Principles of Software Engineering: Introduction
COSI 120b, Spring 2005
Overview

• What is this class?
  – What should you get out of this class?
  – What should you put into this class?

• Syllabus
  – Semester schedule
  – Instructor and TA
  – Textbook and recommended reading

• Next Topic
What is this class?

• The study of software engineering, including the principles and practices
• Software engineering is multi-facetted
  – Methodologies for efficiently constructing software
  – Techniques for building better software products
  – Leveraging software tools
• This class presents a survey of all of these areas
What should you get from this class?

• An understanding of the field
• Practical experience in the use of various software tools, techniques and methodologies
• Experience working on a software development team
What should you put into this class?

• Prerequisites
  – Understanding of software development (i.e. you have written some software applications)
  – Java
    • Your term project will be written in Java, using Java libraries and tools
  – Ability to work in a team
    • NO ONE will do a term project alone

• The prerequisites are not negotiable.
What should you put into this class?

- Term project
  - Groups of 3 - 4 people
  - Two presentations, one in the middle of the semester and one at the end of the semester

- Tests
  - Two quizzes, one in the middle of the semester and one at the end of the semester
  - No final

- Occasional Homework Assignments

- Attend Class
## Semester Schedule

<table>
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<tr>
<th>Date</th>
<th>Topic</th>
<th>Due</th>
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<tr>
<td>1/19</td>
<td>Introduction, Administration, Why Study Software Engineering?</td>
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<tr>
<td>1/24, 1/26</td>
<td>Software Methodologies, Requirements Engineering</td>
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<td>1/31, 2/2</td>
<td>The Term Project, Developer Collaboration</td>
<td>Term Project distributed</td>
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<td>2/7, 2/9</td>
<td>Performance Engineering and System Modeling</td>
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<td>2/14, 2/16</td>
<td>System Design, Requirements to Design</td>
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<tr>
<td>2/28, 3/2</td>
<td>Presentations</td>
<td>Term Project, Part 1 due</td>
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<td>3/7, 3/9</td>
<td>System failures, implementation strategies, patterns and refactoring</td>
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<td>3/14, 3/16</td>
<td>Development tools, system debugging, system visualization, system profiling</td>
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<td>3/21, 3/23, 3/24</td>
<td>Quiz 1 (3/21), architectures, software libraries</td>
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<tr>
<td>3/28, 3/30</td>
<td>System testing, component oriented development, aspect oriented programming</td>
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<td>4/4, 4/6</td>
<td>The Mythical Man Month and the Death March, DoD Architectures</td>
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<td>4/11, 4/13</td>
<td>Presentations</td>
<td>Term Project, Part 2 due</td>
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<td>4/18, 4/20</td>
<td>Conclusions, Quiz 2 (4/20)</td>
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Instructor and TAs

• Instructor: Seth Landsman
  – seth@cs.brandeis.edu
  – Office Volen 110
  – Hours: by appointment

• TAs: TBD
Textbook and Recommended Reading

• Required
  – Software Engineering by Roger Pressman

• Recommended
  – Mythical Man Month by Fredrick Brooks
  – Death March by …
Next Topic

• Why Study Software Engineering?