## SOFTWARE ENGINEERING

Course Code	23CS3403	Year	II	Semester	II
Course	PC	Branch	CSE	<b>Course Type</b>	Thoery
Credits	3	L - T - P	3-0-0	Pre requisites	
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 fundamentals of Software Engineering and various process	L2
	models	
CO2	Apply project management and requirement analysis techniques for the software	L3
	Projects.	
CO3	Use various design elements along with testing to prepare software system.	L3
<b>CO4</b>	Use of CASE to improve Software development and Software maintenance.	L3

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	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	РО 7	PO 8	PO 9	PO 10	PO1 1	PO1 2	PS O1	PS O2
CO1	3													
CO2	3	3	3								3		1	1
CO3	3	3	3		2						3		1	1
<b>CO4</b>	3				3								1	1

Syllabus				
Unit No.	CONTENTS	Mapped CO		
Ι	<ul> <li>Introduction: Evolution, Software development projects, Exploratory style of software developments, Emergence of software engineering, Notable changes in software development practices.</li> <li>Software Life Cycle Models: Basic concepts, Waterfall model and its extensions, Rapid application development, Agile development model, Spiral model.</li> </ul>	CO1		
Ш	<b>Software Project Management:</b> Software project management complexities, Responsibilities of a software project manager, Project Planning, Metrics for project size estimation, Project estimation techniques, Empirical Estimation techniques, COCOMO-A heuristic estimation technique, Risk Management	CO1, CO2		
	<b>Requirements Analysis and Specification:</b> Requirements gathering and analysis, Software Requirements Specification (SRS).			

<ul> <li>Software Design: Overview of the design process, How to characterize a good software design? Cohesion and Coupling, Layered arrangement of modules, Approaches to software design</li> <li>Function-Oriented Software Design: Overview of SA/SD methodology, Structured analysis, Developing the DFD model of a system, Structured design Detailed design and Design Paview</li> </ul>	601
<b>Function-Oriented Software Design:</b> Overview of SA/SD methodology, Structured analysis, Developing the DFD model of a system, Structured	COI, CO3
design, Detaned design, and Design Review.	
<b>User Interface Design</b> : Characteristics of a good user interface, Basic concepts, Types of user interfaces, Golden Rules.	
Coding and Testing: Coding, Code review, Software documentation, Testing, Unit Testing, Black-box testing, White-Box testing, Debugging, Integration testing, testing object-oriented programs, System testing.CIVSoftware Reliability and Quality Management: Statistical testing, Software quality, Software quality management system, ISO 9000.SEI Capability maturity model.C	01, 203
<ul> <li>Computer-Aided Software Engineering (Case): CASE and its scope,</li> <li>V CASE environment, CASE support in the software life cycle, other characteristics of CASE tools, Towards second generation CASE Tool, and Architecture of a CASE Environment.</li> <li>Software Maintenance: Characteristics of software maintenance, Software reverse engineering, Software maintenance process models and Estimation of maintenance cost.</li> </ul>	01, 204
Learning Resources	
Text Books	
1 Fundamentals of Software Engineering Rajib Mall 5 <sup>th</sup> Edition PHI	
1. Fundamentals of Software Engineering, Rujio Han, 5° Earton, 111.	
<ol> <li>Software Engineering A practitioner's Approach, Roger S. Pressman, 9<sup>th</sup> Edition Graw Hill International Edition.</li> </ol>	n, Mc-
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<ul> <li>2. Software Engineering A practitioner's Approach, Roger S. Pressman, 9<sup>th</sup> Edition Graw Hill International Edition.</li> <li><u>Reference Books</u></li> <li>1. Software Engineering, Ian Sommerville,10<sup>th</sup> Edition, Pearson.</li> </ul>	n, Mc-
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<ul> <li>2. Software Engineering A practitioner's Approach, Roger S. Pressman, 9<sup>th</sup> Edition Graw Hill International Edition.</li> <li>2. Software Engineering, Ian Sommerville,10<sup>th</sup> Edition, Pearson.</li> <li>2. Software Engineering, Principles and Practices, Deepak Jain, Oxford Univer Press.</li> <li>E-Resources &amp; other digital material</li> <li>1) <u>https://nptel.ac.in/courses/106/105/106105182/</u></li> <li>2) <u>https://infyspringboard.onwingspan.com/web/en/app/toc/lex_auth_01260589500827_shared/overview</u></li> </ul>	n, Mc- rsity 6387148
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