



**BAKER COLLEGE**  
**STUDENT LEARNING OUTCOMES**

**EDU2110 Number Concepts for Educators**  
**3 Semester Hours**

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**Student Learning Outcomes & Enabling Objectives**

1. Apply mathematical techniques such as conjecture, patterns, deductive, and inductive reasoning to solve problems.
2. Apply formal reasoning to sets and compound statements.
  - a. Describe sets and subsets using appropriate notation.
  - b. Evaluate the cardinality of a set.
  - c. Find the union, intersection, difference, and Cartesian Product of sets.
  - d. Construct truth tables to determine the truth value of compound statements.
3. Demonstrate verbal and written mathematical communication skills.
  - a. Express mathematical concepts using appropriate notation.
4. Represent quantities using manipulatives, properties, models, and representations.
  - a. Differentiate, within real numbers, between whole, integer, rational, and irrational numbers.
  - b. Evaluate systems of numeration.
  - c. Relate the representations of fractional, mixed number, percentage, and decimal values.
5. Apply appropriate algorithms to perform arithmetic calculations.
  - a. Explain the relationships among basic arithmetic operations.
  - b. Complete basic arithmetic calculations in bases other than base-ten.
6. Apply algebraic reasoning to solve real world problems.
  - a. Solve linear equations.
  - b. Graph linear functions.
7. Incorporate technology in math education.
  - a. Critique current mathematics websites for teachers and students based on nationally recognized standards for mathematics and the use of technology.
  - b. Critique current peer-reviewed literature regarding the use of technology to enhance elementary mathematics education.
  - c. Demonstrate the use of the following technology tools.
    - i. Standard and graphing calculators (such as TI 71, TI 83+, or TI 84+)

- ii. Alternative forms of technology, such as manipulatives or other low-tech devices (such as Elmo, overhead projectors, interactive electronic games, etc.)
- iii. Electronic media.

## **Big Ideas and Essential Questions**

### **Big Ideas**

- Problem Solving
- Reasoning
- Numbers and Numeration
- Operations
- Algebra
- Technology in Math Education

### **Essential Questions:**

1. How do various ways of thinking about mathematics support problem solving?
2. In what ways can technology be used to enhance learning in mathematics?

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These SLOs are not approved for experiential credit.

**Effective: Fall 2017**