2/3 MCA Second Semester

CA4T4 **SOFTWARE PROJECT MANAGEMENT** **Credits : 4**

Lecture Hours : 4 periods / week Internal assessment : 30 Marks

Semester and Examination: 70 Marks

Course Description:

In this course the students will learn the Review of software engineering concepts, Software Process, Introduction to Project Management, Software Project Planning, Project Economics, Project Scheduling and Tracking Techniques, Risk Analysis and Management, Software Metrics and Project Management, Project Control and Closure, Project Management Issues with regard to New Technologies.

Course Objectives:

- Deliver successful software projects that support organization's strategic goals.
- Match organizational needs to the most effective software development model.
- Plan and manage projects at each stage of the software development life cycle (SDLC).
- Create project plans that address real-world management challenges.
- 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. Tailoring the Process: Process discriminants.

UNIT-VIII

Future Software Project Management: modern Project Profiles, Next generation Software economics, modern process transitions. Case Study: The command Center Processing and Display system-Replacement (CCPDS-R).

Learning Resources

Text Books:

1. Software Project Management, Walker Royce: Pearson Education, 2005.

Reference Books:

1. Software Project Management, Bob Hughes and Mike Cotterell: Tata McGraw- Hill Edition.5/e, 2009
2. Software Project Management, Joel Henry, Pearson Education.2009
3. Software Project Management in practice, Pankaj Jalote, Pearson Education.2005.