

**University of Houston**  
**Mathematics Department**  
**Math 1313: Finite Mathematics**

**Prerequisite:** Credit for or placement out of Math 1310. Students with prior credit for MATH 2331 or INDE 2331 will not receive credit for Math 1313. May not apply to a major or minor in Mathematics.

**Course Description:** Systems of linear equations, introduction to linear programming, mathematics of finance, topics in probability and statistics.

**Textbook:** *College Mathematics for the Managerial, Life, and Social Sciences*, 5<sup>th</sup> edition, S.T. Tan; Brooks/Cole Pub. Available online at <http://casa.uh.edu>

[Course Policies](#) (pdf)

**Course Syllabus**

**Chapter 1: Straight Line and Linear Functions**

- 1.2 Straight Lines
- 1.3 Linear Functions and Mathematical Models
- 1.4 Intersection of Straight Lines
- 1.5 The Method of Least Squares

**Chapter 2: System of Linear Equations and Matrices**

- 2.2 Solving Systems of Linear Equations I
- 2.3 Solving Systems of Linear Equations II
- 2.4 Matrices
- 2.5 Multiplication of Matrices
- 2.6 The Inverse of a Square Matrix

**Chapter 3: Linear Programming: A Geometric Approach**

- 3.1 Graphing Systems of Linear Inequalities in Two Variables
- 3.2 Linear Programming Problems
- 3.3 Graphical Solution of Linear Programming Problems

**Chapter 5: Mathematics of Finance**

- 5.1 Compound Interest
- 5.2 Annuities
- 5.3 Amortizations and Sinking Funds

## **Chapter 6: Sets and Counting**

- 6.1 Sets and Set Operations
- 6.2 The Number of Elements in a Finite Set
- 6.3 The Multiplication Principle
- 6.4 Permutations and Combinations

## **Chapter 7: Probability**

- 7.1 Experiments, Sample Spaces, and Events
- 7.2 Definition of Probability
- 7.3 Rules of Probability
- 7.4 Use of Counting Techniques in Probability
- 7.5 Conditional Probability and Independent Events
- 7.6 Bayes' Theorem

## **Chapter 8: Probability Distributions and Statistics**

- 8.1 Distributions of Random Variables
- 8.2 Expected Value
- 8.3 Variance and Standard Deviation
- 8.4 The Binomial Distribution
- 8.5 The Normal Distribution
- 8.6 Applications of the Normal Distribution