

MTED 615
Geometry for Middle School Teachers (3 units)

Course Outline

Topics	# of Weeks
Chapter 1: A Short History and Some Geometric Problems: Geometry in Ancient Civilizations	1
Chapter 2: Basic Concepts and Some Geometric Constructions: Basic Concepts in Geometry, Compass and Straightedge Basic Geometric Constructions, and The Golden Proportion	2
Chapter 3: Geometer's Sketchpad and Study of Some Art Designs: The Geometer's Sketchpad and its Tools for Constructions, and Geometry in Art and Architecture	2
Chapter 4: Polygons and their Properties: Polygons and Triangles and Quadrilaterals	3
Chapter 5: The Geometry and Art of Tessellation: The Monohedral Tessellations of Polygons, Tessellating Regular Polygons, and Rigid Transformations and Symmetries	1
Chapter 6: Measurement - Length, Area, and Volume: Investigation, Need For Standard Units in Measuring, Measuring Length, Measuring Area, Measuring Volume and Capacity, and Measuring Mass and Weight	2
Chapter 7: Exploring Geometry of Solids: Solids, Poly Pro, and Zome Geometry and Regular and Semiregular Polyhedra	1
Chapter 8: Similarity and Self-Similarity: Magnification of an Object, Dilation, and Similarity and Self-Similarity and Fractal Geometry	1
Tests:	1
Textbooks: <u>Elements of Geometry for Teachers, 2nd Edition</u> by Reza Sarhangi and <u>Bridges: Mathematical Connections in Art, Music, and Science - 2004</u> by Reza Sarhangi and Carlo Sequin (Editors)	