Welcome to CSE 417
Algorithms and Computational Complexity

Administrivia
• Anna Karlin
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  – Office hours, Thursday 9-10am and by appt.
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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?