**Math 1324 - Mathematics for Business and Social Sciences**

**Finite Mathematics: for Business Economics, Life Sciences and Social Sciences.**



Barnett, Ziegler &Byleen, 13th Ed., Prentice Hall.

 The eBook is available online on the MyMathLab website.

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**Catalog Description:**
Applications of common algebraic functions, including polynomial, exponential, logarithmic, and rational, to problems in business, economics, and the social sciences are addressed. The applications include mathematics of finance, including simple and compound interest and annuities; systems of linear equations; matrices; linear programming; and probability, including expected value.

**Course Learning Outcomes:**

The student will:

* Apply elementary functions, including linear, quadratic, polynomial, rational, logarithmic, and exponential functions to solving real-world problems.
* Solve mathematics of finance problems, including the computation of interest, annuities, and amortization of loans.
* Apply basic matrix operations, including linear programming methods, to solve application problems.
* Demonstrate fundamental probability techniques and application of those techniques, including expected value, to solve problems.
* Apply matrix skills and probability analyses to model applications to solve real-world problems.

**Book Sections:**

**Chapter 2**

2.1 Functions

2.2 Elementary Functions: Graphs and Transformations

2.3 Quadratic Functions

2.4 Polynomial and Rational Functions

2.5 Exponential Functions

2.6 Logarithmic Functions

**Chapter 3**

3.1 Simple Interest

3.2 Compound and Continuous Compound Interest

3.3 Future Value of an Annuity; Sinking Funds

3.4 Present Value of an Annuity; Amortization

**Chapter 4**

4.1 Review: Systems of Linear Equations in Two Variables (optional)

4.2 Systems of Linear Equations and Augmented Matrices

4.3 Gauss-Jordan Elimination

4.4 Matrices: Basic Operations

**Chapter 5**

5.1 Inequalities in Two Variables

5.2 Systems of Linear Inequalities in Two Variables

5.3 Linear Programming in Two Dimensions: A Geometric Approach

**Chapter 6 (Optional)**

6.1 A Geometric Introduction to the Simplex Method

6.2 The Simplex Method

6.3 The Dual Problem

**Chapter 7**

7.2 Sets

7.3 Basic Counting Principles

7.4 Permutations and Combinations

**Chapter 8**

8.1 Samples Spaces, Events, and Probability

8.2 Union, Intersection, and Complement of Events: Odds

8.3 Conditional Probability, Intersection, and Independence

8.4 Bayes’ Formula

8.5 Random Variable, Probability Distribution, and Expected Value

**Chapter 11 (Optional; Strongly recommended)**

11.1 Graphing Data, 11.2 Measures of Central Tendency, 11.3 Measures of Dispersion