

CS 588: Advanced Software Engineering Development

Texts

- Watts S. Humphrey, *A Discipline for Software Engineering*, Addison-Wesley ISBN 0-201-54610-8 (required).

Objectives

- Understand software development as an engineering discipline.
- Understand the evolution of the individual software development process through application of Watts Humphrey's Personal Software Process (PSP) Model.
- Learn the value of personal process measurements.
- Learn to measure the attributes of the personal software development process through a series of PSP-based development projects.
- Learn where, and how, to make improvements in the personal software development process through a series of PSP-based development projects.
- Understand that processes evolve and that process improvement is incremental in nature.
- Understand that development excellence at the organizational level is based on excellence on the personal software process level.

Prerequisites

- CS 487.

Syllabus

• Process concepts, process improvement models, Capability Maturity Model, Testing Maturity Model, Personal Software Process (PSP) Model.	2.0 hours
• The Baseline Software Process.	3.0 hours
• PSP0 - process, scripts, logs, reports, project assignment.	2.0 hours
• Planning, contents of a plan, producing a quality plan.	4.0 hours
• PSP0.1 - process, scripts, logs, reports, project assignment.	2.0 hours
• Measurement concepts, applications to measurement of software size.	4.0 hours
• PSP1.0 - process, scripts, logs, reports, project assignment.	2.0 hours
• Software size estimation, overview of methods.	4.0 hours
• Resource and schedule estimation.	4.0 hours
• Measurements in PSP, goals, and practices.	4.0 hours
• PSP1.1 - process, scripts, logs, reports, project assignment.	2.0 hours
• Design, code reviews, principles, measurements, checklists.	4.0 hours
• Software quality management.	3.0 hours
• Using the PSP, goals, benefits.	2.0 hours
• Applying the PSP - case studies.	1.5 hours
• Discussion of class data.	1.0 hour
• Final exam review.	0.5 hours
Total	45.0 hours

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