Planning and Management of Software Projects 2014-15

Last Updated Sunday, 07 June 2015

2014-15 Course Syllabus Alerts 20.2.2015 - The Web page of 2014-15 Course is NOW open. As in the past years, the Web page of 2013-14 Course will be no longer maintanined and all information concerning 2014-15 Course will appear 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% Mid-term test
- 35% End of the term test
- 30% Homeworks

NOTE for students that cannot take mid-term and end of the term tests: these students can choosen any exam session and they must submit homeworks one week before the exam. The exam is the same proposed in the mid-term and end of the term tests. Home works

Students are required to work in team (up to 3 people) and to prepare 3 homeworks during the course.

Homework

Score

What

When 1

5 points

Project Charter for your project (template)

30.3.2015 2

10 points

Initial Work Breakdown Structure (WBS) for your project

27.4.2015 3

16 points

Develop a release backlog for your project suing SCRUM approach
22.6.2015

Please use this form to register your project for Planning and Managing Software Projects 2014/2015. I will create and share with you a Dropbox (https://www.dropbox.com/) folder where you will upload the homework assignments. You will receive and email from Dropbox as soon as the folder will be available. Inside the shared folder, you'll find one subfolder per each homework assignment (e.g. one folder named Homework-1, another folder named Homework-2, ...). Please, upload your homework assignments in the correct subfolder.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

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. Classes

Class

Topic

Optional Reading/Homework

Class 1

9.3.2015

Course Overview [pdf]
- Course Introduction
- Project Management (PM)
- Fundamentals
- The PM field
- Assignement of a pico-project: make a good-looking paper airplane

Class 2

11.3.2015

Course Overview [pdf]
- Student's presentation about the pico-project: make a good-looking paper airplane
- People, Process, Product, Technology

Class 3

16.3.2015

Classic Mistakes [pdf]
- a case study [pdf]
- 36 Classic Mistakes [pdf]
- the case study annotated with classic mistakes [pdf]

Class 4

23.3.2015

Understanding Software Project Management [pdf]
- PMI fundamentals and processes
- Project selection
- Statement of Work (SOW)
- Project charter
- homework 1 assignement (template) [doc]

Readings (prior to this session):
- McConnell: chapters 1-4

Class 5

25.3.2015

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 6

30.3.2015

Planning Phase (part I) [pdf]
- Project Phase
- 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 7

1.4.2015

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 8

20.4.2015

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 tobetter brainstorming

Class 9

22.4.2014

Estimation Techniques [pdf]
- Estimation
- Cone of Uncertainty
- Methodologies
- Guidelines

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

Class 10

27.4.2015

Scheduling [pdf]
- Project network diagram fundamentals
- Gantt charts
- Critical chain scheduling
- PERT techniques
- Exercizes on scheduling and critical path

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

Homework 2 Due:
- Initial Work Breakdown Structure (WBS) for your project

4.5.2014

VS.9

Mid-Term test
- Mid-Term test pre-view [pdf]

Class 11

6.5.2015

More on requirement [pdf]
- Class 5 review
- Requirements Gathering Techniques
- Other Tips
- tools for requirement management
- Mid-Term test pre-view [pdf]

Class 12

11.5.2015

Risk Management [pdf]
- Definitions
- Types of risks and unkowns
- Risk assessment
- Risk control
- List of Schedule Risks by McConnel [link]
- Examples of Risk Management Plans by McConnel's [link]
- Sample Top 10 Risks List by McConnel [link]
- Q/A on Mid-Term test

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

Class 13

13.5.2015

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

Readings:
- McConnell: 14 "Feature-Set Control"

Class 14

20.5.2015

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

25.5.2014

Project Control [pdf]
- Progress Monitoring
- Status reporting Earned value analysis

- example 1 [xls]
- example 2 [xls]

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

Class 16

27.5.2015

SCRUM [pdf]
- overall process
- user stories
- story points
- business value

- roles
- Scrum Team
- Product Owner
- Scrum Master
- Artifacts
- Product Backlog
- Sprint Backlog
- Release Backlog
- Burndown Chart
- Task Board
- Meetings
- sprint planning
- daily scrum
- sprint review
- sprint retrospective

Readings:
- SCRUM Diagram by axosoft.com
- SCRUM Cheat Sheet by complexitymaze.com
- SCRUM Task Board by by Scrum and XP from the Trenches from Henrik Kniberg
- P. Deemer, G. Benefield, C. Larman, B. Vodde (2009).
"The Scrum Primer".
- H. Kniberg and M. Skarin (2009). "Kanban and Scrum - making the most of both".

Class 17

3.6.2015

Project Quality Management [pdf]
- Test specifications
- Black box and white box testing
- Test scripts
- Unit and integration testing
- Acceptance test specifications
- Test tools

Readings:
- Schwalbe: 7 "Project Quality Management"

Class 18

8.6.2015

Final Stages [pdf]
- Final Steps
- Example of deployment check list
- Maintenance
- Project Recovery
- checklist [link]
- Post Project Reviews
- A template [doc]
- Success
- statistics
- 2007
- 2008

- 2010

- 2011

- 2013

- Tips
- Capability Maturity Model (CMM) [link]
- End of the term test pre-view [pdf]

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

22.6.2015

End of the term test
- End of the term test pre-view [pdf]

Homework 3 Due:
- Develop a release backlog for your project suing SCRUM approach 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.