

OMSE 511: Managing Software Development

Spring 2008 (hybrid offering)

Instructor: Kal Toth, ktoth@omse.pdx.edu

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 a 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.

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 estimating 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.

The Instructor

Dr. Kal Toth is an Associate Professor in the Maseeh College of Engineering and Computer Science at Portland State University in Portland Oregon. He is the Associate Director of the Oregon Master of Software Engineering (OMSE) program. He has over 25 years of industry experience including Hughes Aircraft, CGI Group Inc., Datalink Systems Corp, Intellitech Canada Ltd. and several Canadian federal government agencies. Kal has a Ph.D. in EE (computer systems engineering) from Carleton University (Ottawa) and is a P.Eng. (British Columbia) with a software engineering designation.

Course Delivery Modes

Face-to-face, on-line (only) and hybrid versions of this course are available. All three versions use PSU's online learning system to provide access to learning materials. Topical discussions are conducted on-line and individual assignments are downloadable "take homes" requiring students to upload them into the learning system. In "hybrid" offerings of this course you may attend classes at the scheduled location posted on the OMSE web site.

In all delivery modes you will also be participating in online discussion forums throughout the week and submitting individually prepared assignments. With respect to online discussions, your participation with other students and the instructor will be part of the basis of your grades.

Prerequisites

OMSE 500 Principles of Software Engineering (or equivalent) plus two or more years of experience in software development or software maintenance.

Assignments, Tools and Workload Distribution

You are expected to complete the readings and lecture materials, and respond critically to the related discussion questions and assignments. Students are expected to read the assignments in advance and relate them to the lecture material.

Some of the assignment work may involve producing a schedule of activities. No particular planning tool is mandated for this - you may choose to use a tool such as MS Project, Excel or a similar tool. You are 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).

To succeed in this course, students are expected to devote 10-12 hours of study per week as follows:

- Review the required textbook, lecture notes and reference materials (5+ hrs/week)
- Participate in discussions and complete assignments (5+ hrs/week).
- Guidelines and structure for discussions and assignments are provided online.

Policy on Student Collaboration and Academic Integrity

You are encouraged to discuss the course material and the assignments with other students. However, all assigned work must be done individually unless the instructor explicitly tells you otherwise. You are expected to read and review the policy on academic integrity. Please contact the professor if you have any doubts about the propriety of your course activities.

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

Grading

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

Activity	% of Grade
Discussions / Participation	40%
<i>Develop a Software Project Management Plan (SPMP)</i>	
Assignment 1: Initialize the Software Project Management Plan	15%
Assignment 2: Incorporate Work Breakdown and Scheduling	15%
Assignment 3: Incorporate Managerial Control	15%
Assignment 4: Develop a "Get-Well" Strategy	15%

Course Calendar: Topics and Readings

Week	Topics	Readings	
		QSP	Peopleware
1	Course Overview, Introduction and Peopleware	1	Parts I, III
2	Software Processes and Teams	3,4,6	Part IV
3	Planning and Work Breakdown	7,8,9	
4	Software Estimating	10,11	
5	Organizing and Scheduling	12,13,14,15	
6	Requirements Engineering	16,17	
7	Risk Management	18	
8	Management Tracking and Control	24,25	
9	Project Support Processes (Communicating, SQA, SCM)	29,30,31	Part V
10	Post Project Activities	27,28	Part VI