

# Planning and Management of Software Projects 2012-13

Last Updated Wednesday, 05 March 2014

2012-13 Course Syllabus Alerts 5.3.2014 - The Web page of 2013-14 Course is NOW open. This Web page is now closed. The NEW Web page of the 2013-14 Course is available here. Description

The course provides an overview of the roles, responsibilities, and management methods of the technology project manager. The course assumes no prior knowledge in management techniques and is intended to teach students how to develop approaches and styles of management for software projects. The course assumes a basic understanding of analysis techniques.

- To provide students with a clear understanding of the unique risks, issues, and critical success factors associated with technology projects
- To introduce students to the role and function of project management
- To explain the stages and process of the project life cycle
- To understand the various techniques for planning and managing a technology project
- To examine basic methodologies for software design, development, testing and implementation
- To examine various techniques for managing a software development team
- To understand the need and techniques for managing users and user expectations
- To learn project planning techniques through the use of Microsoft Project Grading
- 35% Midterm test
- 35% Final test
- 30% Homeworks

NOTE for students that cannot take midterm and final exam during the term: these students are expected to take both the tests in any exam session and to submit homeworks one week before the chosen exam session. Homeworks

Students are required to work in team (up to 4 people) and to prepare 4 homeworks during the course. To register your project please fill in this form. Please, also write an email to Dario Cerizza (dariocerizza-at-gmail.com) putting [PMSP2013] in the subject to report him that you have just submitted a new project. Dario Cerizza will create and share with you a dropbox (<https://www.dropbox.com/>) folder where you will upload the homework assignments. You will receive an email from dropbox as soon as the folder will be available. You should upload your homework assignments in that shared folder.

Homework

Score

What

When

1

7 points

Project Charter for your project

class 5

2

7 points

Initial Work Breakdown Structure (WBS) for your project

class 9

3

2 points

Software factory exercise

class 19

4

15 points

Develop a final project plan in MS Project (including durations, resources, links, successors & predecessors) for your project

Final review

Textbooks

- Rapid Development, McConnell, Steve, Microsoft Press, 1996, ISBN 1-55615-900-5.
- Information Technology Project Management, Schwalbe, Kathy, 2nd ed., Course Technology, 2002, ISBN 0-619-03528-5 (this text includes a 120 day evaluation copy of MS-Project 2000).

#### Notes

- For those students that follow the classes, the slides published on the class web site may be sufficient.
- During the term readings from online resources will be also assigned. Students will be given the appropriate URLs during class and these will be listed on the class web site. Software
- MS Project <http://office.microsoft.com/project> available in A3.3 Classes

#### Class

#### Topic

Optional Reading/Homework

#### Class 1

11.3.2013 from 9.00 to 10.30

#### Course Overview [pdf]

- Course Introduction
- Project Management (PM)
- A pico-project: make a good-looking paper airplane
- Fundamentals
- The PM field
- People, Process, Product, Technology

#### Class 2

13.3.2013

#### Classic Mistakes [pdf]

- Class 1 review (and, if needed, completion)
- 36 Classic Mistakes [pdf]
- a case study [pdf] annotated with classic mistakes [pdf]

#### Class 3

18.3.2013

3 hours!

#### Understanding Software Project Management [pdf]

- Class 2 review (and, if needed, completion)
- PMI fundamentals and processes
- Project selection CANCELED
- Statement of Work (SOW)
- Project charter
- homework 1 assignement

#### Readings (prior to this session):

- McConnell: chapters 1-4

#### Class 4

20.3.2013

More on Software Project Management [pdf]

- Project and Organizations
- Program Management
- Procurement Management

Readings (prior to this session):

- Schwalbe: chapters 1-2, 11 "Project Procurement Management" (336-345)

Class 5

25.3.2013

3 hours!

Planning Phase (part I) [pdf]

- Project Phases
- Development lifecycle models

Readings:

- McConnell: 7 "Lifecycle Planning"
- Schwalbe: 3 "Project Integration Management" (62-67), 4, "Project Scope Management"

Homework 1 Due:

- Project Charter for your project
- please use this template [doc]

Class 6

27.3.2013

Planning Phase (part II) [pdf]

- Matching lifecycles to projects
- Project plans

Readings:

- How to Fail with the Rational Unified Process: Seven Steps to Pain and Suffering

Class 7

8.4.2013

3 hours!

