Syllabus for
swe510 Data Structures and Algorithms
(3+0+0) 3 ECTS 8
2019 Fall

Catalog Definition
Specification, usage and implementation and analysis of advanced data structures and algorithms. Hashing, heap structures, advanced sorting techniques, graphs and algorithm design techniques.

Web Site

General Information

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Haluk O. Bingol, <a href="mailto:bingol@boun.edu.tr">bingol@boun.edu.tr</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>none</td>
</tr>
<tr>
<td>Student TA</td>
<td>none</td>
</tr>
<tr>
<td>Course Schedule</td>
<td>WWW 111213 @ BM A2, BM A2, BM A2,</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>PS Schedule</td>
<td>none</td>
</tr>
</tbody>
</table>

Grading

<table>
<thead>
<tr>
<th>Contribution</th>
<th>10 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm 1</td>
<td>25 %</td>
</tr>
<tr>
<td>Midterm 2</td>
<td>30 %</td>
</tr>
<tr>
<td>Final</td>
<td>35 %</td>
</tr>
<tr>
<td>Presentations</td>
<td>as bonus</td>
</tr>
<tr>
<td>Exams</td>
<td>are on computer using teaching.codes.</td>
</tr>
</tbody>
</table>

Textbook

- Cormen, Leiserson, Rivest, Stein, Introduction to Algorithms, 3e, Addison-Wesley 2009

Reference Books

- Data structures and algorithms with object-oriented design patterns in Java; Bruno R. Preiss; *John Wiley*, 2000, [QA76.64 .P744 2000]

- Data structures and algorithm analysis in Java; Weiss, Mark Allen; *Addison-Wesley*, 1999. [QA76.73.J38 W431 1999]

- The art of computer programming, Vols: 1, 2, 3; Donald E. Knuth; *Addison-Wesley*, 1973. [QA76.6 .K64 1973]

**Weekly Program (Tentative)**

<table>
<thead>
<tr>
<th>week</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>Eclipse, Java, Arrays, Objects, Stack, Queue</td>
</tr>
<tr>
<td>3-4</td>
<td>Hashing</td>
</tr>
<tr>
<td>5-6</td>
<td>Heap</td>
</tr>
<tr>
<td>7</td>
<td>mt1</td>
</tr>
<tr>
<td>8-9</td>
<td>Sorting</td>
</tr>
<tr>
<td>10</td>
<td>mt2</td>
</tr>
<tr>
<td>11-12</td>
<td>Graphs</td>
</tr>
</tbody>
</table>