



Fall 2007

## MTG 1204

### Geometry for Education

**Course objective:** To acquaint future teachers with some basic concepts in Euclidean geometry and provide them with ideas and activities easily adaptable to the classroom.

**Textbook:** College Geometry, A Problem-Solving Approach with Applications, 2<sup>nd</sup> edition, by Gary L. Musser, Lynn E. Trimpe and Vikki Maurer (Prentice-Hall)

The following pacing schedule assume 28 meetings, not including the final exam:

- 1) 1.1 Problem-Solving Strategies
- 2) 1.2 More Problem-Solving Strategies, 2.1 Undefined Terms, Definitions, etc.
- 3) 2.2 Polygons and Circles
- 4) 2.3 Angles Measure in Polygons and Tessellations
- 5) 2.4 Three-Dimensional Shapes
- 6) 2.5 Dimensional Analysis
- 7) 3.1 Perimeter, Circumference, and Area of Rectangles and Triangles
- 8) 3.2 More Area Formulas
- 9) 3.3 The Pythagorean Theorem and Right Angles
- 10) 3.4 Surface Area
- 11) 3.5 Volume
- 12) 4.1 Reasoning and Proof in Geometry, 4.2 Triangle Congruence Condition
- 13) 4.3 Problem solving Using Triangle Congruence
- 14) 5.1 Indirect Reasoning and The Parallel Postulate
- 15) 5.2 Important Theorems Based on The parallel Postulate
- 16) 5.3 Parallelograms and Rhombus
- 17) 5.4 Rectangles, Squares, and Trapezoids
- 18) 6.1 Ratio and Proportion 6.2 Similar Triangles
- 19) 6.3 Application of Similarity
- 20) 6.4 Using Right Triangle Trigonometry to Solve Geometric Problems
- 21) 7.1 Central angles and Inscribed Angles
- 22) 7.2 Chords and Circles, 7.3 Secants and Tangents
- 23) 9.1 Isometries and Congruence, 9.2 Similitudes and Similarity
- 24) 9.3 Problem Solving Using Transformation
- 25) Topic 3 Non-Euclidean Geometry

This syllabus leaves 3 meetings for review, in-class exams, and quizzes.

The following exam schedule must follow: Three 75 minute exams in class, and 2 1/2-hour comprehensive final exam during final exam week. If you teach M-W-F give four 50 minute exams in class.