

CS201

MATHEMATICS FOR COMPUTER SCIENCE I

FIRST COURSE HANDOUT

INSTRUCTOR

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CONTENTS

WEEK 1-2: Sets, Orders, and Proofs

- Sets, relations, functions, partial orders, equivalence classes, proof techniques

WEEK 3-5: Counting

- Permutations, combinations, binomial coefficients, partitions, generating functions, inclusion-exclusion, Ramsey theory

WEEK 6-7: Graph Theory

- Degree, paths, cycles, trees, planar graphs

WEEK 8-14: Algebra

- Groups, rings, fields, finite fields

REFERENCE BOOKS

- Discrete mathematics and its applications, by Kenneth Rosen.
- Discrete mathematics, by Norman Biggs.
- Introduction to combinatorial mathematics, by Chung Liu.
- Elementary number theory, by David Burton.

GRADING

The course will have

- Midsem, weightage 25%
- Endsem, weightage 50%
- Assignments, weightage 25%
- 80+% marks \Rightarrow A grade
- 20+% marks \Rightarrow D or higher grade

COPYING POLICY

- Anyone caught copying in an assignment will get zero in that assignment.
- Anyone caught copying in exams will get zero in that exam.

SCHEDULE

- Classes on Mon-Wed-Fri 12-13hrs in RM101
- Midsem during Sep 18-23, 2023
- Endsem during Nov 17-26, 2023

TAs

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