**J. Sargeant Reynolds Community College**
**Course Content Summary**

**Course Prefix and Number:** MTH 150 **Credits:** 3

**Course Title:** Topics in Geometry

**Course Description (including lecture hours, lab hours, total contacts)**
Presents the fundamentals of plane and solid geometry and introduces non-Euclidean geometries and current topics. Lecture 3 hours per week.

**General Course Purpose**

MTH 150 was designed for those seeking the Algebra I Add-on Teaching Endorsement. Each prospective teacher's transcripts will be reviewed by the State Department of Education for completion of certification requirements.

Students have also taken MTH 150 successfully for initial middle school mathematics endorsement and for recertification purposes. It is not, however, the correct course for a secondary mathematics teaching endorsement. Thus, students are urged to obtain written approval from the State Department of Education prior to taking MTH 150.

**Course Prerequisites/Corequisites** (E*ntry-level competencies **required** for enrollment*)

Prerequisites: Level 4 on the Compass Placement Test, and Algebra I, Algebra II, and Geometry or equivalent.

**Course Objectives** (Each item should complete the following sentence.)

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

a. Use basic properties, definitions and symbols of Geometry.
b. Demonstrate properties of intersecting lines.
c. Perform basic Geometric constructions.
d. Classify angles, triangles, and segments related to triangles.
e. Apply the polygon sum, isosceles triangle, and parallel lines properties.
f. Apply properties of quadrilaterals and circles.
g. Determine whether triangles are congruent and if so by which property.
h. Perform basic transformations.
i. Identify symmetries and which polygons will tessellate the plane.
j. Compute areas for polygons.
k. Apply the Pythagorean Theorem.
l. Classify and compute surface areas and volumes for solid figures.
m. Discuss aspects of Lobachevsky's and Reimann's Non-Euclidean Geometries and of Topology.

**Major Topics to be Included**

- Geometry: Basic Properties, Definitions, and Symbols
- Intersecting Lines
- Basic Constructions
- Angles formed when Parallel Lines are cut by a Transversal
- Properties of Triangles
- Properties of Polygons
- Properties of Circles
- Congruent Triangles
- Transformations
- Symmetry and Tessellations
- Pythagorean Theorem
- Solids
- Areas and Volumes
- Non-Euclidean Geometries
- Topology

**Effective Date of Course Content Summary (Month, Date Year)**: January 16, 2006