CMPE 300 ANALYSIS OF ALGORITHMS  
Spring 2012

Instructor: Fatih Alagöz  (alagoz@boun.edu.tr)
Teaching Assistant: Barış Kurt  (baris.kurt@boun.edu.tr)

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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<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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<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