Discrete Mathematics Spring 2008

Syllabus

Instructor:

Bow-Yaw Wang
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Lectures:

Tuesday 9:10 - 12:10, Room 204, Common Building

Grading:

Midterm 40%, Final 40%, Homework 20%

Textbook:

Kenneth H. Rosen. Discrete Mathematics and its Applications, 6th Edition.

Web Site:

http://www.im.ntu.edu.tw/~dm/2008/index.html

Schedule/Outline:

- **Introduction and Foundations.** 2/19
  logic and proofs
- **Basic Structures.** 2/26
  sets, functions, decidability, countability
- **Fundamentals.** 3/4, 3/11, 3/18
  algorithms, growth of functions, complexity of algorithms, congruences, RSA cryptosystem, matrices
- **Induction and Recursion.** 3/25
  induction, recursion, program correctness
- **Discrete Probability I.** 4/8
  probabilistic algorithm, expectation
- **Midterm.** 4/15
- **Discrete Probability II.** 4/22
  variance, Chebyshev's inequality
- **Advanced Counting Techniques.** 4/29, 5/6, 5/13
  recurrence relations and their solutions, generating functions
- **Graphs.** 5/20, 5/27
  terminologies, representations, Euler and Hamilton paths, reduction from satisfiability
- **Trees.** 6/3, 6/10
  binary tree, traversal, spanning tree
- **Final.** 6/17