

**Mathematics 109**  
**Wi**

**5 credits**

**Geometry**  
**and Measurement for**  
**Middle School Teachers**

**Prerequisite:**

Mathematics 108. Note: Open only to middle childhood majors.

**Catalog Description:**

Geometrical concepts of definitions, postulates, congruence, similarity, coordinate geometry, transformations, and non-Euclidean geometry. Measurement concepts of units, conversion, irregular shapes, Pythagorean Theorem, and Cavalieri's Principle.

**Purpose of Course:**

The purpose of the course is to prepare teachers of middle school students. In particular, it intends to deepen and extend the prospective teachers' content knowledge of the mathematics they will teach as well as their ability to reason with and communicate that knowledge.

**Follow-up Courses:**

Statistics 145 and Mathematics 110

**Text:**

**1) Geometry Connections (Prentice Hall Series in Mathematics for Middle School Teachers)**, by J.K. Beem, Prentice Hall, 2005.

**2) Course Notes**

**Continued:**

**Topics List:**

1. Definitions and Euclidean postulates
2. Measurement (also teaching measurement in middle school))
3. Congruence (also introducing congruence in middle school))
4. Similarity (informal approach and theoretical underpinnings)
5. Coordinate geometry
6. Transformations of the plane
7. Transformations in Euclidean 2 and 3 dimensional space
8. Parallel postulate, introduction to non-Euclidean geometry