

# Minnesota State University Moorhead

## MATH 303: Foundations of Number Systems

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 3

Lab Hours/Week: 0

OJT Hours/Week: \*.\*

Prerequisites:

This course requires the following prerequisite

MATH 110 - Introduction to Mathematics

Corequisites: None

MnTC Goals: None

Sets; systems of numeration; whole number, integer, and rational number operations and properties. Particularly appropriate for early childhood, elementary, and special education majors. This course does not apply to the mathematics major or minor requirements.

**B. COURSE EFFECTIVE DATES:** 01/29/1999 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Numeration Systems and Sets
2. Whole Numbers and Their Operations: place value concept with Dienes Wood material, algorithm in different bases (base two to twelve), mental mathematics and estimation
3. Integers and Number Theory: integers operations, divisibility, prime and composite numbers, GCF and LCM
4. Rational Numbers as Fractions and their operations
5. Decimals and Real Numbers: decimals and their operations, real numbers in equations
6. Proportional Reasoning, Percents and Applications
7. Problem Solving
8. Algebraic Thinking

### D. LEARNING OUTCOMES (General)

1. Understand place value concepts using difference bases material
2. Work with a variety of models associate with different operations
3. Work with whole numbers, integers, rational numbers, decimals and their operations without using calculators
4. Solve problems using standard and other appropriate algorithms without using calculators
5. Apply number sense when solving problems

### E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

### F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

## **G. SPECIAL INFORMATION**

None noted