Program	Bachelor of Engineering (B.E.)	**Semester - 5**
Type of Course	Professional Electives	
Prerequisite	-	
Course Objective	-	

Teaching Scheme (Contact Hours)				Examination Scheme				
				Theory Marks		Practical Marks		
Lecture	**Tutorial**	**Practical**	**Credit**	**External Marks**	**Internal Marks**	**External Marks**	**Internal Marks**	**Total Marks**
3	0	2	4	70	-	30	-	150

***SEE** - Semester End Examination, **CIA** - Continuous Internal Assessment (It consists of Assignments/Seminars/Presentations/MCQ Tests, etc.)*

Course Content

T - Teaching Hours | **W** - Weightage

Sr.	Topics	T	W
1	**Introduction to Software and Software Engineering** The Evolving Role of Software, Software: A Crisis on the Horizon and Software Myths, Software Engineering: A Layered Technology, Software Process Models, The Linear Sequential Model, The Prototyping Model, The RAD Model, Evolutionary Process Models, Agile Process Model, Component-Based Development, Process, Product and Process.		
2	**Agile Development** Agility and Agile Process model, Extreme Programming, Other process models of Agile Development and Tools.		
3	**Managing Software Project** Software Metrics (Process, Product and Project Metrics), Software Project Estimations, Software Project Planning (MS Project Tool), Project Scheduling & Tracking, Risk Analysis &Management (Risk Identification, Risk Projection, Risk Refinement , Risk Mitigation).		
4	**Requirement Analysis and Specification** Understanding the Requirement, Requirement Modeling, Requirement Specification (SRS), Requirement Analysis and Requirement Elicitation, Requirement Engineering.		
5	**Software Design** Design Concepts and Design Principal, Architectural Design, Component Level Design (Function Oriented Design, Object Oriented Design) (MS Visio Tool),User Interface Design, Web Application Design.		
6	**Software Coding & Testing** Coding Standard and coding Guidelines, Code Review, Software Documentation, Testing Strategies, Testing Techniques and Test Case, Test Suites Design, Testing Conventional Applications, Testing Object Oriented Applications, Testing Web and Mobile Applications, Testing Tools (Win runner, Load runner).		
7	**Quality Assurance and Management** Quality Concepts and Software Quality Assurance, Software Reviews (Formal Technical Reviews), Software Reliability, The Quality Standards: ISO 9000, CMM, Six Sigma for SE, SQA Plan.		
8	**Software Maintenance and Configuration Management** Types of Software Maintenance, Re-Engineering, Reverse Engineering, Forward Engineering, The SCM Process, Identification of Objects in the Software Configuration, Version Control and Change Control		
9	**DevOps**		

Course Content

T - Teaching Hours | **W** - Weightage

Sr.	Topics	T	W
	Overview, Problem Case Definition, Benefits of Fixing Application Development Challenges, DevOps Adoption Approach through Assessment, Solution Dimensions, What is DevOps?, DevOps Importance and Benefits, DevOps Principles and Practices, 7 C's of DevOps Lifecycle for Business Agility, DevOps and Continuous Testing, How to Choose Right DevOps Tools, Challenges with DevOps Implementation, Must Do Things for DevOps, Mapping My App to DevOps Assessment, Definition, Implementation, Measure and Feedback		
10	**Advanced Topics in Software Engineering** Component-Based Software Engineering, Client/Server Software Engineering, Web Engineering, Reengineering, Computer-Aided Software Engineering, Software Process Improvement, Emerging Trends in software Engineering.		
	Total		

List of Practical