

*Montgomery College - Department of Mathematics  
Rockville Campus*

**MA095 – Essentials of Geometry  
0 Semester Hours**

**Description** Intended for students who have no previous experience with high school level geometry and for those who need a refresher in basic geometry skills for future study. This course covers topics in Euclidean geometry including inductive and deductive reasoning, analysis and measurement of two- and three-dimensional figures, similarity and congruence, basic constructions, and applications. The use of tools and technology will be included when appropriate.

For computation of tuition, this course is equivalent to three semester hours. Three hours each week.

**Prerequisites** A grade of C or better in MA 091, MA 091A, or MA 091D; or appropriate score on the mathematics assessment test; or consent of department. Assessment level: RD 120.

**Topics**

- I. Line and Angle Relationships
  1. Sets and Reasoning
  2. Informal Geometry and Measurement
  3. Angles and Relationships
  4. Perpendicular Lines
  5. Introduction to Geometric Proof
- II. Parallel Lines
  1. Parallel Lines and Special Angles
  2. Indirect Proof
  3. Angles of a Triangle or Convex Polygon
- III. Triangles
  1. Congruency and relationships
  2. Isosceles Triangles
  3. Basic Constructions
- IV. Quadrilaterals
  1. Parallelogram and Kite
  2. Rectangle, Square and Rhombus
  3. Trapezoid
- V. Similar Triangles
  1. Ratios and Proportions

2. Similar Polygons
  3. Pythagorean Theorem
  4. Special Right Triangles and Proofs
- VI. Circles
1. Circles and Related Segments and Angles
  2. Constructions
- VII. Areas of Polygons and Circles
1. Perimeter and Area of Polygons
  2. Circumference and Area of Circles
- VIII. Surfaces and Solids
1. Prisms, Area and Volume
  2. Pyramids, Area and Volume
  3. Cylinders, Cones and Spheres

Text

*Elementary Geometry for College Students*, Fourth Edition, Alexander and Koeberlein, Houghton Mifflin, 2007.