Seminar in Software Development Tools
17-691 A4

Instructor
James A. Rozum

Teaching Assistants
None

Course Objectives
This half semester seminar will provide students an appreciation of the amount and form of automation available (commercial and internally developed) in support of the software development lifecycle. The intent is to build a student’s awareness of what is available for each of the common lifecycle phases in terms of tool support for the lifecycle process. Students will learn how choosing an appropriate tool can dramatically improve their organization’s productivity and quality, as well as gain an appreciation of how choosing the wrong tool can be disastrous to their organization. The intent of each class is to illustrate the opportunities and pitfalls for automation of the development process in a process specific area / phase. Each class will also feature a discussion on processes associated tool-based processes including cost benefit analysis, tool implementation success criteria, tool evaluations, piloting tools/ tool demos, and integrating a tool into an organization’s development process.

Organization
A typical class would include:

- Featured discussion on a tool-based processes
- Overview of the process phase / activity to be covered
- Presentation on what, and how, automation in this space can help software engineers
- A review of tools in this space
- Demo of a tool in this space
- Discussion on pros and cons of tool support in this space

Pre-requisite: Completion of at least 1 semester (36 units) of Master’s level courses.

Students will be expected to participate during in-class discussions and complete a term paper. The term paper subject is to be negotiated between the student and professor but expected to cover an area of one of the Lifecycle spaces covered in class.
## Schedule

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<tr>
<th>#</th>
<th>Date</th>
<th>Topic</th>
<th>Subtopic</th>
<th>Reading</th>
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<tbody>
<tr>
<td>01</td>
<td>W 3/17/04</td>
<td>Introduction</td>
<td>Integrating a tool into an organization’s process</td>
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<td>02</td>
<td>W 3/24/04</td>
<td>Project &amp; Lifecycle Management</td>
<td>Cost benefit analysis of using tools</td>
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<td>03</td>
<td>W 3/31/04</td>
<td>Requirements Management</td>
<td>Tool implementation success criteria</td>
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<td>04</td>
<td>W 4/7/04</td>
<td>Configuration Management</td>
<td>Making it work (how to implement successfully) / Tool evaluations and RFIs</td>
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<td>05</td>
<td>W 4/14/04</td>
<td>Design and Code Analysis</td>
<td>Tool traps and pitfalls</td>
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<td>06</td>
<td>W 4/21/04</td>
<td>Systems Modeling and/or Software Testing</td>
<td>Technology Transition Considerations</td>
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<td>07</td>
<td>W 4/28/04</td>
<td>Class Summary</td>
<td>Project Presentations</td>
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<td>08</td>
<td>F 5/7/04</td>
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<td>PROJECT DUE DATE</td>
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## References

[1] Rothman  
[4] IT-Leadership  
[7] Barnes & Gray  
[9] Akhtar  
[10] Becker  
[14] German  
[15] Bosua  
[16] Neal & Linington