

Text: Billstein, Boschmans, Libeskind, Lott: A Problem Solving Approach to Mathematics for Elementary School Teachers (Pearson Publ.) **13th** ed.
Supplemental activities will be provided by instructor.

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Sections in Billstein, et al, with number of class hours to cover material:

1-1, 1-2,	4 class hours
2-1, 2-2, 2-3,	8 class hours
3-1, 3-2, 3-3, 3-4, 3-5,	8 class hours
4-1, 4-2, 4-3,	6 class hours
5-1, 5-2,	4 class hours
6-1, 6-2, 6-3, 6-4,	8 class hours
7-1, 7-2, 7-3, 7-4, 7-5	<u>10 class hours</u>
Total Number of hours:	48 hours (there are 56 in the semester)

Math 180 - Course Learning Outcomes (CLO)

After taking this course the student should be able to:

	Contributes to Departmental Learning Outcome(s):
1. apply a number of different strategies (Including visual and numerical) to solve a variety of problems, and explore patterns and sequences.	a, b, c
2. use set theoretic concepts to reason and to describe relationships among various categories of objects and numbers, and use set operations and understand their properties.	a, c, e1
3. solve problems using the concept of ordered pairs.	a, c
4. develop a fluency with, and an appreciation of, our whole number numeration system and operations through a study of historical numeration systems and bases other than ten.	a
5. use simple number-theoretic concepts (e.g., primes, divisibility) to solve problems to deepen the understanding of fraction and decimal operations.	a, e1
6. apply the concepts of least common multiple and greatest common divisor of two integers to operations on fractions.	a, e1
7. model and solve real world problems involving fractions and decimals using set and number theoretic concepts.	a, c, d
8. demonstrate a knowledge of the concept of irrational numbers and their approximations using both algebra and a scientific calculator.	a, c, d, e1
9. estimate results of calculations given the numbers or given only partial information about the numbers.	a, d
10. understand rational numbers as decimals and percents, solve problems with percents.	a, c, d
11. explain orally and in written form the meaning of mathematical terms, operations and theorems, as well as solutions to problems.	a, e1, e2

Note: use of technology is limited to the use of a scientific calculator

DEPARTMENTAL LEARNING OUTCOMES

The mathematics department, in its varied courses, aims to teach students to

- perform numeric and symbolic computations*
- construct and apply symbolic and graphical representations of functions*
- model real-life problems mathematically*
- use technology appropriately to analyze mathematical problems*
- state (e1) and apply (e2) mathematical definitions and theorems*
- prove fundamental theorems*
- construct and present (generally in writing, but, occasionally, orally) a rigorous mathematical argument.*