

LABETTE COMMUNITY COLLEGE BRIEF SYLLABUS

SPECIAL NOTE:

This brief syllabus is not intended to be a legal contract. A full syllabus will be distributed to students at the first class session.

TEXT AND SUPPLEMENTARY MATERIALS USED IN THE COURSE (if any):

Please check with the LCC bookstore <http://www.labette.edu/bookstore> for the required texts for this class.

<u>COURSE NUMBER:</u>	MATH 111
<u>COURSE TITLE:</u>	MATHEMATICS FOR EDUCATION
<u>SEMESTER CREDIT HOUR:</u>	3
<u>DEPARTMENT:</u>	Mathematics
<u>DIVISION:</u>	General Education
<u>PREREQUISITE:</u>	Placement Test Recommendation or C or better in MATH 100, Intermediate Algebra

COURSE DESCRIPTION:

This course is designed to provide a foundation of theory for many of the concepts found in the current elementary and middle school mathematics classroom. This course will examine topics related to the Real Number system, such as set theory, logic, probability theory, and statistics, all from a problem solving approach. The use of technology (e.g. calculator, the Internet etc.) as tools for problem solving and research will be an integral part of the course.

COURSE OUTCOMES AND COMPETENCIES:

Students who successfully complete this class will be able to:

1. Identify the basic steps, and be able to apply them, of problem-solving

- Learn the four-step process devised by George Polya.
- Identify inductive and deductive reasoning and apply these processes in solving problems.
- Understand and apply the basic concepts of logic to solve problems.

2. Identify and create sequences (e.g. arithmetic, geometric, figurate, Fibonacci, etc.)

- Utilize sequences and series in problem-solving situations.

3. Understand and be able to apply basic set theory.

- Utilize operations of whole numbers to solve problems.
- Apply Venn Diagrams to solve problems.

4. Understand the concepts of basic probability.

- Apply basic probability counting strategies including multi-step experiments and odds.
- Recognize and apply counting strategies (e.g. permutations and combinations) associated with probability simulations.

5. Understand the basic principles of descriptive statistics.

- Draw graphs such as box and whisker, histogram, circle graph, and frequency curve to represent a set of data.
- Identify the uses and abuses of statistics in everyday life.
- Apply the tools and techniques of measurement for the organization and analysis of data.

6. Define and recognize relations and functions.

- Use common tests such as arrow, diagram, and the vertical line test to define functions.
- Interpret functions in both tabular and equation form.

7. Discuss various aspects of mathematical education.

- Have solid knowledge of historical and cross-cultural contributions to the study of mathematics.
- Be able to identify key points of mathematics education reform.
- Discuss historical numeration systems.