



Division: Science/Mathematics **Area:** Mathematics
Course Number: MATH 156 **Course Name:** Mathematics for Elementary Teachers I
Prerequisite: MATH 150 or higher or qualifying score on ACT or COMPASS text
Corequisite: NONE
Hours Required: **Class:** 45 **Lab:** 0 **Credits:** 3 (three)

Course Description/Purpose

This course is an introduction to the theory of arithmetic to develop understanding and skill in mathematical processes. It consists of set theory, logic, number bases, properties of natural numbers, integers and rational and real numbers. An emphasis is put on the use of manipulatives and problem solving. The purpose of the course is to provide the future elementary teacher with a perspective for understanding the mathematics taught in the elementary school.

Major Units

- Problem Solving
- Set Theory
- Numeration Systems
- Number Theory
- Real Numbers

Educational/Course Outcomes

Student learning will be assessed by a variety of methods, including, but not limited to, quizzes and tests, journals, essays, papers, projects, laboratory/clinical exercises and examinations, presentations, simulations, portfolios, homework assignments, and instructor observations.

Cognitive Each student will be expected to *Identify/Recognize*. . .

- strategies for problem solving;
- terms and symbols used in set theory ;
- numeration systems
- algorithms for mathematical operations in different bases;
- divisibility tests;
- exponent properties.
- properties of rational and real numbers.

Performance Each student will be expected to *Demonstrate/Practice*. . .

- determine solutions to problems involving set relations and set operations;
- count using various numeration systems;
- solve problems involving number bases other than ten;
- apply properties of the whole numbers;
- work with concepts of number theory;
- apply the ideas of number theory to the rational numbers;
- work with ratio, proportions and percents
- apply the properties of integers, rationals and real numbers