

GOVT. POLYTECHNIC, HAMIRPUR (H.P.)
Lesson Planning

Branch: Computer Engineering

Semester: 5th

Subject: Software Engineering **Course Code:** ITPC201

Session: August 2026

Teacher: Indu Bala

Laboratory: No

Sr. No.	No of Lectures	Chapter/Unit Description	Detailed contents	Reference Resources	Remarks
1	10	Unit 1 : 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	Unit 2 : 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 Model.	R1,R2	
3	12	Unit 3 : 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, Computer Engg N-2022 Page 5 COCOMO, COCOMO 2, Project Scheduling - PERT and Gantt Charts; Staffing, Risk Management, Software	R1,R2	

			Configuration Management		
4	10	Unit 4 : 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	Unit 5 : 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	Unit 6 : 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.	R1,R2	

References:

1. Fundamentals of Software Engineering , By Rajib Mall, PHI.
2. Software Engineering by Pankaj Jalote, Narosa, Publication.

COURSE OUTCOMES:

1. Understand the basic terminology associated with software engineering.
2. Explain various software life-cycle processes.
3. Understand software project management principles and best practices.
4. Understand the software testing and quality assurance

Signature of Teacher with Date
(Indu Bala)

Signature of HOD
(Sameer Bharti)

