



## MTH 125: Modern College Mathematics

This course gives the student a better appreciation and understanding of mathematics with a minimum of algebraic manipulation. Topics may be selected from the following: sets, logic, inductive reasoning, elementary number theory, consumer mathematics, probability, statistics, and number systems. Prerequisite: Introductory Algebra competency. Three lecture hours per week. Gen. Ed. Competencies Met: Quantitative and Symbolic Reasoning. 3 credits Fall, Spring, Summer

### Course Student Learning Outcomes

1. Use inductive and deductive reasoning to solve several types of problems.
2. Use the properties and tools of sets to solve applications and determine if an infinite set is countable.
3. Perform arithmetic operations in additive, multiplicative, ciphered, and positional-valued number systems and in other bases, and discuss early computational methods and tools.
4. Use the properties of the real number system to solve applications; recognize if a series is arithmetic or geometric, determine the  $n$ th term, and find the sum of the first  $n$  numbers and use to solve applications and determine the golden ration of Fibonacci sequences in applications.
5. Determine if a finite mathematical system is an algebraic group and/or a commutative group and explain their conclusion; perform group operations and modular arithmetic.
6. Use the formulas and concepts of simple and compound interest, installment purchases, APR, mortgages, annuities, sinking funds, and retirement investments to solve applications.
7. Solve applications with probability, odds, expected value, counting, tree diagrams and conditional probability.
8. Determine measures of center and dispersion of data and create frequency distributions and graphs; determine the linear correlation coefficient and line of best fit and use in applications.

**Credits:** 3

**Co-Requisites:**

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**Program:** Mathematics