Module	Unit	Detailed Syllabus Content	Hrs (48+12)	Marks
I	**THE SOFTWARE PROCESS**		10	15
	1	Software Engineering: Nature of Software, Software Engineering, Software Process, Software Development Life Cycle	1	
	2	Prescriptive Process Models – Waterfall, Incremental, Evolutionary	3	
	3	Agile Process: What is Agility, What is agile Process?	2	
	4	Extreme Programming: XP Values, XP Process, Industrial XP, XP Debate	1	

	5	Other Agile Process Models: Adaptive Software Development, Scrum, Dynamic Systems Development Method, Crystal	3	
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II	**REQUIREMENT ENGINEERING**		**10**	**15**
	6	Introduction to Requirement Engineering: Functional and non-functional requirement (Types)	2	
	7	Requirement engineering process	2	
	8	Requirement Elicitation: Concept of Requirement Elicitation, Elicitation Technique, Stories and Scenarios	2	

	9	Requirement Specification: Concept, Natural Language Specification, Structured Specification, Use Cases, Software Requirement Document	2	
	10	Requirement Validation: Concept, Requirement Change	2	
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III	**SYSTEM MODELLING, ARCHITECTURAL DESIGN**		14	20
	11	Context models: Detailed Concept	2	
	12	Interaction models: Concept, Use case modelling, Sequence Diagram	2	
	13	Structural Models: Concept, Class Diagram,	2	

		Generalization, Aggregation		
		Behavioural Models: Concept, Data driven modelling, Event driven modelling, Model driven engineering	2	
		Architectural design decisions: Detailed concept	2	
	14	Architectural views: Detailed concept, Layered Architecture, Repository Architecture, Client-Server architecture, Pipe and Filter Architecture	2	
		Architectural patterns: Transaction Processing Systems, Information Systems, Language Processing System	2	
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IV	TESTING, MAINTENANCE AND RE ENGINEERING		14	20
	16	Strategic Approach to Software Testing: Verification and Validation, Organizing for Software Testing, Software Testing Strategy	2	
	17	Strategies for Conventional Software: Unit and Integration Testing	2	
	18	Strategies for Object Oriented Software: Unit Testing and Integration Testing in OO Context	2	
	19	Validation Testing, System Testing, White Box Testing and Black Box Testing	2	
	20	Software Maintenance - Software Supportability, Reengineering	2	

	21	Business Process Reengineering: Business Process, BPR Model	2	
	22	Software Reengineering and Reverse Engineering	2	
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V	**Open Ended Module-Trends in Software Engineering**		**12**	**10**
	1	Case Study.		
	2	Engage in a substantial project that integrates knowledge from various areas of software engineering.		
	3	Explore the process of creating a software startup.		
	4	Apply critical thinking skills to software design and implementation.		