COURSE OUTLINE FOR MATH 126

Instructor: Nick Marsden, Ewing 258

Text: Discrete Mathematics and its Applications
     Fifth Edition
     Author - Kenneth H. Rosen

A. LOGIC AND PROOF

#	Text	Time	
1	1.1	2	Logic
2	1.2	2.5	Propositional Equivalences
3	1.3	1.5	Predicates and Quantifiers
4	1.4	1	Nested Quantifiers
		1	TEST 1, Lessons 1 to 4

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5	Notes	2	Valid Arguments
6	1.5	3	Methods of Proving Theorems

B. SET THEORY

#	Text	Time	
7	1.6	1	Sets
8	1.7	3	Set Operations
		1	TEST 2, Lessons 5 to 8

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C. THE INTEGERS;ALGORITHMS;COMPUTATIONAL COMPLEXITY

#	Text	Time	
9	2.4	2	The Integers and Division
10	2.5	2.5	Integers and Algorithms
11	2.2,2.3	1.5	Computational Complexity

D. MATHEMATICAL INDUCTION; RECURSION

#	Text	Time	
12	3.3	2	Mathematical Induction
13	3.4	1	Recursive Definitions
		1	TEST 3, Lessons 9 to 13

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D. COUNTING

#	Text	Time	
14	4.1	2	The Basics of Counting
15	4.3	2	Permutations and Combinations
16	4.4	1	Binomial Coefficients
17	4.5	2	Generalized Permutations and Combinations
18	5.1	1	An Introduction to Discrete Probability
		1	TEST 4, Lessons 14 to 18

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E. ADVANCE COUNTING TECHNIQUES

#	Text	Time	
19	6.1	1	Recurrence Relations
20	6.2	1.5	Solving Linear Homogeneous Recurrence Relations
21	6.2	1.5	Solving Linear Non-Homogeneous Recurrence Relations

F. GRAPHS AND TREES

#	Text	Time	
22	8.1	.5	Introduction to Graphs
23	8.2	1	Graph Terminology
24	8.3	.5	Representing Graphs
25	8.4	1	Connectivity
26	8.5	.5	Euler Paths
27	9.1	.5	Introduction to Trees
		1	TEST 5, Lessons 19 to 27

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Review: 2 hours

Final exam, Lessons 1 to 27