Hunter College of The City University of New York

MATH 100 Basic Structures of Mathematics 3 hrs, 3 cr

Textbook: *Finite Mathematics and its Applications* (third custom edition for Hunter College) by Goldstein, Schneider, and Siegel, Pearson Custom Publishing

Chapter 5 Sets and Counting
5.1 Sets
5.2 A Fundamental Principle of Counting
5.3 Venn Diagrams and Counting
5.4 The Multiplication Principle
5.5 Permutations and Combinations
5.6 Further Counting Problems
5.7 The Binomial Theorem

Chapter 6 Probability
6.1 Introduction
6.2 Experiments, Outcomes, and Events
6.3 Assignment of Probabilities
6.4 Calculating Probabilities of Events
6.5 Conditional Probability and Independence
6.6 Tree Diagrams
6.7 Bayes' Theorem

Chapter 7 Probability and Statistics
7.1 Visual Representations of Data
7.2 Frequency and Probability Distributions
7.3 Binomial Trials
7.4 The Mean
7.5 The Variance and Standard Deviation
7.6 The Normal Distribution
7.7 Normal Approximation to the Binomial Distribution

Instructors choose from the following:

Chapter 2 Matrices
2.1 Solving Systems of Linear Equations, I
2.2 Solving Systems of Linear Equations, II
2.3 Arithmetic Operations on Matrices
2.4 The Inverse of a Matrix
2.5 The Gauss-Jordan Method for Calculating Inverses
2.6 Input-Output Analysis

Chapter 8 Markov Processes
8.1 The Transition Matrix
8.2 Regular Stochastic Matrices
8.3 Absorbing Stochastic Matrices

Chapter 13 Graphs
13.1 Graphs as Models
13.2 Paths and Circuits
13.3 Hamiltonian Circuits and Spanning Trees
13.4 Directed Graphs
13.5 Matrices and Graphs
13.6 Trees