Govt. Polytechnic Sundernagar
Lesson Plan (Theory)

Branch **Computer Engg**
Subject **Software Engineering**
Teacher **Komal Chaudhary**

Semester **5th**

sr. no.	No of lectures	UNIT	Detailed Content	Resources	Remarks	Signature
1	10	**Introduction to Software Engineering**	Software Definition, Software Characteristics, Software Crisis, Attributes of Good Software, Program Versus Product, Exploratory Style of Software Development, Shortcomings, Software Engineering, Software Development Life Cycle, Software Process Framework, Framework Activities - Communication, Planning, Modeling, Construction, and Deployment; Software Application Domains - System Software, Application Software, Scientific/ Engineering Software, Embedded Software, Web Applications	R1,R2		
2	12	**Software Life Cycle Models**	Classical Models - Waterfall Model, Iterative Waterfall Model, V-Model, Prototyping Model, Incremental Model, Evolutionary Model; Rapid Application Development (RAD), Agile Development Models - Extreme Programming, Scrum, Lean; Spiral Mode	R1,R3		
3	12	**Software Project Management**	Software Project Manager - Skills and Responsibilities; Project Planning – Sliding Window Planning, SPMP Project Planning; Project Size Estimation - Lines of Code, Function Point, Project Estimation Techniques - Empirical, Heuristic and Analytical Estimation Techniques; Expert Judgment, COCOMO, COCOMO 2, Project Scheduling - PERT and Gantt Charts; Staffing, Risk Management, Software Configuration Management	R2,R3		

4	10	**Requirement Analysis and Specifications**	Requirements Gathering, Requirement Elicitation Techniques: Interviews, Surveys, Questionnaires, Brainstorming; Requirements Analysis, Software Requirements Specification (SRS) - Role of SRS, Characteristics of SRS Document, Functional and Non-functional Requirements, Traceability	R1,R2		
5	10	**Software Design**	Overview of the Design Process, Outcome of the Design Process, Abstraction, Design Pattern, Refactoring, Classification of Design Methodologies, Cohesion and Coupling, Software Design Approaches - Function-oriented, Object-oriented; User Interface Design, User Experience	R1,R2		
6	10	**Coding and Testing**	Software Coding, Coding Standards, Code Review - Code Walkthrough, Code Inspection, Software Documentation, Internal and External Documentation, Software Testing : Testing activities, Unit, Integration, System and Acceptance Testing, Black Box and White Box Testing.	R3,R4		

R1 Software Engineering : A Practitioner's Approach, By Roger Pressman
R2 Fundamentals of Software Engineering , By Rajib Mall, PHI.
R3 Handouts
R4 Online Resources

Subject Teacher

H.O.D
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