SOFTWARE PROJECT MANAGEMENT

(Elective – III)

(Common to CSE & IT)

Course Code :13CT1132	**L**	**T**	**P**	**C**
	4	**0**	**0**	**3**

Pre requisites: Software Engineering.

Course Outcomes:

At the end of the course, a student will be able to

CO 1 Estimate overall cost of a software project.

CO 2 Explain software development process.

CO 3 Distinguish workflows of process.

CO 4 Design project organization structure & analyze quality.

CO 5 Estimate effort and schedule needed for project.

UNIT-I (12 Lectures)

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 through Software Economics, Achieving Required Quality, Peer Inspections.

UNIT-II (12 Lectures)

THE OLD WAY AND THE NEW:

The Principles of Conventional Software Engineering, The Principles

of Modern Software Management, Transitioning to an Iterative Process.

LIFE CYCLE PHASES: Engineering and Production Stages, Inception Phase, Elaboration Phase, Construction Phase, Transition Phase.

ARTIFACTS OF THE PROCESS:

The Artifact Sets, Management Artifacts, Engineering Artifacts, Pragmatic Artifacts.

UNIT-III (12 Lectures)

MODEL BASED SOFTWARE ARCHITECTURES:

A Management Perspective, A Technical Perspective.

WORKFLOWS OF THE PROCESS:

Software Process Workflows, Iteration Workflows.

CHECKPOINTS OF THE PROCESS:

Major Milestones, Minor Milestones, Periodic Status Assessments.

ITERATIVE PROCESS PLANNING:

Work Breakdown Structures, Planning Guidelines, The Cost and Schedule Estimating Process, The Iteration Planning Process.

UNIT-IV (12 Lectures)

PROJECT ORGANIZATION AND RESPONSIBILITIES:

Line-Of-Business Organizations, Project Organizations, Evolution of Organizations.

PROJECT CONTROL AND PROCESS INSTRUMENTATION:

The Seven Core Metrics, Management Indicators, Quality Indicators Modern Project Profiles, Next-Generation Software Economics. The COCOMO Cost Estimation Model: COCOMO

UNIT-V (12 Lectures)

EFFORT ESTIMATION AND SCHEDULING:

Effort Estimation, Scheduling

QUALITY PLANNING:

Quality Concepts, Quantitative Quality Management Planning.

RISK MANAGEMENT: Risk Assessment, Risk Control.

(VIII Unit from Pankaj Jalote)

TEXT BOOKS:

1. Walker Royce, *"Software Project Management – A Unified Framework"*, 1st Edition, Pearson Education, 2002.
2. Pankaj Jalote, *"Software Project Management in Practice"*, 1st Edition, Pearson Education, 2002.

REFERENCES:

1. Bob Hughes, *"Mike Cotterell, Rajib Mall, Software Project Management"*, 5th Edition, The McGraw-Hill Higher Education, 2011.
2. Joel Henry, *"Software Project Management"*, 1st Edition, Pearson Education, 2004.