

# CSE 203A Syllabus

Spring 2026

**Lecture:** Monday, Wednesday, Friday 12:00-12:50pm WLH 2204

**Course Webpage:** <http://cseweb.ucsd.edu/~dakane/CSE203A/>

**Professor:** Daniel Kane

Email: dakane "at" ucsd.edu

Office Hours: Wednesday 10:30-11:30 and Friday 1:00-2:00 in CSE 4212 or by appointment.

**TA:** Anthony Ostuni

Office Hours: Tuesday 11:30-12:30 and Thursday 1:45-2:45 outside of CSE 4232.

**Course Description:** CSE 203A covers topics on modern advances in the design and analysis of algorithms. This quarter, we will be focusing on randomized algorithms. Topics will include: hashing and fingerprinting algorithms, random walks, concentration bounds, sampling and counting algorithms, and streaming algorithms.

**Prerequisites:** CSE 202, basic probability theory

**Textbook:** The textbook for the course will be *Randomized Algorithms* by Rajeev Motwani and Prabhakar Raghavan.

**Exams:** There will be an in-class midterm on Friday, May 8th, and a final exam June 10th 11:30-2:30.

**Homework:** There will be four homeworks. You are encouraged to work with other students on the homework, but your writeups should be your own, and you should cite any collaborators. You should not attempt to search for homework solutions online or ask for assistance from AIs, but if in the course of studying you stumble upon something solving a homework problem, you should cite it in your solution.

**Scribe Notes:** Students will also be asked to produce scribe notes for one lecture. Please sign up for a lecture to scribe here: <https://calendar.app.google/ASXqus2fVpU2B3j18>. Scribe notes will be due no later than a week after the lecture for which they are scribing. Groups of students writing scribe notes for the same lecture may submit a single, joint set of scribe notes, though in such cases, my expectations for the quality of the results will increase with the size of the group.

**Gradescope:** All assignments will be due on gradescope. While most of you will likely be added automatically, if you are not, you can add yourself with the code KN7XW7.

**Grades:** Grades will be based on the minimum of the following two formulas:

- The average of your four homework scores.
- The average of your scribe notes, midterm and final exam scores with relative weights 1:2:3.

While I may need to curve the class some to maintain a grade distribution similar to comparable classes, the cutoff for A- will be no lower than 80% and the cutoff for B- no lower than 60%.

**Schedule:** Below is a very rough schedule for topics covered in the class. This may end up being modified depending on how the class is going.

Introduction [complexity classes, concentration bounds, minimax principle, basic algorithms]  
(Chapters 1, 2, 3, 4)  
Hashing and Fingerprinting (Chapters 7, 8)  
Random Walks, Sampling and Counting (Chapters 6, 11)  
Streaming and Dimension Reduction (Supplemental material)  
Other Topics?