

# SYLLABUS

## MATH 10771 – Basic Mathematical Concepts I PLUS

(5 Credit Hours)

**Catalog Information:** (Equivalent to MATH 14001) Course covers the development of the real-number system and its sub-systems, open sentences, numeration systems, modular arithmetic and some number theory concepts. Additional concepts covered include place value, logic, sets, algebra concepts and problem solving.

**Prerequisite:** Minimum 35 ALEKS math score; or minimum 22 ACT math score; or minimum 530 SAT math score; or MATH 00022 with a minimum C grade.

**Text:** *Mathematics for Elementary Teachers with Activities*, Sybilla Beckmann, 5<sup>th</sup> edition, Pearson. This course covers Chapters 1 – 8.

### Numbers and the Base-Ten System (4 days)

- Counting Numbers
- Place value in base ten and other bases
- Decimals and Negative Numbers
- Comparing and Rounding Numbers

### Problem solving (2 days)

### Fractions (5 days)

- Defining and modeling fractions
- Equivalent fractions
- Comparing fractions
- Reasoning about percent

### Addition and subtraction of whole numbers, decimals, fractions, and negative numbers (6 days)

- Interpretations and models for addition and subtraction
- Properties
- Algorithms

## EXAM 1

### Multiplication of whole numbers (5 days)

- Interpretations and models for multiplication
- Multiplying by 10 in Base Ten
- Properties
- Algorithms

## Multiplication of fractions, decimals, and negative numbers (4 days)

- Interpretations and models
- Algorithms
- Powers and scientific notation

## Division of whole numbers, negative numbers, fractions, and decimals (4 days)

- Interpretations and models
- Algorithms

## EXAM 2

## Ratio and proportional relationships (5 days)

- Defining ratio and proportional relationships
- Models for solving proportion problems
- Unit rates and multipliers
- Representing proportional relationships
- Percent increase and percent decrease

## Number theory (5 days)

- Factors and multiples
- Divisibility tests
- Prime and composite numbers
- Greatest common denominator and least common multiple
- Rational and irrational numbers

## REVIEW

## FINAL EXAM