

**Effective Date** Summer 2004-2005

**Course Description**

Prerequisite: A grade of “C” or better in MATH 1021. A study of selected topics in plane, solid, and analytical geometry.

**Course Objectives**

Students will:

1. Understand the fundamentals of geometry as presented in the topical outline.
2. Develop critical thinking and problem solving skills.
3. Cultivate an intuitive grasp of geometric relationships.
4. Foster the practice of deductive reasoning.

**Procedures to Evaluate these Objectives**

1. In-class problems after concept presentation
2. In-class exams
3. Cumulative final exam
4. Student evaluations

**Use of Results of Evaluation to Improve the Course**

1. Student responses from in-class problems will be used to provide immediate feedback to students and instructor.
2. In-class exams will be graded and returned with written evaluations to provide improved understanding of student difficulties.
3. The cumulative final exam will be graded and examined to determine areas of teaching which could use improvement.
4. Student evaluations will be used to determine areas of improvement.
5. All evaluation methods will be constantly monitored to determine if there is a more effective method of presenting the material.

**Detailed Topical Outline**

1. Review
  - a. The Nature of Geometry
  - b. The Language of Sets
  - c. The Real Numbers
2. Points and Lines
  - a. Definitions
  - b. Lines and Subsets of Lines
  - c. Measuring Line Segments
  - d. Congruent Line Segments
  - e. Geometric Proofs

3. Angles
  - a. Definitions
  - b. Measuring Angles
  - c. Congruent Angles
4. Triangles
  - a. Definitions
  - b. Congruent Triangles
  - c. Inequalities in Triangles: Indirect Proof
5. Parallel Lines
  - a. Definitions
  - b. Proving Lines Parallel
  - c. The Parallel Postulate
6. Quadrilaterals and Other Polygons
  - a. Definitions
  - b. Parallelograms
  - c. Special Quadrilaterals
  - d. Polygons Having more than Four Sides
7. Circles
  - a. Definitions
  - b. Central Angles, Arc and Chords
  - c. Inscribed Angles
  - d. Chords, Tangents and Secants
8. Similarity
  - a. Definitions
  - b. Similar Triangles
  - c. Right Triangles
  - d. Circles and Sectors