**CS413**

 **SOFTWARE ENGINEERING PROJECT MANAGEMENT**

**SYLLABUS**

**SPRING 2015**

Instructor: Beyhan Akporay

Lecture Classroom: EB-201

Lecture Hours:

* Section 1: Tuesday (9:40 – 10:30) – Thursday (10:40 – 12:30)
* Section 2: Monday (10:40 – 12:30) – Thursday (9:40 – 10:30)

Office Hours: C221, East Campus, by appointment

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**OBJECTIVES**

Software engineering project management ensures the delivery of a quality system on time and within budget. However the management of software development projects is a complex activity; as a result software engineering project manager plays a critical role.

This course teaches students how to apply the knowledge, skills, tools, and techniques to project activities to meet project requirements. Project planning, cost estimation and scheduling; project management tools, productivity metrics, project control techniques, risk management, software contract, teamwork, leadership, communication, and organizational issues are covered.

**REQUIRED TEXTBOOK**

1. Software Engineering, “A practitioner’s Approach”, Roger S. Pressman, Bruce R. Maxim McGraw Hill International Edition Eighth Edition 2015, ISBN: 978-1-249-25315-7 or MHID 1-259-25315-5

**RECOMMENDED TEXTBOOKS**

# Managing and Leading Software ProjectsRichard E. (Dick) Fairley, Wiley-IEEE Computer Society Press (February 9, 2009) ISBN-10: 0470294558 ISBN-13: 978-0470294550

1. Software En 9/E Ian Sommerville, University of St Andrews, Scotland ISBN-10: 0137035152 ISBN-13:  9780137035151Publisher:  Addison-Wesley
Copyright:  2011 Format:  Cloth; 792 pp Published:  03/03/2010

# Object-Oriented Software Engineering, Using UML, Patterns, and Java Bernd Bruegge & Allen H. Dutoit, 2004 Prentice Hall; 2nd edition ISBN-10: 0130471100, ISBN-13: 973-0130471109

# ASSESMENTS and GRADING SCALE

|  |  |  |
| --- | --- | --- |
| **Assessment** | **Weight** | **Date** |
| **Team Grading %50** |  |  |
| Project Charter | %10 | 3rd Week |
| Scope Planning / Software Requirements Specification (SRS) | %10 | 6th Week |
| Software Project Management Plan (SPMP) | %20 | 12th Week |
| Project Presentation | %10 | 14th Week |
| **Individual Grading %50** |  |  |
| Midterm | %15 | 8th Week |
| Final | %25 |  |
| Performance – attendance, in-class participation, teamwork, peer evaluation | %10 | 15th Week |

|  |
| --- |
| Grading Scale |
| A: | 91-100 |
| A-: | 87-91 |
| B+: | 83-87 |
| B: | 79-83 |
| B-: | 75-79 |
| C+: | 70-75 |
| C: | 65-70 |
| C-: | 60-65 |
| D+: | 55-60 |
| D: | 50-55 |
| F: | 0-50 |

FZ grade is assigned when either one of the following happens by 15th week:

* Lecture attendance is less than 18 hours
* Individual assessment is less than 10 points
* Total achievement from both individual assessment and team assessment is less than 30 points

**TENTATIVE Course Outline**

**Introduction**

Why managing and leading software projects are difficult, the nature of project constraints, a workflow model for software projects, the work products of software projects, the organizational context of software projects, organizing a software development team, maintaining the project vision and product goals, and the nature of process frameworks, software engineering standards, and process guidelines

**Process Models for Software Development**

Elements of the development process framework, distinctions among users, customers, and acquirers, several commonly used process models for software development, and how they influence management of software projects

**Establishing Project Foundations**

The nature of requirements engineering, determining the scope of a project, and establishing a contractual agreement

**Plans and Planning**

The planning process for software projects and description of IEEE template (Standard 1058) Software Project Management Plan (SPMP)

**Project Planning Techniques**

Rolling-wave planning, developing an architecture decomposition view, Work Breakdown Structure (WBS), project schedule, resource profiles, and resource Gantt charts

**Estimation Techniques**

Software product size measures, pragmatic, theory-based, and regression based estimation techniques, capabilities of estimation tools

**Measuring and Controlling Work Products**

Product measures for different kinds of work products, the role Configuration Management in measurement and control of work products, the roles of inspections, walkthroughs, and developer testing, ways to document and analyze defects and defect repairs

**Managing and Controlling Work Processes**

Measure and analyze original effort, schedule, and work products, Earned Value techniques to forecast estimated actual cost and completion date for software projects

**Managing Project Risk**

Methods and techniques used to identify, analyze, prioritize, and mitigate risk factors, risk mitigation strategies of avoidance, transfer, acceptance, immediate action, and contingency plans

**Teamwork, Leadership, and Communication**

Managing versus leading, the nature of teams and teamwork, techniques for maintaining morale and motivation, and personality styles

**Organizational Issues**

Elements of corporate cultures, mission and vision statements, intellectual capital, key personnel roles, responsibility versus authority, reward structure, and ethical behavior