

# SOFTWARE PROJECT MANAGEMENT

(Elective – III)

(Common to CSE & IT)

**Course Code :13CT1132**

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**Pre requisites:** Software Engineering.

## Course Educational Objectives:

The main objective of the course is to make students understand how to manage software projects.

- ❖ To understand the draw backs of traditional project management methods.
- ❖ To understand the principles of modern software project management.
- ❖ To understand the improving software economics.
- ❖ To understand the model based software architectures.
- ❖ To show how to reduce rework, labor-intensiveness, expenditure and produce a project within schedule.

## Course Outcomes:

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

- ❖ Understand ethical issues related to software project management.
- ❖ Apply this ethical knowledge in practical situations.
- ❖ Understand how different management and development practices process quality.
- ❖ Understand how different management and development practices affect software.
- ❖ get idea about workflows of the process.

**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*”, 1<sup>st</sup> Edition, Pearson Education, 2002.
2. Pankaj Jalote, “*Software Project Management in Practice*”, 1<sup>st</sup> Edition, Pearson Education, 2002.

**REFERENCES:**

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

