

## 4/4 B.Tech - FIRST SEMESTER

**IT7T5C****ELEMENTS OF SOFTWARE PROJECT MANAGEMENT****Credits:3****Lecture: 3 Periods/week****Internal assessment: 30 marks****Practice/Interaction: 1Period/week****Semester end examination: 70 marks****Objectives:**

- To introduce the basic building blocks of software project management.
- To demonstrate principles of modern software project management and life cycle phases.
- To discuss different milestones in software project management.
- To give an idea on next generation software economics.

**Outcomes:**

Students will be able to

- Understand the concepts of conventional software management and software economics.
- Gain the knowledge on software development lifecycle and artifacts.
- Understand the process workflows and milestones.
- Analyze the concepts of work break down structure, cost estimation and process automation.
- Understand the importance of software metrics and quality indicators.

**Prerequisite:**

Software Engineering

**Syllabus:****UNIT - I**

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

Evolution of Software Economics: Software Economics, pragmatic software cost estimation.

Improving Software Economics: Reducing Software product size, improving software processes, improving team effectiveness, improving automation, Achieving required quality, peer Inspections.

**UNIT - II**

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

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 - III**

Model based software architectures: A Management perspective and technical perspective.

Work Flows of the process: Software process workflows, Iteration workflows,

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

**UNIT-IV**

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

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

Process Automation: Automation Building blocks, The Project Environment.

**UNIT - V**

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

Future Software Project Management: Next generation Software economics.

**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, Pankajjalot, 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

**e-Learning Resources:**

1. <http://www.qaielearning.com/training/software-project-management>