

CS 240 : Introduction to Discrete Mathematics

Course Logistics

Lectures

- **Lecture 1 (Beck Hasti):** MWF: 9:55 am - 10:45 am, B130 Van Vleck
- **Lecture 2 (Beck Hasti):** MWF: 2:25 pm - 3:15 pm, 1800 Engineering Hall
- **Lecture 3 (Scott Swanson):** MWF: 11:00 am - 11:50 am, 1310 Sterling Hall

URLs

- **Canvas:** canvas.wisc.edu
- **Piazza:** piazza.com/wisc/fall2025/compsci240
- **DvM readings:** pages.cs.wisc.edu/~cs240-1/readings
- **zyBooks:** learn.zybooks.com

Assessment

- **62% Exams :**
 - Exam 1 (20%): Monday, October 13th, 7:30 - 9:30 pm
 - Exam 2 (20%): Monday, November 10th, 7:30 - 9:30 pm
 - Exam 3 (22%): Thursday, December 18th, 10:05 am - 12:05 pm
- **30% Assignments :**
 - 14 assignments
 - written work, on-line quizzes, zyBooks Challenge Activities
- **8% Participation :**
 - zyBook Participation Activities (3%)
 - Additional Participation Activities (2%)
 - Discussion Participation (3%)

Course Overview

discrete mathematics = mathematical study of discrete structures

discrete structures

- can be enumerated
- in Computer Science:

Course goals

- become familiar with discrete structures (& related notions)
- develop your skills to reason rigorously

Course content can be thought of as consisting of 4 parts:

- Part 1: Logic & Proofs
 - Part 2: Inductions & Recursion
 - Part 3: Graphs & Relations
 - Part 4: Intro to Combinatorics
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Course Overview

Part 1: Logic & Proofs

- propositional & predicate logic
- set theory
- proof techniques

Part 2: Inductions & Recursion

- induction $\rightarrow$ show some property holds for all items in a discrete structure
- recursion – recursive programs & recursive definitions
- program analysis

Part 3: Graphs & Relations

- graphs & trees
- functions & relations
- graph theory
- finite state automata

Part 4: Intro to Combinatorics

- counting
- permutations
- combinations