geometry in the middle grades with a focus on reasoning and making mathematical arguments. Mathematical reasoning is introduced with a study of triangle congruency, including exposure to formal proofs and geometric constructions. Then students extend what they have learned to other essential triangle concepts, including similarity, right-triangle trigonometry, and the laws of sines and cosines. Moving on to other shapes, students justify and derive various formulas for circumference, area, and volume, as well as cross-sections of solids and rotations of two-dimensional objects. Students then make important connections between geometry and algebra, including special triangles, slopes of parallel and perpendicular lines, and parabolas in the coordinate plane, before delving into an in-depth investigation of the geometry of circles. The course closes with a study of set theory and probability, as students apply theoretical and experimental probability to make decisions informed by data analysis.

Course Objectives

Throughout the course, you will meet the following goals:

- Define trigonometric ratios and solve problems involving right triangles
- Understand similarity in terms of similarity transformations and prove theorems involving similarity.
- Define trigonometric ratios, apply trigonometry to general triangles and solve problems involving right triangles
- Visualize relationships between two-dimensional and three-dimensional objects
- Apply knowledge of geometric concepts in modeling situations

The course objectives are implemented throughout specific lessons, focusing on applying theorems and properties, using mathematical reasoning to construct arguments and solving real world and mathematical problems.

The lesson objectives are assessed through assignments, quizzes, unit tests, performance tasks and cumulative exams.

Student Expectations

This course requires the same level of commitment from you as a traditional classroom course. Students are expected to spend approximately five to seven hours per week online on:

- Interactive lessons that include a mixture of instructional videos and tasks
- Assignments in which you apply and extend learning in each lesson
- Assessments, including quizzes, tests, and cumulative exams

Communication

Your teacher will communicate with you regularly through discussions, e-mail, chat, and system announcements, and will provide you with hours of availability, contact policies, and any synchronous attendance requirements. You will also communicate with classmates, either via online tools or face to face, as you collaborate on projects, ask and answer questions in your peer group, and develop your speaking and listening skills.

Grading Policy

You will be graded on the work you do online and the work you submit electronically to your teacher. The weighting for each category of graded activity is listed below.

Grading Category	Weight
Lesson Quizzes	20%
Unit Tests	30%
Cumulative Exams	20%
Assignments	20%
Projects	10%

Scope and Sequence

When you log into Edgenuity, you can view the entire course map—an interactive scope and sequence of all topics you will study. The units of study are summarized below:

Unit 1: Foundations of Euclidean Geometry

Unit 2: Geometric Transformations

Unit 3: Angles and Lines

Unit 4: Triangles

Unit 5: Triangle Congruence

Unit 6: Similarity Transformations

Unit 7: Right Triangle Relationships and Trigonometry

Unit 8: Quadrilaterals and Coordinate Algebra

Unit 9: Circles

Unit 10: Geometric Modeling in Two Dimensions

Unit 11: Geometric Modeling in Three Dimensions

Standards Alignment

The course was designed to meet the requirements of the 2016 Oklahoma Academic Standards for Mathematics. The standards aligned to each lesson are available in the student portal in the lesson information panel.

Materials and Technology Requirements

All course materials are provided through the student portal. You will become familiar with them through an orientation video and the student handbook. These resources are available within the Student Organizer, where you can also check the status of your operating system, processor speed, plug-ins and connection speed.

Accessibility

The course is designed for accessibility to all students. The system provides features and accommodations to meet the needs of ELL and students with IEP's, 504 plans, and Section 508. These accommodations include addressing multiple learning styles, accommodations for assessments, video caption/transcripts, read-aloud and translation tools, and many other features/accommodations.