COUNTY COLLEGE OF MORRIS
Course Information Outline

Course Title **Numbers and Operations for Middle Grades** PREFIX&NUMBER **MAT 270**

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

Department Chairperson Approval **Alexis Thurman** *A. Thurman* Date **2/10/14**

Division Dean Approval **Patrick Enright** Date **2/11/14**

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 prepare middle-grades mathematics teachers with a concrete understanding of numbers, number systems, operations with fractions, decimals and percent; there will be a special consideration to ratios, proportions, factors and multiples and including instructional techniques and calculator-structured lessons.

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.

   Bittinger, *Basic Mathematics,* 11th ed.,-County College of Morris Edition (Addison-Wesley)

5. **Supplementary Books and/or Materials**
   MyMathLab, Pearson

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.)
   None

7. Course Content (List of Topics)
- Operations on the whole numbers, exponents, order of operations
- Multiplication and division, fractional notation
- Addition and subtraction, fractional notation
- Addition, subtraction, multiplication and division, decimal notation
- Ratio and proportion
- Percent notation
- Sign numbers
- Instructional techniques for topics above

8. Statement of Course LEARNING OUTCOMES
- **Perform operations** of addition, subtraction, multiplication, and division on whole numbers, fractions, and decimals
- **Set up and solve** applications problems involving whole numbers, fractions, decimals and percent
- **Compute** conversions with decimals, fractions and percentages
- **Simplify** ratios and solve proportion problems
- 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