CS 455 Advanced Algorithm Design and Analysis
Spring 2015

Instructor: Dr. Mingxuan Sun  
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Office Hours: TR 2:00 – 5:00 pm or by appointment

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TA: Tianyang Wang  
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Course Objectives: An extensive treatment of the design, analysis and complexity of algorithms. Learn to use the language of (algorithmic) mathematics to understand the performance of algorithms.


Topics: Asymptotic analysis, Recursion tree  
Divide and conquer, Merge sort, Binary search, Quick sort  
Order statistics, Median select  
Linear time sorting  
Binary search tree  
Graph, Elementary  
Graph, Greedy algorithm, MST, Shortest path  
Dynamic programming, LCS  
P-NP

Grading/Evaluation:

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<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Homework/Labs</td>
<td>30%</td>
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<tr>
<td>Presentation</td>
<td>10%</td>
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<tr>
<td>Midterm</td>
<td>30%</td>
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<tr>
<td>Final</td>
<td>30%</td>
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Classroom Policies:

A. Attendance Policy: Students are expected to attend classes regularly. Students are responsible for all announcements made in class and/or posted to D2L.

B. Late Homework: 10% points off, if submitted within 24 hours after the due date; 25% off, if submitted 24-48 hours after the due date; no credit if submitted two days or more days after the due date unless prior arrangements are made with the instructor with acceptable reasons.

C. Exams: There will be no makeup exams. If you cannot take an exam during scheduled time, you should consult the instructor in advance.