# Geometry

## Syllabus

**Textbook:** Test Book Elementary Geometry for College Students 6th Edition

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Prerequisites: Algebra I

**Credit:** 1

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**Course Description:**

This course develops a structured mathematical system employing both deductive and inductive reasoning. It includes plane, spatial, coordinate, and transformational geometry. Algebraic methods are used to solve problems involving geometric principles. Live video demonstrations.

**Attendance login requirements:** Students must log into class at the scheduled class time and remain until class ends. Student must attend class 165 days per year.

**Homework:** Homework assignments will be given at the discretion of the instructor.

**Class Participation**: All class participation will be online. Instructor will give written feedback on progress and acceptable work directly to student online.

**Course Grade Policy:**

90-100 average = A

80-89 average = B

70-79 average = c

60-69 average =D

**Semester I**

Unit 1.1 Sets Statements and Reasons.
Unit 1.2 Informal Geometry and Measurement
Unit 1.3 Definitions and Postulates
Unit 1.4 Angles and Their Relationships
Unit 1.5 Introduction to Geometric Proof
Unit 1.6 Relationships: Perpendicular Lines
Unit 1.7 The Formal Proof of a Theorem
Unit 1 Quiz

Unit 2.1 The Parallel Postulate and Special Angles
Unit 2.2 Indirect Proof
Unit 2.3 Proving Lines Parallel
Unit 2.4 Angles and Triangles
Unit 2.5 Convex Polygons
Unit 2.6 Symmetry and Transformation
Unit 2 Quiz

Unit 3.1 Congruent Triangles
Unit 3.2 Corresponding Parts of Congruent Triangle
Unit 3.3 Isosceles Triangles
Unit 3.4 Basic Constructions Justified
Unit 3.5 Inequalities in a Triangle
Unit 3 Quiz

Unit 4.1 Properties of Parallelogram
Unit 4.2 The Parallelogram and Kite
Unit 4.3 The Rectangle, Square, and Rhombus
Unit 4.4 Trapezoid
Unit 4 Quiz

Unit 5.1 Ratios, Rates, and Proportions
Unit 5.2 Similar Polygons
Unit 5.3 Proving Triangles Similar
Unit 5.4 The Pythagorean Theorem
Unit 5.5 Special Right Triangles
Unit 5.6 Segments Divided Proportionally
Unit 5 Quiz

**Semester II**

Unit 6.1 Circles and Related Segments and Angles
Unit 6.2 More Angle Measures in the Circles
Unit 6.4 Some Constructions and Inequalities for the Circle
Unit 6 Quiz

Unit 7.1 Locus of Points
Unit 7.2 Concurrence of Lines
Unit 7.3 More About Regular Polygons
Unit 7 Quiz

Unit 8.1 Areas and Initial Postulates
Unit 8.2 Perimeter and Area of Polygons
Unit 8.4 Regular Polygons and Areas
Unit 8.5 More Area Relationships in a Circle
Unit 8 Quiz

Unit 9.1 Prisms, Area, and Volume
Unit 9.1 Pyramids, Area, and Volume
Unit 9.3 Polyhedrons and Spheres
Unit 9 Quiz

Unit 10.1 The Cosine Ratio and Applications
Unit 10.1 The Rectangular Coordinate System
Unit 10.1 The Unit Sign Ratio and Applications
Unit 10.2 Graphs of Linear Equations and Scope
Unit 10.3 Preparing to Do Analytic Proofs
Unit 10.4 Analytic Proofs
Unit 10.5 Equations of Lines
Unit 10.6 The Three-Dimensional Coordinate System
Unit 10 Quiz

Unit 11.3 The Tangent Ratio and Other Ratios
Unit 11.4 Applications with Acute Triangles
Unit 11 Quiz