Berresford, FINITE, TOC

Equality of Matrices. Transpose of a Matrix. Identity Matrix. Scalar Multiplication. Matrix Addition and Subtraction. Matrix Multiplication as Evaluation. Identity Matrices. Matrix Multiplication with Systems of Equations. Matrix Multiplication and Row Operations.

3.5 Inverse Matrices and Systems of Linear Equations.

Inverse Matrices. How to Find Inverse Matrices. Solving AX = B Using A-1.

3.6 Introduction to Modeling: Leontief Models.

4. LINEAR PROGRAMMING.

4.1 Linear Inequalities.

Inequalities in Two Variables. Vertices of Feasible Regions. Bounded and Unbounded Regions. Applications.

4.2 Two-Variable Linear Programming Problems.

Linear Programming Problems. Fundamental Theorem of Linear Programming. Extensions to Larger Problems.

4.3 The Simplex Method for Standard Maximum Problems.

Standard Maximum Problems. Matrix Form of a Standard Maximum Problem. The Initial Simplex Tableau. Basic and Nonbasic Variables. The Pivot Element. The Pivot Operation. The Simplex Method.

4.4 Standard Minimum Problems and Duality.

Standard Minimum Problems. The Dual of a Standard Minimum Problem. Matrix Form. Mixed Constraints: A Transportation Problem.

5. PROBABILITY.

5.1 Sets, Counting, and Venn Diagrams.

Sets and Set Operations. Addition Principle for Counting. The Multiplication Principle for Counting. The Number of Subsets of a Set.

5.2 Permutations and Combinations.

Factorials. Permutations. Combinations.

5.3 Probability Spaces.

Random Experiments and Sample Spaces. Events. Probabilities of Possible Outcomes. Probabilities of Events. Probability That an Event Does Not Occur. Probability Space. Addition Rule for Probability.

5.4 Conditional Probability and Independence.

Conditional Probability. The Product Rule for Probability. Independent Events.

5.5 Bayes' Formula.

Bayes' Formula. 5.6 Random Variables and Distributions. Random Variables. Expected Value. Binomial Distribution.

6. STATISTICS.

6.1 Random Samples and Data Organization.

Random Samples. Bar Chart. Histogram.

6.2 Measures of Central Tendency.

Mode. Median. Mean. Mean, Median, and Mode.

6.3 Measures of Variation.

Range. Box-and-Whisker Plot. Interpreting Box-and-Whisker Plots. Sample Standard Deviation.

6.4 Normal Distributions and Binomial Approximation.

Discrete and Continuous Random Variables. Normal Distribution. z-Scores.The Normal and Binomial