Managing Software Development

OMSE 511 Winter 2007
Oregon Master of Software Engineering

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Course Materials: *http://www.omse.pdx.edu/~omse511g/*

Course Description

The course provides the essential knowledge, processes and tools required for a software engineer or technical manager to successfully direct and oversee an intensive software development project. Topics include planning, leading, organizing, estimating, directing, monitoring and controlling software projects and their teams. Quantitative progress measures and risk management are emphasized throughout the course.

The course is built around a case study that evolves as the course progresses. The case study is about an 18-month project that starts with a description of the customer's requirements and the associated contract to construct the software-intensive system. The first assignment is to develop an initial project management plan for the case study project. Subsequent assignments require the student to update this plan taking into consideration new challenges experienced by the project. As the case study project evolves, people, management and technical issues are discussed in class.

Learning Objectives

Upon completion of this course, each student should be able to:

- Describe project management processes and typical problems encountered when managing software projects.
- Choose appropriate process models to meet the needs of a given software project.
- Understand and describe alternative project team organizations and project work breakdown structures.
- Understand the relevance and contents of plans and requirements documents.
- Understand software estimation methods to assess product size, project effort, and schedules.
- Budget and monitor technical progress, product quality and risk factors.
- Understand customer-relationship and team-building principles and how they can be applied to create software project teams.

- Write a software project management plan that identifies activities, tasks, schedules, resources and progress indicators that address project requirements, risk factors and the development process chosen.

Workload Distribution

To succeed in this course, students are expected to devote approximately 10 hours of study per course session as follows:

- Review the required textbooks, lecture notes, case study and other referenced materials (5 hours per session)
- Participate in class discussions and prepare assignments (5 hours per session).

Required Textbooks and Resources

[QSPM]	Futrell, Shafer & Shafer, "Software Quality Project Management", Prentice Hall, ISBN 0-13-091297-2
[Peopleware]	DeMarco & Lister, "Peopleware", Dorsett House, ISBN 0-932633-43-9

Course Calendar: Topics and Readings

Modules	Sessions	Topics
1	1	Overview, Introduction, Peopleware
	2	Process Models, Lifecycles and Teams
	3	Planning, Work Breakdown, Tasks and Activities
2	4	Software Estimating & Reuse
	5	Resourcing, Organizations, Dependencies & Scheduling
	6	Requirements Engineering
3	7	Risk Management
	8	Management Tracking and Control
	9	Project Support Processes (Communicating, SCM, SQA)
	10	Termination, Post-Performance Analysis

The "weekend" version of this course consists of 3 modules, each one consisting of multiple sessions held over a given weekend of the course. The "weekly" version of the course consists of 10 sessions held on weekday evenings.

Students are expected to read the assignments in advance and relate them to the lecture material. They are assigned readings from [QSPM] and [Peopleware].

One of the assignments requires that the student update an existing project schedule to be embedded in a Word document. No particular planning tool is mandated (you may use a tool such as MS Project but this is not required). The student is expected to use a drawing package such as PowerPoint to render project schedules and figures. Such figures are to be imported into the main Word document such that a single file is submitted electronically (zipped files of multiple documents packaged together will not be acceptable without the instructor's approval).

Grading

A class grades are derived from written assignments and participation broken down as follows:

Activity	**% of Grade**
Discussions / Participation	30%
Develop a Software Project Management Plan (SPMP)	
Assignment 1: Initializing the Project Management Plan	20%
Assignment 2: Incorporating Work Activities & Schedule	20%
Assignment 3: Incorporating Control	15%
Assignment 4: Proposing the "Get-Well" Plan	15%