

**Catalog Description:**

This course is the second in a two semester sequence for teachers of elementary and middle grade students. This course focuses on concepts of measurement and geometry, including modern and historical perspectives.

**Prerequisite:**

A grade of C- or above in “*Number and Operations for Teachers*” (Math 1135)

**Text:**

*Mathematics for Elementary Teachers, with Activity Manual*, 4th Edition, by Sybilla Beckmann, Pearson, ISBN for the package is 9780321836715 (loose-leaf).

**Recommended Supplemental Texts:**

- *Geometric Structures: An Inquiry-Based Approach for Prospective Elementary and Middle School Teachers*, by Douglas Aichele and John Wolfe, Pearson, ISBN 9780131483927
- *Elementary Geometry for Teachers*, by Thomas Parker and Scott Baldridge, Sefton-Ash Publishing, ISBN 9780974814056

**Purpose:**

The course consists of fundamental topics in Euclidean geometry starting with measurement. This includes the concepts of length, area, volume, angles, units of measurement, precision and error.

The basic properties of two and three dimensional geometric shapes and their relationships are a central part of the course. Special emphasis is put on geometric reasoning through problem solving, including unknown angle, length, area, and volume. The course also covers topics on transformations in the plane, symmetries, congruence, and similarity. Some geometric constructions and basic geometric proofs are included.

Additional topics include an introduction to functions and equations, primarily in the linear case, and a brief introduction to probability.

**Topics List:**

1. Measurement
2. Planar shapes
3. Polyhedra
4. Plane geometry
5. Transformations in the plane, congruence, symmetry
6. Linear equations and graphs
7. Algebra and linear equations
8. Probability