CS 588: Advanced Software Engineering Development

Texts


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. 2.0 hours
- Discussion of class data. 1.0 hour
- Final exam review. 0.5 hours

Total 45.0 hours

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