CMPE 300 ANALYSIS OF ALGORITHMS
Fall 2011

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Text Book: Fundamentals of Sequential and Parallel Algorithms

Reference Books:
• Analysis of Algorithms: An Active Learning Approach
  Jeffrey J.McConnell, Jones and Bartlett Pub., 2001
• Algorithms Sequential & Parallel, A Unified Approach
• Algorithms and Complexity
  Herbert S.Wilf, Prentice-Hall Inc., 1986

Lecture Hours:
WWTh 675

Course Schedule:

<table>
<thead>
<tr>
<th>Part</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction, Algorithm complexity (Detailed model, simplified model, Asymptotic analysis (Best-case, Worst-case, Average complexity)</td>
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<tr>
<td>2</td>
<td>Search-sort algorithms and their analysis Techniques for computing average complexity, Adjacent-key comparison-based algorithms, Sorting algorithms, Average complexity</td>
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<tr>
<td>3</td>
<td>Introduction to parallel architectures, Parallel algorithms, Analysis of parallel algorithms, Goodness measures</td>
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<tr>
<td>4</td>
<td>Analysis Tools (Induction, Correctness Proofs, Recurrence Relation, Generating Function) Multiplication of Matrices, Introduction to Number Theory Primality Tests Introduction to Probabilistic algorithms (Monte Carlo algorithms, Las Vegas algorithms)</td>
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<tr>
<td>5</td>
<td>NP-completeness Dynamic programming, Greedy approach</td>
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Evaluation (Tentative):
Midterm1: % 20
Midterm2: % 20
Final: % 35
Projects+PopQuiz+Participation: % 35