

MATH 132 – Finite Math (3 Credits)

DESCRIPTION:

Topics include symbolic logic, set theory, and probability theory applied to the analysis of business and social science problems.

Prerequisite: MATH 124 or MATH 126 with a Grade of C or Better; or a Satisfactory ACT/SAT/Placement Test Score.

OUTCOMES:

- a. Solve systems of equations.
- b. Perform arithmetic of matrices.
- c. Solve systems of equations using Gauss-Jordan elimination method.
- d. Carry out linear programming geometrically.
- e. Perform the simplex algorithm in LP.
- f. Construct Venn diagrams.
- g. Investigate fundamental counting principles, permutations and combinations.
- h. Solve elementary probability problems.
- i. Perform calculations using Bayes rule and Markov chains.
- j. Explore elementary statistics to include normal and binomial distribution.
- k. Investigate the mathematics of finance.

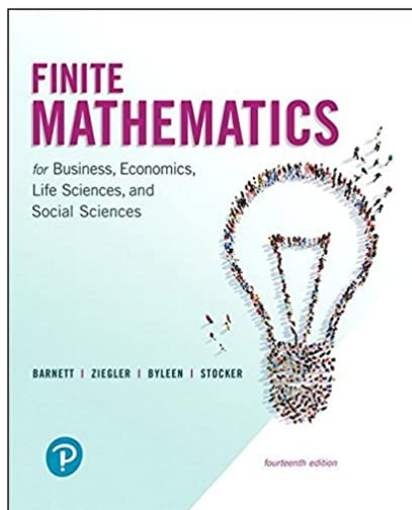
TEXT:

Title: *Finite Mathematics for Business, Economics, Life Sciences, and Social Sciences; 14th Edition;

Authors: Barnett, Ziegler, Byleen;

Publisher: Pearson;

ISBN-13: 978-0321945525



*Note: Full-time instructors have the right to use no text or a different text.

OUTLINE:

- **Review (Limit to One Day):** (Barnett; Chapter 1)
- **Finance:** Simple Interest (Barnett; Section 3.1)
- **Matrices:** Linear Systems, Augmented Matrices, Gauss-Jordan Elimination, Basic Operations, Inverse (Barnett; Sections 4.1-4.5)
- **Linear Programming:** Systems of Linear Inequalities, Graphical Solutions, Feasible Regions, Simplex Method (Barnett; Chapter 5, Sections 6.1-6.2)
- **Logic, Sets, and Counting:** Logic, Sets, Counting, Permutations, Combinations (Barnett; Chapter 7)
- **Probability:** Sample Spaces, Events, Simple Probability, Unions, Intersections, Complements, Odds, Conditional Probability, Independence, Bayes' Formula, Randomness, Distributions, Expected Value, Graphing Data, Central Tendency, Dispersion, Bernoulli Trials, Binomial Distributions, Normal Distributions (Barnett; Chapters 8 and 11)
- **Markov Chains:** (Barnett; Sections 9.1-9.2)

EVALUATION:

Grades may be determined by student performance in one or more of the following areas: in-class tests, take-home tests, homework assignments, quizzes, special projects, papers, attendance, and class participation. Degree of importance and types of assessment used will depend on the instructor.

This course satisfies the math requirement in the General Education Core component for selected degree and certificate programs at CSN.