COURSE OUTLINE FOR MATH 109

Instructor: Nick Marsden, Ewing 258

Text: Finite Mathematics
Fifth Edition
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CHAPTER 1: FUNCTIONS AND LINES

#	Text	Time	
1	1.1, 1.2	1	Functions, Graphs and Lines
2	1.3	1	Mathematical Models and Applications of Linear Functions

CHAPTER 2: LINEAR SYSTEMS

#	Text	Time	
3	2.1	1.5	Systems of Two Equations
4	2.2	2.5	Systems with Three Variables; Matrix Representations of Linear Systems
5	2.3	4	Gauss-Jordan Method for General Systems
			TAKE-HOME TEST
6	2.4	.5	Matrix Operations
7	2.5	.5	Multiplication of Matrices
8	2.6	2	The Inverse of a Matrix
9	2.7	1	The Leontief Input-Output Model
		1	TEST 1, Lessons 1 to 9

CHAPTER 3: LINEAR PROGRAMMING

#	Text	Time	
10	3.1	.5	Linear Inequalities in Two Variables
11	3.2	.5	Solutions of Systems of Inequalities: A Geometric Picture
12	3.3	1	Linear Programming: A Geometric Approach

CHAPTER 4: LINEAR PROGRAMMING: THE SIMPLEX METHOD

#	Text	Time	
13	4.1	1	Setting Up the Simplex Method
14	4.2	2	The Simplex Method
15	4.4	1	Mixed Constraints
16	4.5	1	Multiple Solutions, Unbounded Solutions, and No Solutions

CHAPTER 6: SETS AND COUNTING

#	Text	Time	
17	6.1	.5	Sets
18	6.2	.5	Counting Elements in a Subset Using a Venn Diagram
19	6.3	2	Basic Counting Principles
			TAKE-HOME TEST
20	6.4	1	Permutations
21	6.5	1	Combinations
22	6.6	1	A Mixture of Counting Problems
		1	TEST 2, Lessons 10 to 22

CHAPTER 7 + Section 8.6: PROBABILITY

#	Text	Time	
23	7.1	1	Introduction to Probability
24	7.2	1	Equally Likely Events
25	7.3	1	Compound Events: Union, Intersection & Complement
26	7.4	2	Conditional Probability
27	7.5	1	Independent Events
28	7.6	1	Bayes' Rule
29	8.6	1	Binomial Distribution
30	7.7	2	Markov Chains
			TAKE-HOME TEST

CHAPTER 10: LOGIC

#	Text	Time	
31	10.1	1	Statements
32	10.2	1	Conditional Statements
33	10.3	1	Equivalent Statements
34	10.4	1	Valid Arguments
		1	TEST 3, Lessons 23 to 34

CHAPTER 8: STATISTICS

#	Text	Time	
35	8.1	1	Frequency Distributions
36	8.2	1	Measures of Central Tendency
37	8.3	2	Dispersion: Range, Variance & Standard Deviation
38	8.4	1	Random Variables and Probability Distributions of Discrete Random Variables
39	8.5	1	Expected Value
40	8.7	1	Normal Distribution
41	8.7	1	Using the Normal Distribution to Approximate the Binomial Distribution
			TAKE-HOME TEST

CHAPTER 5: MATHEMATICS OF FINANCE

#	Text	Time	
42	5.2	1	Compound Interest
43	5.3, 5.4	2	Annuities
		1	TEST 4, Lessons 35 to 43

Review: 3 hours

Final exam, Lessons 1 to 43