

## Detailed Syllabus

Sr.No.	Topic
1	<b>Software and Software Engineering</b> Nature of software, Unique Nature of WebApps, Software Engineering and its importance, software process, Software Engineering practice, Software Myths.
2	<b>Software Process Model</b> A Generic Process Model, Process Assessment and Improvement, Prescriptive Process Model: Waterfall Model, Incremental Process Models-Incremental Model, RAD Model, Evolutionary Process Models- Prototyping, Spiral Model, Concurrent Development Models, Component-Based Development Model <b>Agile Development:</b> What is Agility, What is an Agile Process, Agile methods Process Models- Extreme programming, Adaptive Software Development (ASD), Dynamic System Development Method (DSDM), Scrum. <b>Computer Aided Software Engineering (CASE) :</b> Overview of CASE approach, Classification of CASE tools
3	<b>Software Requirement Analysis and Specification</b> System and software requirements Types of software requirements: Functional and non-functional requirements, Domain requirements, User requirements Requirements Engineering Tasks, Initiating the Requirement engineering Process, Eliciting the requirements, Developing Use-cases, Negotiating Requirements, Validating Requirements.
4	<b>Software Design</b> Design concepts: Abstraction, Architecture, Patterns, Modularity, Cohesion, Coupling, Information hiding, Functional independence, Refinement, Refactoring, Design Classes. Design Model: Data design Elements, Architectural Design Elements, Interface Design Elements, Component Level Design elements, Deployment-Level Design Elements. Pattern-Based Software Design: Describing a Design Pattern, Using Patterns in Design, Frameworks.
5	<b>Coding</b> Programming languages and development tools , Selecting languages and tools, Good programming practices, Coding Standards
6	<b>Software Testing Strategies</b> A Strategic Approach to Software Testing, Techniques of testing: Black-box testing, and White-box testing Test Strategies: Unit testing, Integration Testing, Interface testing, System testing, Alpha and beta testing, Regression testing. Design of test cases.

7	<b>Estimation</b> Software Scope and Feasibility, Software Project Estimation, Decomposition Techniques, Empirical Estimation Model.	
8	<b>Risk Management</b> Reactive vs proactive Risk Strategies, Software Risks, Risk Identification, Risk projection, Risk refinement, Risk mitigation, monitoring &management, The RMMM Plan	
9	<b>Quality Management</b> Quality Concepts, Software Quality Assurance, Formal Approaches to SQA, Software Reliability, The ISO 9000 Quality Standards.	
10	<b>Current trends in Software Engineering</b> Technology Evolution, Identifying “Soft Trends”, Technology Directions, Tools-Related Trends.	