

## CUMBERLAND COUNTY COLLEGE

### **Course: MA 109 Principles of Mathematics**

**Credits:** 3

### **Prerequisites**

MA091 or placement by Accuplacer or SAT score.

### **Description**

A problem-solving approach will be used to explore set theory, logic, probability, statistics, mathematical systems, consumer math, and geometric concepts. This course is designed for the non-math/science major.

### **Learning Outcomes**

At the completion of this course, students should be able to:

- Communicate accurate mathematical terminology and notation to explain strategies to solve problems and interpret solutions.
- Use technology correctly to solve mathematical problems.
- Utilize various reasoning, problem-solving, and critical thinking techniques to solve applications, such as financial management, consumer math, and exponential growth.
- Demonstrate mathematical knowledge of fundamental concepts and theories selected from logic, set theory, mathematical systems, geometry, and probability and statistics.

### **Related General Education Outcomes:**

- Students will translate quantifiable problems into mathematical terms and solve these problems using mathematical or statistical operations.
- Students will construct graphs and charts, interpret them, and draw appropriate conclusions.

### **Topical Outline**

- Critical Thinking Skills
  - Development of reasoning, estimation and problem-solving strategies
- Sets
  - Basic concepts and operations with sets, Venn diagrams and the use of them to solve survey problems
- Logic
  - Statements and symbols used in the study of logic, truth tables and their use to analyze arguments
- Geometry
  - Included are the basics of plane geometry
- Mathematical Systems
  - Clock arithmetic, non-traditional systems and modular systems
- Consumer Math

- Percent, exponential growth, and applications from financial management
- Probability
  - Probability and odds, mathematical expectation, relationship of two events and applications of the above
- Statistics
  - Introduction to statistics, with such topics as basic definitions, graphs, measures of central tendency, measures of dispersion, and percentiles

**Required Texts and Other Materials:**

A Survey of Mathematics with Applications with Integrated Review plus MyMathLab Student Access by Angel, Abbott & Runde 10<sup>th</sup> Edition: Pearson

Calculator

TI-30XS MultiView

**Student Assessment:**

Assessment may be accomplished through projects, portfolios, online assignments, exams, presentations and/or papers.

**Academic Integrity**

Plagiarism is cheating. Plagiarism is presenting in written work, in public speaking, and in oral reports the ideas or exact words of someone else without proper documentation. Whether the act of plagiarism is deliberate or accidental [ignorance of the proper rules for handling material is no excuse], plagiarism is, indeed, a “criminal” offense. As such, a plagiarized paper or report automatically receives a grade of **ZERO** and the student may receive a grade of **F** for the semester at the discretion of the instructor.

**Available Resources**

If you are having difficulty with work in this class, tutoring is available through the Success Center. If you think that you might have a learning disability, contact Project Assist at 856.691.8600, x1282 for information on assistance that can be provided to eligible students.

**(List availability of open labs and/or writing center)**

**Before Withdrawing From This Course**

If a student experiences adverse circumstances while enrolled in this course and considers withdrawing, s/he should see an advisor (division or advisement center) BEFORE withdrawing from the class. A withdrawal may cause harmful repercussions to completion rate standards and overall GPA which can limit or eliminate future financial aid in addition to causing academic suspension.