

MIDDLESEX COUNTY COLLEGE  
EDISON, NEW JERSEY

MATHEMATICS DEPARTMENT

Date: June 25, 2009

Course Title: Geometry

Course Number: MAT 020

Class Hours: 4

Laboratory Hours: 0

Credit Hours: 0

Dept. Head Approval: \_\_\_\_\_

Maria DeLucia, Ph.D.

Dean's Approval: \_\_\_\_\_

Reginald Luke, Ph. D.

Prerequisite: MAT 013

**Textbook of Course**

<b>Title:</b>	<u>Discovering Geometry</u>
<b>ISBN Number:</b>	1155953460-5
<b>Author:</b>	Michael Serra
<b>Publisher:</b>	Key Curriculum Press

**Catalog Course Description:**

A traditional high school geometry course for students who have successfully completed one year of high school algebra or the equivalent. The course includes topics from Euclidean geometry including basic proofs, congruent triangles, parallel and perpendicular lines, lines and planes in space, polygons, circles, and the Pythagorean Theorem. Optional topics include logic and construction.

*Note: A minimum grade of "C" is required for movement from one remedial course to another and for completion of the remedial requirements to qualify for credit courses.*

**General Objectives:**

This course is designed to help students who lack basic geometric skills to develop those skills and improve deductive thought. It is intended to review properties of quadrilaterals, right triangle concepts, and trigonometric ratios.

**The student will demonstrate through quizzes, examinations, written homework, and projects the ability to:**

1. Solve geometric problems involving intuitive, inductive, and deductive proofs.
2. Solve problems using algebraic properties, congruency theorems, characteristics of similar polygons, and circles.
3. Solve geometric problems involving angles, lines, and planes.
4. Construct with *Geometers Sketchpad* the basic Euclidean constructions.
5. Solve problems related to the theorems of right triangle trigonometry.
6. Solve problems involving areas of plane figures, surface area and volume of regular solids.

**MAT 020 SUGGESTED OUTLINE**

MAT 020 is usually run during a summer session, for four mornings a week for four weeks. If one of the class days happens to be a holiday, please adjust the sections accordingly. This outline is just a guide to course management.

<u>DAY</u>	<u>Topics</u>
1	Angles Polygons Triangles and Special Quadrilaterals Circles
2	Inductive and Deductive Reasoning Finding the nth Term Angle relationships Special angles on parallel lines
3	Copying segments and angles Bisectors and perpendiculars Angle bisectors Constructing parallel lines
4	Triangle Sums Special Triangles Triangle Inequalities Congruence Shortcuts

5	Polygon Sums Exterior Angles of Polygons Kite and Trapezoid Properties Mid segment Properties Properties of Parallelograms
6	Chords Tangents Arcs and Angles Finding Circumference, $\pi$ , Arc Length
7	Mid term test
8	Area <ul style="list-style-type: none"><li>- Rectangles &amp; Parallelograms</li><li>- Triangles, Trapezoids and Kites</li><li>- Regular Polygons, Circles</li></ul>
9	Pythagorean Theorem <ul style="list-style-type: none"><li>- Converse of Theorem</li><li>- Special Right Triangles</li><li>- Distance Formula &amp; Equation of a Circle</li></ul>
10	Volume <ul style="list-style-type: none"><li>- Prisms &amp; Cylinders</li><li>- Pyramids &amp; Cones</li><li>- Spheres - Surface Area</li></ul>
11	Similarity <ul style="list-style-type: none"><li>- Triangles &amp; Polygons</li><li>- Corresponding Parts</li></ul>
12	Trigonometry - SINE, COSINE, TANGENT <ul style="list-style-type: none"><li>- Problem-solving with Right Triangles</li></ul>
13	Review
14	Final Exam

It is also suggested that some short quizzes be given throughout the course.