

Geyer W
309.0

Geometry

I. Course Description

This course covers plane Euclidean geometry and the development of logical thinking and visualization skills.

II. Course Goals and Objectives

A Goals

- 1 The student will demonstrate an understanding of geometric concepts and proofs, with emphasis given to those topics that are essential to further studies in mathematics.

B Objectives

- 1 Explain idealized geometric figures differ from real world objects.
- 2 Define and identify geometric figures such as the point, line, segment, plane, collinear, noncollinear, ray, and angle.

III. Course Outline

A Exploring geometry

- 1 Define and identify point, line, segment, plane, collinear, noncollinear, ray, and angles.

B Reasoning in geometry

- 1 Define formal and informal proofs.
- 2 Using basic Euclidean postulates, determine the validity of elementary geometry statements

C Parallels and Polygons

- 1 Define and use reflectional and rotational symmetry.
- 2 Define polygon, center point, central angle, and axis of symmetry.

D Congruent Triangles

- 1 Develop three triangle postulates -(SSS, SAS, ASA) - using construction.
- 2 Identify and use the Congruent Radaii Theorem.
- 3 Rotate and reflect segments and polygons using a straight edge and a compass.

E Perimeter and area

- 1 Solve problems involving fixed perimeters and fixed areas.
- 2 Solve problems using the formulas for the area of triangles, parallelograms, and trapezoids.
- 3 Solve problems using the formulas for the circumference and area of a circle.

F Shapes in space

- 1 Development and understanding of orthographic projection.
- 2 Understand volume and surface area.
- 3 Solve problems using the equations of lines and planes in space.

G Surface area and volume

- 1 Define and use the formula for finding the surface area of a right rectangular prism.
- 2 Define and use the formula for finding the volume of a pyramid.

H Similar shapes

- 1 Develop and use the side-splitting theorem.
- 2 Explore relationships between cross-sectional area, weight, and height.

I Circles

- 1 Define the parts of a circle.
- 2 Explore special angles relative to the circle including secant-tangent, secant-secant, and chord-chord.

Geometry

309.1

IV Evaluation

- A Daily work
- B Quizzes
- C Exams
- D Final exam

V Instructional Material

Holt, Reinhart and Winston, H R W Geometry, Hartcourt Brace & Company, Orlando, Florida, 1997.

VI Grading scale

- 100 - 90 % = A
- 89 - 80 % = B
- 79 - 70 % = C
- 69 - 60 % = D
- Lower = F