Instructor    Dr. Lixin Tao, ltao@pace.edu, http://csis.pace.edu/~lixin
Pleasantville Office: G320, (914)773-3449

Lectures    PLV Goldstein 315, Tuesdays and Thursdays, 5:35PM-7:25PM

Office Hours   Tuesdays and Thursdays, 3PM–5:30PM at PLV G320

Description
Software engineering as an engineering discipline. Role and ethics of an engineer.
Software processes. Project management. Domain analysis. Problem
specification. Object-oriented analysis. Object-oriented design. Testing and
quality control. Software maintenance. Software framework and reuse.
Component-based software engineering. Software design patterns and
architectures. Engineering ethics and software copyright.

Learning Objectives
• Understanding the software processes, the major stages of these processes,
  and the major roles in them;
• Effectively conducting software modeling with the universal modeling
  language UML;
• Effectively conducting object-oriented analysis, design, implementation, and
  testing;
• Familiar with software frameworks, components, reusable patterns, and major
  software architectures;
• Being able to work in a team, communicating with each other effectively both
  verbally and in technical writing;
• Effectively conducting project management: project scheduling, role
  assignment, peer review, project coordination, version control, quality control;
• Mastering the major computer-aided-software-engineering (CASE) tools
  including Rational Rose, Borland JBuilder, and Microsoft Visual Studio
  .NET.
• Understanding the importance of engineering ethics and software copyright.

Textbook
• Object-Oriented Software Engineering: Practical Software Development Using

References
• UML Distilled, 2nd Edition, by Martin Fowler with Kendall Scott. Addison-Wesley,
• Class notes and course material posted on Pace Blackboard (http://blackboard.pace.edu/)

Major Teaching Tools
• Rational Rose Enterprise
• JBuilder
• Visual Studio .NET Professional 2003
• Microsoft Project

Quizzes
There will be two quizzes on fundamental concepts, both administered through Pace Blackboard 6 (http://blackboard.pace.edu). The quizzes will be on March 24 and May 3 respectively.

Project
Students will be organized into teams of 5-6 students each. Each team will propose and complete a major course project based on the Object Client-Server Framework (OCSF) that can provide practice for the students in all stages of a software process. Example projects include network-based communication utilities and distributed games.

Students in each team will be assigned various roles of a typical software engineering process, and responsible for the project management, project specification, object-oriented analysis, object-oriented design, implementation, and testing. Each team will submit a joint project report, including the project objectives, approaches, role and task assignment as well as workload percentage of each team member in the project’s total effort (default is the equal distribution of workload), major software process documentations, installation manual, user manual, and known problems. Each team will formally present its project at least twice, and each student must be involved in such oral presentations. The final project presentation and demonstration should be no later than April 28. Some technical subjects relevant to the project design and implementation, including OCSF, will also be assigned to teams to study and present and such presentations are considered part of the project effort. The evaluation of the course project is based on the quality of project report, quality of project design and implementation, quality of oral presentations, and quality of the final project demo.

Weekly Assignment
Each week, some course activities, including discussion participation and project work, will be assigned on the Blackboard Discussion Board for the week. The deadline for each weekly assignment is the following Sunday evening. All deliverables for the weekly assignment must be posted on the Blackboard Discussion Board for the week by the deadline.

Weekly Participation Grade (PG)
Each week a student will get a Participation Grade based on (1) whether the student attends the lectures of the week (up to 2 points); (2) whether the student complete the weekly assignment for the week (up to 2 points); and (3) whether the student actively participates in classroom and Blackboard Discussion Board discussion (up to 2 points).

**Grading Scheme**

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Quizzes</td>
<td>20%</td>
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<tr>
<td>Weekly Participation</td>
<td>20%</td>
</tr>
<tr>
<td>Project</td>
<td>60%</td>
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<tr>
<td>Quality of design and implementation</td>
<td>30%</td>
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<tr>
<td>Project oral presentations</td>
<td>15%</td>
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<tr>
<td>Project written reports</td>
<td>15%</td>
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**More Information:** For more up-to-date information on this course, please visit Discussion Board of course Blackboard at

http://blackboard.pace.edu

regularly.