CSE 203A Syllabus

Fall 2017

Lecture: Monday, Wednesday, Friday 1:00-1:50pm WLH 2205
Course Webpage: [http://cseweb.ucsd.edu/~dakane/CSE203A/](http://cseweb.ucsd.edu/~dakane/CSE203A/)

Professor: Daniel Kane
Email: dakane "at" ucsd.edu
Office Hours: Monday 3:00-4:00 in CSE 4212 or by appointment.

TA: Anant Dhayal
Office Hours: Thursday 12:00-1:00 in CSE 3217.

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.

Final Exam: There will a take home final exam worth 45% of your final grade.

Homework: There will be three homeworks each worth 15% of your final grade.

Scribe Notes: Students will also be asked to produce scribe notes for one lecture (please sign up for a lecture early on) which will be worth 10% of your final grade. Pairs of students writing scribe notes for the same lecture may submit a single, joint set of scribe notes, though in such cases, I will be expecting the resulting product to be of higher quality.

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?