

# **MATH 104 – Fundamentals of Mathematics I – SYLLABUS**

Department of Mathematics  
Millersville University

## **Description**

Mathematics content that elementary and special education teachers of mathematics at any level need to know and understand before beginning to teach. Designed to equip all such majors with sufficient knowledge and facility in mathematics for teaching it effectively. Includes number systems, structure of algorithms, number theory, properties of integers, rational numbers and real numbers, and beginning geometry and measurement. Emphasis on problem solving and reasoning within each topic. Required of all early childhood education and middle level majors. (3 credits)

This course may be taken for general education credit (G2)

## **Prerequisites**

MPT 104 (Placement for MATH 104) or co-enrolled in MATH 094

## **Course Objectives**

By the conclusion of this course the successful student will be able to:

- Demonstrate knowledge of concepts, procedures, and skills necessary to teach the structure of number systems and arithmetic operations.
- Communicate and model important mathematical ideas related to number systems and arithmetic operations using a variety of strategies.
- Demonstrate appropriate and correct application of mathematics terminology and symbolism for number systems and arithmetic operations.
- Demonstrate the appropriate use of physical tools for representing and connecting mathematical ideas within number systems and arithmetic operations.
- Demonstrate the ability to transfer knowledge and thinking strategies to new situations.

## **Assessment**

Assessment of student achievement of the course objectives will vary from one instructor to another. Typical assessment will be made through work in class, homework, and examinations.

## **Use of Technology**

Technology use will vary by professor.

## **Topics**

- Numbers and the Base-Ten System;
- Fractions and Problem Solving;
- Addition and Subtraction;
- Multiplication;
- Division;
- Number Theory