Course materials will be posted on the course website:

http://www.cs.princeton.edu/~smattw/Teaching/cos521fa17.htm

Instructors

Matt Weinberg  
*CS Building 317*  
smweinberg@princeton.edu

Teaching Assistants

Divyarthi Mohan  
*CS Building 217*  
dm23@cs.princeton.edu

Lectures

<table>
<thead>
<tr>
<th>Class</th>
<th>Time</th>
<th>Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>T/Th 3:00 - 4:20pm</td>
<td>McCosh Hall 62</td>
</tr>
</tbody>
</table>

Office Hours

<table>
<thead>
<tr>
<th>Time</th>
<th>Place</th>
<th>Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday 3:00 - 4:00pm</td>
<td>CS 217</td>
<td>Divya</td>
</tr>
<tr>
<td>Tuesday 4:30 - 5:30pm</td>
<td>CS 317</td>
<td>Matt</td>
</tr>
<tr>
<td>Wednesday 5:00 - 6:00pm</td>
<td>CS 217</td>
<td>Divya</td>
</tr>
<tr>
<td>Thursday 4:30 - 5:30pm</td>
<td>CS 317</td>
<td>Matt</td>
</tr>
</tbody>
</table>

Outline

The focus of this class is on advanced algorithm design and related tools. One difference between “advanced” algorithm design and undergraduate classes is the use of advanced concepts like randomization and approximation, and the design of algorithms in “advanced” domains where the input may be erroneous, or not entirely given.

Additional Reference materials

- “Algorithmic Game Theory” by Nisan, Roughgarden, Tardos, and Vazirani;
- “Randomized Algorithms” by Motwani and Raghavan;
- “Online Computation and Online Analysis” by Borodin and El-Yaniv;
- “Probabilistic Method” by Alon and Spencer;
- “Approximation Algorithms” by Vijay Vazirani;
- “Design of Approximation Algorithms” by Williamson and Shmoys;
- “Spectral Graph Theory” by Chung;

Grading

There will be 3-5 PSets throughout the semester. In January, everyone must either complete a take-home final or do a term project (in groups of 2). Grades will be 60% PSets and 40% final (exam or project). See [http://www.cs.princeton.edu/courses/archive/fall15/cos521/projectnotes2015.pdf](http://www.cs.princeton.edu/courses/archive/fall15/cos521/projectnotes2015.pdf) for tentative project guidelines.