

4/4 B.Tech. EIGHTH SEMESTER
ELECTIVE – V

EM8T4A

SOFTWARE PROJECT MANAGEMENT

Credits: 3

Lecture: 3 periods/week

Internal assessment: 30 marks

Tutorial: 1 period /week

Semester end examination: 70 marks

Objectives:

The aim of this course is to study how to plan and manage projects at each stage of the software development life cycle (SDLC) and train software project managers and other individuals involved in software project planning and tracking and oversight in the implementation of the software.

Learning Outcomes:

- Plan and manage projects at each stage of the SDLC and responsibilities of a project team and project organization.
- Be well aware on ethical issues related to software project management and can apply this ethical knowledge in practical situations.
- Create project plans that address real-world management challenges and develop the skills for tracking and controlling software deliverables.

UNIT - I

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

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

UNIT - II

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

The old way and the new : The principles of conventional software Engineering, principles of 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 discriminants.

UNIT - VIII

Future Software Project Management: Next generation Software economics, modern process transitions, Efforts Estimation and scheduling.

Learning resources

Text books:

1. Software Project Management, Walker Royce: Pearson Education, 2009.
2. Software Project Management in Practice, Pankaj jalot, Pearson Education.

Reference books:

1. Software Project Management, Bob Hughes and Mike Cotterell: Tata McGraw- Hill Edition.
2. Software Project Management, Joel Henry, Pearson Education.