

SOFTWARE PROJECT MANAGEMENT

Course Code	23CS4602A	Year	III	Semester	II
Course Category	PE-III	Branch	CSE	Course Type	Elective
Credits	3	L – T – P	3-0-0	Prerequisites	Software Engineering
Continuous Evaluation:	30	Semester End Evaluation:	70	Total Marks:	100

Course Outcomes		
Upon successful completion of the course, the student will be able to:		
CO1	Understand the basic concepts, terminologies and issues of software project management.	L2
CO2	Apply appropriate project organizational structures, tools, metrics, and quality indicators to improve software project performance.	L3
CO3	Apply the Concepts of Agile Methodologies and DevOps	L3
CO4	Analyze methods, models and technologies towards achieving project success	L4

Syllabus		
Unit No.	CONTENTS	Mapped CO
I	<p>UNIT-I:</p> <p>Conventional Software Management: The waterfall model, conventional software Management performance.</p> <p>Evolution of Software Economics: Software Economics, pragmatic software cost estimation.</p> <p>Improving Software Economics: Reducing Software product size, improving software processes, improving team effectiveness, improving automation, Achieving required quality, peer inspections.</p> <p>The old way and the new: The principles of conventional software Engineering, principles of modern software management, transitioning to an iterative process.</p>	CO1,CO2
II	<p>UNIT-II:</p> <p>Life cycle phases: Engineering and production stages, inception, Elaboration, construction, transition phases.</p> <p>Artifacts of the process: The artifact sets, Management artifacts, Engineering artifacts, pragmatic artifacts.</p>	CO1, CO2

III	<p>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. Iterative Process Planning: Work breakdown structures, planning guidelines, cost and schedule estimating, Iteration planning process, Pragmatic planning.</p>	CO1,CO2, CO4
IV	<p>UNIT- IV: Project Organizations and Responsibilities: Line-of-Business Organizations, Project Organizations, evolution of Organizations. Process Automation: Automation Building blocks, The Project Environment. Project Control and Process instrumentation: The seven core Metrics, Management indicators, quality indicators, life cycle expectations, pragmatic Software Metrics, Metrics automation.</p>	CO1,CO2, CO4
V	<p>UNIT-V: Agile Methodology, Adapting to Scrum, Patterns for Adopting Scrum, Iterating towards Agility. Fundamentals of DevOps: Architecture, Deployments, Orchestration, Need, Instance of applications, DevOps delivery pipeline, DevOps eco system. DevOps adoption in projects: Technology aspects, Agiling capabilities, Tool stack implementation, People aspect, processes</p>	CO1,CO3
Learning Resources		
Text Books		
<ol style="list-style-type: none"> 1. Software Project Management, Walker Royce, PEA, 2005. 2. Succeeding with Agile: Software Development Using Scrum, Mike Cohn, Addison Wesley. 3. The DevOps Handbook: How to Create World-Class Agility, Reliability, and Security in Technology Organizations, Gene Kim , John Willis , Patrick Debois , Jez Humb,1st Edition, O'Reilly publications, 2016. 		
Reference Books		
<ol style="list-style-type: none"> 1. Software Project Management, Bob Hughes,3/e, Mike Cotterell, TMH 2. Software Project Management, Joel Henry, PEA 3. Software Project Management in practice, Pankaj Jalote, PEA, 2005, 4. Effective Software Project Management, Robert K.Wysocki, Wiley,2006. 5. Project Management in IT, Kathy Schwalbe, Cengage 		
E-Resources & other digital material		
NPTEL : https://onlinecourses.nptel.ac.in/noc19_cs70/preview		