IT 306: Software Project Management

(Elective)

Credits: 3
Lecture Hours: 48

Course Objectives

The module aims to provide an overview of the roles, responsibilities and management methods of the software project manager. The course intended to teach students how to develop approaches and styles of management for software projects.

Course Description

Software Project Basics, Tools and Techniques, Estimation, Project Schedules, Reviews, Software requirements, Design and Programming, Software Testing, Using Project management effectively, Management and leadership, Managing an outsourced Project, Process Improvement

Course Details

Unit 1: Software Project Basics **LH 5**

Introduction
Types of Software Projects
Classification of software projects: Based on software development life cycle, approach driven, maintenance, web application, agile development
Approaches to software project management
Alignment of software engineering methodology with project: management methodology
The Ad Hoc Methods-based Approach
The process-Driven Approach
Comparison between Ad Hoc Approach with the process-driven approach
Software Project Acquisition
Writing proposal, negotiating, contract acceptance

Unit 2:Tools and Techniques **LH 4**

Software project planning
Understanding the why is project needed and needs of project
Project management plan: resources, skill sets, computer systems
Risk assessment and management plan
Create the project plan

Unit 3: Estimation **LH 4**

Elements of successful estimate
Wideband Delphi Estimation
Other Estimation Techniques
Evaluation Estimation Problems

Unit 4: Project Schedules **LH 5**

Building the project schedule
The Work breakdown structure
Graphic representation of a schedule
Managing multiple projects
Schedule to manage commitments
Evaluation scheduling problems

Unit 5: Reviews **LH 4**

- Inspections
- Deskchecks
- Walkthroughs
- Code reviews
- Pair Programming
- Inspect to manage commitments

Unit 6: Software requirements **LH 5**

- Requirement elicitations
- Use Cases
- Software requirement specification
- Change control

Unit 7: Design and Programming **LH 4**

- Review the design
- Version control with subversion
- Refactoring
- Unit Testing
- Use automation

Unit 8: Software Testing **LH 4**

- Test plans and cases
- Test execution

Unit 9: Using Project management effectively **LH 4**

- Understanding change, making change successful

Unit 10 Management and leadership **LH 3**

- Take responsibility
- Doing everything out in open
- Manage the organization
- Manage the team

Unit 11: Managing an outsourced Project **LH 3**

- Prevent major sources of project failure
- Management issues in outsourced projects
- Collaborate with the Vendor

Unit 12: Process Improvement **LH 3**

- Software process improvement
- Moving forward

References

AdnerwStellman, Jennifer Greene, “Applied Software Project management”, First edition, O’Reilly Meida

Murali K. Chemuturi, Thomas M. CagelyJr, “Mastering software project management” ,J. Ross Publishing

Highes, B. and Cotterell, M., “Software Project Management”. McGraw Hill, 1999.

Conway, K., “Software Project Management”, -From Concept to Deployment”, DreamTech Press, 2001

Garmus, D. and Herron, D., “Function Point Analysis, Measurement Practices for Successful Software Projects”, Addison-Wesley, 2001.