

Course Objectives/Course Outline
Spokane Community College

Course Title: Mathematics for Elementary Education - C

Prefix and Course Number: MATH 210

Course Learning Outcomes:

By the end of this course, a student should be able to:

- Apply mathematics to the real world, using many different problem-solving strategies
- Analyze properties of geometric shapes, including lines, angles, polygons, tessellations, and three-dimensional objects
- Demonstrate knowledge on measurements and the conversions between different measurements
- Compute length, perimeter and area of two-dimensional objects; surface area and volume of three-dimensional objects
- Demonstrate knowledge of the concepts of Euclidean geometry, especially congruence and similarity
- Draw Euclidean constructions using a straight edge and compass
- Use Coordinate geometry to find coordinates, distance, slope, and equations; use equations to draw graphs on the coordinate plan.
- Do the standard transformations of rotation, reflection, translation, magnifications, dilations, and dilatations
- Use technology to explore geometric concepts

Course Outline:

I. Geometric shapes

- A. Recognizing geometric shapes and definitions
- B. Analyzing shapes
- C. Properties of geometric shapes: lines and angles
- D. Regular polygons and tessellations
- E. Describing three-dimensional shapes

II. Measurement

- A. Measurement with nonstandard and standard units
- B. Length and area
- C. Surface area
- D. Volume

III. Geometry (triangle congruency and similarity)

- A. Congruence of triangles
- B. Similarity of triangles
- C. Basic Euclidean constructions
- D. Additional Euclidean constructions
- E. Geometric problem solving using triangle congruence and similarity

IV. Coordinate geometry

- A. Distance and slope in the coordinate plane
- B. Equations and coordinates
- C. Geometric problem solving using coordinates

V. Geometry (using transformations)

- A. Transformations
- B. Congruence and similarity using transformations

C. Geometric problem solving using transformations

VI. Introduction to graph theory (optional)