

Introduction To CMSC 250H

H is for **Honors**.

How does this differ from ordinary CMSC 250?

- ① Smaller class.
- ② Recitation will teach you a new topic
- ③ Every X lectures we will have an enrichment lecture

Administration

- Class webpage has Syllabus- Policy and Content
- Quiz (every Monday)
- Homework (due Tue-or-Wed -next slide)
- Exams:
 - MIDTERM 1:** Wed Feb 25, 6:00PM-8:00PM
 - MIDTERM 2:** Wed Apr 8, 6:00PM-8:00PM
 - FINAL:** Thursday May 19, 1:30PM-3:30PM
- Class attendance: Why go to class?
- Academic integrity: Why be honest and true?
- Textbook: Early edition of Epp's book **CHEAP**.

HW Policy

- 1 **HW DUE** on Tuesday in class.
CAN hand it in Wed in recit with no-penalty.
I will assume your cat died!
- 2 If often late may affect borderline grades.
- 3 If often late then I will not write you a letter.
- 4 If start late then hard to get questions answered.
- 5 If start late and **your cat really does die** then you may not get it in even on Wed!!!!
- 6 I am **NOT** going to formally define **often** or **late**.

Topics in Lecture

- Prop Logic, Circuits, Pred Logic.
- Techniques of Proof
- Number Theory and Cryptography
- Mathematical Induction
- Counting (You will have already seen some in recitation)
- Functions, Relations, and Graphs.

What is Discrete Mathematics?

Definition: *Discrete mathematics* is the branch of mathematics dealing with objects that can only assume distinct, separated values. [Wolfram Mathworld]

In contrast: *Continuous mathematics*

Discrete vs. Continuous Math: Examples

Discrete Mathematics

- Number theory (integers)
- Logic
- Combinatorics
- Graph theory
- Theory of computation

Continuous mathematics

- Calculus (real numbers)
- Topology

Some Types of Knowledge

- Directly applied
Circuits to do addition
- Good to know
Cannot store the digits of $\sqrt{2}$ on a computer
- Interesting
The number of primes is infinite

Why learn this material?

- Mathematical foundations of computer science
- Useful for later courses
- Useful for computer programming
- Useful to get a job
- Useful on the job