Presents the fundamentals of plane and solid geometry and introduces non-Euclidean geometries and current topics. Prerequisite: Competency in Introductory Algebra MDE 10 as demonstrated through placement or by satisfactorily completing MDE 10. Lecture 3 hours. Total 3 hours per week. 3 credits.

To present the fundamentals of plane and solid geometry and introduce non-Euclidean geometries and current topics while modeling sound pedagogy to support students in presenting these concepts to their own students.

Prerequisite: Competency in Introductory Algebra MDE 10 as demonstrated through placement or by satisfactorily completing MDE 10.

Upon completing the course, the student will be able to:

Basic Properties, Definitions, Symbols, and Proof

Demonstrate geometric properties: intersecting lines, shortest distance between a point and a line, congruence of vertical angles, the seven basic Euclidean constructions, the polygon sum formula, the relationships between the base angles of an isosceles triangle and between its legs, intersecting planes, congruent segments, congruent angles, and congruent polygons

Understand relevant geometry terminology

Recognize relevant conventional geometric symbols

Use definitions and pos.2 l)a(ons T y b 5(f)-17 (,)-6 ( )11d bet)-6 (bol)26(s) T (-.9) Td( ) Tj 0.002 T 6)-07 Tw 1(ant)-6(

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ongruent Triangles

ationships between sides, angles, and diagonals

diagonals in rhombi and in rectangles,

rcs, chords, secants, and tangents in circles, and

geometric properties using inductive reasoning:

ons, rotations, reflections, two reflections over

tersecting lines, distances between relevant

s, numbers of reflection symmetries of regular

polygons and numbers and degrees of the rotational symmetries of regular polygons, formulae for the areas of parallelograms, triangles, trapezoids, and circles

Demonstrate understanding of relevant geometry terminology

Recognize relevant conventional geometric symbols

Apply properties learned to solve problems

Theorem of Pythagoras, Solid Geometry, Non-Euclidean Geometries and Topology

Demonstrate geometric properties: theorem of Pythagoras and its converse, relationships between vertices, edges, faces, bases, heights and slant heights in solids including Euler's rule, compute surface areas and volumes for solids, historical development of non-Euclidean geometries and their unique attributes and basic topological concepts including topological transformations

Demonstrate understanding relevant geometry terminology

Recognize relevant conventional geometric symbols

Apply properties learned to solve problems

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x   Basic Properties, Definitions, Symbols, and Proof

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