

CS 70

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Discrete Math

&

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Probability Theory

Josh Hug

Warm-Up: How would you know if any of these are true?

- There are infinitely many prime numbers.
- Every even number > 2 can be written as the sum of two primes (1742) True for evens $< 4 \times 10^{18}$
- Your code never gets stuck in an infinite loop and always correctly computes a function f on every input

What is this course? (And why are we taking it?)

- Truth: How to know something. How to prove it.
- Translation: Natural language $\rightarrow$ formal language
- Under the hood: Language of the computer
- Lenses and tools: math $\rightarrow$ structure $\rightarrow$ algorithms
- Survey: library of tools / concepts / applications

Course Materials

- Lecture (No prep needed)
- Notes (Don't read beforehand. Reference material)
- HW (Important!! Graded for effort. Get feedback)
- Discussion sections (Work w/ people. Can help grade)
- Office Hours
- Quizzes (Most of grade)
- Midterm/Final (Synthesis Q's + quiz retakes)

Spec Grading

- 14 DM topics / 14 Probability topics
- Quiz every Friday section covering 2 topics
- Each quiz is Pass / No Pass
- Midterm is quiz retakes for DM + 2 synthesis Qs
- Final is quiz retakes for Prob + 3 synthesis Qs

Grading

	C- tier	B- tier	A- tier
Topics Passed	17/28	21/28	25/28
Synthesis Questions	1/5	2/5	3/5
Balance (how many topics for DM/Prob?)	>= 7 from each	>= 9 from each	>= 11 from each

A-/B-/C- → A/B/C	A+/B+/C+
2 Mastery Points OR 13/26 Engagement Points	4 Mastery Points

- 1 Mastery Point = 1 additional topic or synthesis question beyond tier requirement
- 1 Engagement Point = 1/14 HW or 1/12 non-quiz discussion

Why Spec Grading

- Legibility for me: Understand what skills & proficiencies you're gaining
- Legibility for you: Know exactly where your grade is and can go
- Hope to feel like a measure of preparedness for downstream courses, not ranking amongst peers