COUNTY COLLEGE OF MORRIS
Course Information Outline

Course Title Geometry for Middle Grades **PREFIX&NUMBER** MAT 274

Lecture Hours 45 **Laboratory Hours** 0 **Credit Hours** 3 **Course Fee** None

Department Chairperson Approval Alexis Thurman A. Thurman **Date** 2/4/14

Division Dean Approval Patrick Enright **Date** 2/10/14

General Education Information:

Categories:

☐ Communications ☐ History ☐ Humanities ☐ Mathematics
☐ Science ☐ Social Science ☐ Technological Competency
☐ Diversity *(check if course also meets diversity category)*

Integrated Goals: *(check all that apply)*

☐ Ethical Reasoning and Action ☐ Information Literacy

1. **Catalog Course Description**

   This course will include topics in geometry and measurements with use of Geometer Sketchpad Software. Formulas for perimeter, area, and volume for polygons and polyhedrons, properties of parallel lines and perpendicular lines, fundamental topics of measurements, measurement instruments, measurement errors will be covered while infusing instructional techniques.

2. **Prerequisite(s)**
   Elementary School or N-12 subject matter endorsement

3. **Co-requisite(s)**
   None

4. **Textbooks**
   Van de Walle, John A. (2007). *Elementary and Middle School Mathematics: Teaching Developmentally* (6th edition). New York: Addison Wesley Longman, Inc.

   Chapin, S. H. and Johnson, A. (2006). *Math Matters: Understanding the Math You Teach,* 2nd edition, Sausalito, CA: Math Solutions.

5. **Supplementary Books and/or Materials**
   Geometer Sketchpad Software
   Developing Mathematical Ideas (Bastable, Russell, & Schifter, 2005-2008) DVDs and instructional materials
   - Geometry: Examining Features of Shape;
   - Geometry: Measuring Space in One, Two, and Three Dimensions; and
   - Working with Data

6. **Specialized equipment, supplies, facilities, for classes limited by enrollment or restricted by accreditation and/or equipment limitations.** (Information will be used to determine differential funding category.)
   Computer Lab

7. **Course Content (List of Topics)**
   - Points, lines, planes
   - Two and three dimensional shapes
   - Perimeter, circumference, area and volume
   - Draw, measure, transform geometric objects
   - Classify and define geometric objects
   - Parallel and perpendicular lines
   - Angels
   - Triangles
   - Instructional techniques for topics above

8. **Statement of Course LEARNING OUTCOMES**

   - Understand and identify points, lines, planes, and a variety of two-and three-dimensional shapes
   - Experience in visualizing and drawing lines, angles, triangles, parallel and perpendicular lines using Geometry Sketchpad software
   - Solve polygons, finding perimeter, circumference, area, and volume
   - Investigate relationships by drawing, measuring, visualizing, comparing, transforming, and classifying geometric objects
   - Development of mathematical reasoning, including inductive and deductive reasoning,
   - Making and validating conjectures, and classifying and defining geometric objects
   - Infusion of instructional techniques.

9. **Statement of Relation to Curriculum(s)**
   This course is one course required to complete the Elementary with Subject Matter Specialization: Mathematics Grade 5-8 Certificate of Eligibility.

10. **Format for offering the course (check all that apply)**
    ☒ **Traditional** ☐ **On-Line** ☒ **Hybrid**