

**Course Objectives/Course Outline**  
**Spokane Community College**

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**Course Title:** Introduction to Finite Mathematics

**Prefix and Course Number:** MATH 201

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**Course Learning Outcomes:**

**By the end of this course, a student should be able to:**

- Communicate mathematical ideas in both everyday and mathematical language using appropriate vocabulary and notation.
- Demonstrate the understanding, creation, and interpretation of linear, quadratic, polynomial, exponential and logarithmic models.
- Use all types of these models for problem solving applications.
- Demonstrate an understanding of systems of linear equations and inequalities and use this understanding in problem solving including Linear Programming.
- Demonstrate an understanding of basic Matrix Operations and their applications.
- Use the formulas for Finance to compute interest, future value, present value, annuities, and loans.
- Demonstrate an understanding of set theory, counting theory, and probability and use these concepts for problem solving applications.

**Course Outline:**

- I. Linear and Polynomial Models
  - A. Linear functions
  - B. Slope and equations of lines
  - C. Linear mathematical models
  - D. Quadratic models
  - E. Polynomial models
- II. Linear Systems
  - A. Elimination and substitution method
  - B. Matrix solutions
    - i. Gaussian method
    - ii. Inverse matrix method
  - C. Graphical solution of systems of inequalities
  - D. Linear programming - graphical solution
- III. Matrix Theory
  - A. Basic operations
  - B. Inverse
  - C. Applications
- IV. Math of Finance
  - A. Simple and compound interest
  - B. Future and present value
  - C. Annuities/Loans
- V. Sets and Functions
  - A. Sets
  - B. Set operations
  - C. Surveys
  - D. Counting/Cardinality
    - i. Permutations
    - ii. Combinations

- VI. Probability
  - A. Fundamentals of probability
    - i. Sample space and uniform sample space
    - ii. Compliments, unions and intersection
    - iii. Independent events
  - B. Conditional probability
  - C. Baye's formula
  - D. Expected value
- VII. Exponential and Logarithmic Functions
  - A. Exponential functions
  - B. Logarithmic functions
  - C. Applications involving exponents and logs