

Welcome to CSE 417

Algorithms and Computational Complexity

Administrivia

- **Anna Karlin**
 - CSE 594, karlin@cs
 - Office hours, Thursday 9-10am and by appt.
- **Kiana Ehsani** **Daniel Li** **Robbie Weber**



What is this course about? (1)

- **Design of algorithms**
 - Design techniques
 - Common and important types of problems
 - Analysis of algorithms: efficiency
 - Correctness proofs
- **Goal: expose you to a sampling of ideas, techniques, tools and applications.**

What is this course about? (2)

- **Complexity, NP-completeness and intractability**
 - Solving problems in principle is not enough
 - Algorithms must be *efficient*
 - Some problems have no efficient solution
 - NP-complete problems
 - Important and useful class of problems whose solutions (seemingly) cannot be found efficiently, but can be checked easily.

This quarter: an experiment!!!

- **I am flipping the classroom!!**
 - You will watch videos recorded for Coursera by Professor Tim Roughgarden linked from course web page.
- **You will need to watch the assigned videos**
 - I will give occasional quizzes to verify that you are watching them.
- **Class time**
 - We will do problems related to the material in the lecture.

This quarter: an experiment!!!

- **For this Friday**
 - Watch I. Introduction (Week 1)
 - From “Why study algorithms?”
 - To “Guiding Principles for the Design of Algorithms”
- **Notice that the slides are linked from our web page.**
- **Course web page:**
 - <http://courses.cs.washington.edu/cse417>
 - Office hours listed

Background expected

- Intro algorithms and data structures (e.g., CSE 373)
- “Mathematical maturity”

Workload

- 6-7 problem sets (45%)
 - Mostly paper and pencil, a couple involve programming
 - We will be grading a random subset of the paper and pencil questions.
- Midterm and quizzes (30%)
- Final (25%)

Other

- Overload?
 - <http://tinyurl.com/hjl3tpj>
- Questions?