CSC/CPE 508 Software Engineering I

1. CSC/CPE 508 Software Engineering I

2. **credit units**  4  **contact hours**  4

3. **Course Coordinator**: David Janzen

4. **Textbook**:(and/or other required material)   None: students read a selection of academic articles.

5. a. **Course Description**: In-depth study of requirements engineering, software project management, formal specifications and object-oriented analysis. 4 seminars.
   
   b. **Prerequisite**: CSC/CPE 307 or CSC/CPE 308 and graduate standing, or consent of instructor.

   c. **Required/Elective/Selective Elective for CPE, CSC, EE, SE**

<table>
<thead>
<tr>
<th></th>
<th>CSC</th>
<th>CPE</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selective Elective</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

6. a. **Course Goals/Outcomes**

   The student will be able to:
   
   • Write a research paper of publishable quality.
   • Write a requirements specification for a large software project.
   • Design a software architecture for a large software project.
   • Implement a prototype for a large software project.
   • Become proficient in a particular software process model.

   b. **How Student Outcomes addressed**

   (“B” = Basic level, “I” = Intermediate level, “A” = Advanced level)

<table>
<thead>
<tr>
<th></th>
<th>3a</th>
<th>3b</th>
<th>3c</th>
<th>3d</th>
<th>3e</th>
<th>3f</th>
<th>3g</th>
<th>3h</th>
<th>3i</th>
<th>3j</th>
<th>3k</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC</td>
<td>A</td>
<td>A</td>
<td></td>
<td></td>
<td>A</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SE/CPE</td>
<td>I</td>
<td>A</td>
<td>A</td>
<td>I</td>
<td>B</td>
<td>B</td>
<td>I</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. **Major Topics Covered**: (number of lecture hours each)

   • Research papers: analysis methods, research methods, empirical studies (3)
   • Advanced requirements modeling and practices (6)
   • Prototyping methods and practices (3)
• Advanced software process modeling (6)
• Software project management (3)
• Validation and testing practices (3)
• Formal and semi-formal methods (3)
• Publishing/presenting a research paper (3)