Overview

CS280 is an introduction to the design and analysis of algorithms. The primary goal of this course is to introduce some standard techniques for solving a wide range of algorithmic problems. Students are expected to be comfortable with discrete math (MATH 220) and data structures (CS 151). You will learn to distill a problem to its mathematical core, find one or more solutions, and prove these solutions are correct. You will also learn how to recognize and prove that certain problems are computationally intractable, and what can be done in these situations. Finally, you will further hone your ability to think algorithmically and analytically.

Topics


Textbook and Website

We are using Kleinberg and Tardos’ *Algorithm Design*, published by Addison Wesley.

The current schedule, readings, and announcements will be posted on the course website, which can be found at [www.cs.oberlin.edu/~wexler/cs280/280index.html](http://www.cs.oberlin.edu/~wexler/cs280/280index.html).

Grades

<table>
<thead>
<tr>
<th>Grade Component</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Homework Assignments (10)</td>
<td>50%</td>
</tr>
<tr>
<td>Midterms (2)</td>
<td>20%</td>
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<tr>
<td>Final Exam</td>
<td>20%</td>
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<tr>
<td>Attendance and Participation</td>
<td>10%</td>
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Homework Policy

Typically there will be one assignment each week, with part of each assignment due on Monday, and the rest on Wednesday. Assignments must be turned in at the beginning of class to be considered on-time. I expect most assignments to take between 8 and 12 hours to complete. Assignments are to be typeset with LaTeX. Hints for getting started with LaTeX and a template can be found on the course homepage.
Each problem should be printed on a separate page with your name, the assignment and problem number, and any students you collaborated with at the top (see the next section for details on group work). Print front and back. If you need multiple sheets for a problem, use a staple. Printers are fickle, so don’t try to print 10 minutes before class.

Late homeworks may be handed in within 24 hours of their deadline for half credit. After 24 hours no credit is given. The first two late assignments (up to 24 hours) incur no penalty. Let me know if you’re handing an assignment in late, and put a printed copy in my mailbox. Emailed assignments are deleted automatically.

See the handout “Notes on Homeworks” for tips and style suggestions. See the Honor Code section below for details on the group work policy.

**Honor Code**

We take the honor code very seriously, and will report any violations to the Honor Code Committee.

This is a class where working with your peers is not only allowed, it is encouraged. However, the assignments you hand in must be written up by yourself and represent your own thoughts and work. More concretely, while you may discuss ideas with your classmates, no one may leave a meeting with notes or solutions written down on paper or digitally. If you use a board, erase your work when you’re done. If you really understand the discussion, you should be able to reconstruct it on your own. You may not use the Internet or other references other than the textbook, unless told otherwise.

Groups can involve at most four students. In my experience, groups of two or three work best. All students working in a given group must be actively participating. A student who has completed a problem should not lead another student through their solution.

If you do work with a friend or friends, list their names on the top of your assignment. This is important, and I certainly think no less of you if you work with your classmates. Collaboration is not allowed on exams. Finally, you must write the honor code on every assignment and exam, along with your signature:

“I affirm that I have adhered to the Honor Code in this assignment.”

**Tutors, OWLs, and Student Office Hours**

There are tutors available, provided by Oberlin College. If you think you’d like such a tutor, contact Kay Knight in Peters 114. We’ll also have OWL workshops and student-led office hours. Details will be announced shortly.

**Student Disabilities**

If you require special accommodation (such as additional time to complete exams), please speak to us during the first week of class so that we have time to make suitable arrangements. You must be registered with the Coordinator of Services for Students with Disabilities.