Syllabus for CPSC 202

Summer 2023

Instructor: Cody Murphey

Description

Introduction to formal methods for reasoning and to mathematical techniques basic to computer science. Topics include propositional logic, discrete mathematics, and linear algebra. Emphasis on applications to computer science: recurrences, sorting, graph traversal, Gaussian elimination.

Meeting times

Lectures Mondays, Wednesdays, and Fridays - Time & Location TBD

Homework assignments

Upload your solutions to Gradescope via the link provided in the assignments tab. After each assignment there is a list of the chapters in the textbook it corresponds to, and which sections we’ll skip.

Assignment 1, 2.1-2.5 (skip 2.2.4, 2.3.5, 2.4.2)
  ● Propositional Logic, Truth Tables, Predicate Logic, Methods of Proof
Assignment 2, 3.1-3.7, 5.1-5.5 (skip 3.4, 3.6)
  ● Set Properties, Injective and Surjective Functions, Proofs by Induction
Assignment 3, 8.1-8.3
  ● Divisibility, Euclidean Algorithm, GCD and Prime Divisors
Assignment 4, 9.1-9.4, 10.1-10.10 (skip 10.6)
  ● Reflexive, Symmetric, and Transitive Relations; Graph Properties
Assignment 5, 11.1-11.2
  ● Combinatorics, Probability

Required Course Materials

There is not a required textbook. We will make use of Aspenes’ canonical course notes for additional readings and reference.
Grading

The course requirements consist of class attendance, ten or so approximately weekly problem sets, one midterm, and a final exam. Plan on spending between 6-8 hours per week on the course outside of class. The problem sets are an integral part of the course.

The final grade in the course is determined by:

14% Attendance and Participation
16% Quizzes
32% Problem sets
38% Final exam

Homework will be due Sundays at 11:59pm ET via Gradescope upload. In general, late assignments will not be accepted without a Dean's excuse.

At the end of the course, one day of attendance, one problem set, and one quiz will be dropped from your grade.

If you have concerns about homework grading, you may ask the instructor to regrade your assignment. In this case, the entire assignment will be re-graded, and your score could potentially change in either direction.

Late Submission Policy

To allow for the exigencies of computer failures and personal crises, each student has 2 discretionary late days for homework assignments. It is acceptable to use both late days for a single assignment, turning it in up to 2 days late. These late days can be used for any reason and there is no need to get a Dean's excuse or special permission to use them. If you do have a Dean's excuse, it will be honored and we still encourage you to talk to your Dean if you have a serious incapacitating issue, but we hope that the flexibility of this policy will reduce the overall need for Dean's excuses.

If both late days have been used, assignments may still be submitted up to 2 days late, but they will incur a 10% late penalty per day (5 minutes after the deadline is still considered 1 day late).

Academic Honesty Policy

The homework assignments in this course are intended to give you practice at working through problems independently. Therefore, unless otherwise specified, the homework assignments are your individual responsibility and are not group assignments. Plagiarism is a violation of University rules and will not be tolerated. You must neither copy work from others (at Yale or
elsewhere) nor allow your own work to be copied. In addition to grade penalties, additional consequences for breaking this policy may be imposed by the Yale College Executive Committee. Note that Gradescope will automatically check your submissions for code similarity with your peers and past submissions to similar assignments.

You may:

- Ask others or search online for help with high-level course concepts that are not specific to the assignment.
- Ask clarifying questions about the requirements of an assignment to TAs or on the course discussion board.
- Discuss more specific issues on an assignment with a TA or instructor.

You may not:

- Discuss your individual solution with your peers.
- Receive a printed or electronic copy of anyone else’s work for the course from this term or any other term.
- Give anyone else a printed or electronic copy of your work for the course for this term or any other term. This includes posting your work publicly on sites such as Github.
- Seek out solutions to similar assignments online.

If you have any questions about this policy or are unsure if you may have crossed a line, discuss it with the instructor as soon as possible.

**Course Communication**

Course announcements and assignments will be handled through this Canvas site. You are responsible for checking Canvas and staying up to date. Additionally we will use Ed Discussions (in place of Piazza) for discussion and Q&A. Access Ed Discussions using the link in the sidebar on the left.

Rather than using email for questions, you should use this space to discuss the concepts with classmates and ask questions of the instructors. You may not post answers or code for any assignment, or exam, in whole or in part.