MATH 255 Geometry for Middle School Teachers

Course Content Outline

Required Software: *GeoGebra* (Topics noted with * include Geogebra exploration)

	Tentative Topic
Week 1	Intro to Course and Software, Geometric Attributes *Basic Geometric vocabulary (e.g. points, lines, parallel, congruent); Simple, closed figures; convex & concave; Venn Diagrams*
Week 2	Proof and Proving, Angles *Definitions of proof; Rationale for proving; informal vs. formal deduction; Right Angles; Intro to technological tool**
Week 3	Angles and Polygons *Angles in parallel lines & transversals*; Angle sum of triangles; Interior angle sum of polygons (investigate and prove)**
Week 4	Polygons and Triangles *Classifying triangles; Triangle Inequality Theorem*; Isosceles Triangle Thm*
Week 5	Triangles *Triangle congruences; Proving using triangles; Triangle centers* Using & Proving Pythagorean Theorem;*
Week 6	Quadrilaterals *Quadrilateral properties*; Classifying quadrilaterals*
Week 7	Quadrilaterals *Classifying quadrilaterals (cont.); Proving about/using quadrilaterals;*
Week 8	2-D Shape Wrap-Up & **Midterm Exam** *Constructing quadrilaterals using properties**
Week 9	Geometric Solids *Definition of Polyhedra, prism & pyramid; Faces, Vertices, and Edges; Building and naming polyhedra*
Week 10	Geometric Solids *Nets; Regular and semi-regular polyhedra*
Week 11	Geometric Transformations *Definition & meaning of translation, rotation, reflection, dilation, rigid transformation*; Combinations of transformations**
Week 12	Similarity *Scale factor for length and area; Connection between dilation and similarity; Similarity in a coordinate plane**
Week 13	Symmetry and Tessellations *Rotational and line symmetry of 2-D shape and polyhedra; Regular and semi-regular tessellations*
Week 14	Measurement, Final Project Presentations *Concepts of Measurement; Formulas for area measurement*
	Final Exam

April 2018