Work Breakdown Structures [pdf]

- Planning vs. Estimating vs. Scheduling
- What's a WBS?
- Types and Formats of WBS
- Techniques to develop a WBS
- Guidelines
- homework 2 assignement

Readings:

- Fairley 183-194 "Work Breakdown Structures";
- Seven steps to better brainstorming

Class 8

10.4.2013

Estimation Techniques [pdf]

- Estimation
- Cone of Uncertainty
- Methodologies
- Guidelines

Readings:

- McConnell: 8 "Estimation"
- Schwalbe: 6, "Project Cost Management" (157-175)

Class 9

15.4.2013

4 hours!

Scheduling [pdf]

- Project network diagram fundamentals
- PERT techniques
- Gantt charts
- Critical chain scheduling

Readings:

- McConnell: 9, "Scheduling"
- Schwalbe: 5, "Project Time Management"

Homework 2 Due:

- Initial Work Breakdown Structure (WBS) for your project

Class 10

22.4.2013

4 hours! in room 3.3

Hands-on MS Project (part 1)[pdf]

- Mid-term Exam Preview [pdf]
- Using MS Project additional material [zip] Readings:
- Appendix A "Guide to Using Microsoft Project 2000" (447-477)

6.5.2013

room V07

Mid-Term Exam

Class 11

13.5.2013

More on requirement [pdf]

- Class 5 review
- Requirements Gathering Techniques

- Other Tips

## Class 12

15.5.2013

### Change Management [pdf]

- Featur-set Control
- Change Control
- McConnell's example of Change Control Procedure [pdf]
- Project recovery

### Readings:

- McConnell: 14 "Feature-Set Control"

## Class 13

20.5.2013

4 hours! in room 3.3

### Software Factory

- building code:
- maven [pdf]
- hands on [pdf]
- Track configurations: SVN [pdf]

## Class 14

22.5.2013

### People Dimension [pdf]

- Project Roles
- Staffing profile
- Hiring
- Team models and successful projects
- The mythical Man-Month
- Optimal team size
- Tools: RAM and Skill Matrix

### Readings:

- McConnell: 11 "Motivation", 13 "Team Structure"
- Schwalbe, 8, "Project Human Resource Management"

## Class 15

27.5.2013

4 hours! in room 3.3

### Hands-on MS Project (part II) [pdf]

- Resource Levelling
- additional material
- Schedule refined [mpp]
- Resource Levelled [mpp]

## Class 16

29.5.2013

- Project Control [pdf]
- Progress Monitoring
- Status reporting                      Earned value analysis
- example 1 [xls]
- example 2 [xls]
- MS project example [mpp]

## Reading:

- McConnell: 17-19
- Schwalbe, 6 "Project Cost Management" (175-184), 9 "Project Communication Management", 15 "Controlling"

## Class 17

3.6.2013

4 hours!

Partially in room 3.3

- Project Quality Management [pdf] + Junit Lab [pdf]
- Test specifications
- Black box and white box testing
- Test scripts
- Unit and integration testing
- Acceptance test specifications
- Test tools
- Testing code: Junit
- maven-based [zip]
- eclipse-base [zip]
- homework 3 assignment [pdf]

## Readings:

- Schwalbe: 7 "Project Quality Management"

## Class 18

5.6.2013

- Risk Management [pdf]
- Definitions
- Types of risks and unknowns
- Risk assessment
- Risk control
- List of Schedule Risks by McConnell
- Examples of Risk Management Plans by McConnell's
- Sample Top 10 Risks List by McConnell

## Readings:

- McConnell: 5 "Risk Management"
- Schwalbe: 10, "Project Risk Management"

## Class 19

10.6.2013

## Final Stages [pdf]

- Final Steps
- Example of deployment check list
- Maintenance
- Project Recovery
- Post Project Reviews
- A template [doc]
- Success
- statistics
- Tips
- Capability Maturity Model (CMM)
- Final exam pre-view [pdf]

## Readings:

- McConnell: 16 "Project Recovery"
- Schwalbe: 16 "Closing"

## Homework 3 Due:

- To be announced in Class 17

17.6.2013

room V07

## Final Exam

- Final exam pre-view [pdf]

## Homework 4 Due:

- Develop and submit a copy of the final project plan (include durations, resources, links, successors & predecessors) for your project Class Projects and Policies
- Homework Policy: Unless otherwise noted, homework is due in the class following the assignment. Homework should be printed and legible.
- Team Project Policy: maximum 3 people per team Acknowledgements
- This course is largely based on Prof. John Musser class notes on "Principles of Software Project Management"
- Original information is available at <http://www.projectreference.com/>
- Reuse and republish permission was granted.