

CPS 102: Discrete Mathematics for Computer Science

Department of Computer Science, Duke University

Spring 2011

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Basic Information

LECTURES: TuTh 2:50PM – 4:05PM, Languages 109

RECITATION: F 2:50PM – 4:05PM, Languages 109

Textbook

- Discrete Mathematics and Its Applications, 6th Edition, by Kenneth H. Rosen

Grading

Homework	30%	
Midterm Exam 1	20%	Friday, 02/18, 2:50PM – 4:05PM
Midterm Exam 2	20%	Friday, 04/01, 2:50PM – 4:05PM
Final Exam	30%	Monday, 05/02, 7:00PM – 10:00PM

A-: 90% – 91%	A: 92% – 100%		
B-: 80% – 81%	B: 82% – 87%:	B+: 88%–89%	
C-: 70% – 71%	C: 72% – 77%:	C+: 78%–79%	
D-: 60% – 61%	D: 62% – 67%:	D+: 68%–69%	
F: 0% – 59%			

Late Policy

Please turn in your homework at the beginning of the class on the day it is due. Late homework is not accepted. However, one of your lowest homework grade will be dropped.

Collaboration Policy

Homework assignments are done individually, under Duke's Community Standard. No collaboration of any kind is allowed on standard homework assignments.

Components of Study

- Fundamentals
 - Logic, quantifiers
 - Sets and functions
 - Mathematical induction
 - Algorithms and complexities
- Number Theory
 - Modular arithmetic
 - Euclid's algorithm
 - RSA cryptosystem
- Counting
 - Permutations and combinations, binomial coefficients
 - Recurrence relations, and solving techniques
- Discrete Probability
 - Probability distribution, random variable
 - Bayes' Theorem
 - Expected value and variance
- Graph Theory
 - Basic concepts
 - Representation of graph, isomorphism
 - Connectivity
 - Euler and Hamilton paths, shortest path problems
 - Application of tree, tree traversal