

3/4 B.Tech. FIRST SEMESTER
SOFTWARE PROJECT MANAGEMENT **Credits: 4**
Free Elective

Lecture: 4 periods/week
Tutorial: 1 period /week

Internal assessment: 30 marks
Semester end examination: 70 marks

Course context and Overview: Principles of software project management, metrics, cost estimation, software project planning, organizing, resource allocation, directing and controlling, risk management, software configuration management, role of standards, management tools.

Prerequisites: Basics in Software Engineering

Objectives:

1. To understand project planning and management
2. About client management and project definition.
3. About testing based approach to development.
4. About team management and ongoing schedule tracking.

Learning Outcomes:

Ability to:

1. Understand the components of software management.
2. Demonstrate the software economical issues in the development of software projects.
3. Ascertain lifecycle process and artifacts of the process to simple projects.
4. Discuss work flows, milestones and planning strategies in the management of software project.
5. Explain projects organization, responsibilities, control and modern software project management.

UNIT - I

Conventional Software Management: The waterfall model, conventional softwareManagement performance.

Evolution of Software Economics: Software Economics, pragmatic software costestimation.

UNIT - II

Improving Software Economics: Reducing Software product size, improving softwareprocesses, improving team effectiveness, improving automation, Achieving required quality, peer inspections.

The old way and the new: The principles of conventional software Engineering, principlesof modern software management, transitioning to an iterative process.

UNIT - III

Life cycle phases: Engineering and production stages, inception, Elaboration, construction,transition phases.

Artifacts of the process: The artifact sets, Management artifacts, Engineering

artifacts, programmatic artifacts.

UNIT - IV

Model based software architectures: A Management perspective and technical perspective. **Work Flows of the process:** Software process workflows, Iteration workflows,

UNIT - V

Checkpoints of the process: Major mile stones, Minor Milestones, Periodic status assessments.

Iterative Process Planning: Work breakdown structures, planning guidelines, cost and schedule estimating, Iteration planning process, Pragmatic planning.

UNIT - VI

Project Organizations and Responsibilities: Line-of-Business Organizations, Project Organizations, evolution of Organizations.

Process Automation: Automation Building blocks, The Project Environment.

UNIT - VII

Project Control and Process instrumentation: The seven core Metrics, Management indicators, quality indicators, life cycle expectations, pragmatic Software Metrics, Metrics automation, Process discriminates.

UNIT - VIII

Future Software Project Management: Next generation Software economics, modern process transitions.

Effort Estimation and scheduling.

Learning Resources

Text Book:

1. Software Project Management, Walker Royce: Pearson Education, 2009.

Reference Books:

1. Software Project Management, Bob Hughes and Mike Cotterell: Tata McGraw- Hill Edition.
2. Software Project Management in Practice, Pankaj jalot, Pearson Education
3. Software Project Management, Joel Henry, Pearson Education.
4. Software Project management – Sanjay Mohopatra
5. Software Project management, A Concise Study – S.A. Kelkar