

The Maharaja Sayajirao University of Baroda Polytechnic Higher Payment Program Diploma in Computer Engineering			ACADEMIC YEAR 2021-2022		
Year	II	SOFTWARE ENGINEERING (CSE3428)	Lecture Hrs per week	4	
Semester	II		Max marks	100	
Pre-requisite: System and object oriented design methodologies					
CO1	Select appropriate process model to all stage of software development life cycle (SDLC), requirements engineering and how to manage user's requirement				
CO2	Illustrate a Software Requirements Specification (SRS) that includes essential components such as feasibility analysis, Data dictionaries and Data Flow Diagrams.				
CO3	Utilize Unified Modelling Language (UML) to create various diagrams and apply software project metrics and estimation techniques to plan project schedules.				
CO4	Assessing various testing strategies to effectively identify and resolve defects.				
CO5	Identify software risks using proactive and reactive strategies, and implement software configuration management practices to control changes.				
BT	1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation				
COURSE CONTENT/SYLLABUS					
Unit	Unit Name		Hrs	Weightage	CO
1	Software Development Process: Software Engineering: A Layered Technology Approach - The Software Process - Prescriptive Process Models: Waterfall Model, Linear Sequential Model, Prototyping Model, RAD Model, Incremental Model, Spiral Model - Agile Software Development: Difference Between Prescriptive And Agile Process Model, Features Of The Agile Software Development Approach, Concept Of Extreme Programming		10	18	CO1
2	Software Requirements analysis & specifications: Requirement Process, Requirement Specification, Characteristics of SRS, Components of SRS, Structure of Requirements Document, Data Dictionary, Feasibility Analysis, Data Flow Diagram.		08	14	CO1,CO2
3	Object Modeling using UML: UML Diagrams, Use case Model, Sequence Models, Activity Models, Class Models, State models.		10	18	CO3
4	Software Project Measurement And Planning Measures, Metrics And Indicators - Software Measurement: Size-Oriented Metrics, Function-Oriented Metrics, Software Quality Measures, Scheduling And Time Line Chart, Estimation Techniques.		08	14	CO3
5	Software Testing Strategies Software Testing Fundamentals: Good Test, Successful Test, Testing Strategies, Test Plan, Test Data - Test Case Design - Characteristics Of Testing Strategies - Software Verification And Validation - Testing Strategies: Unit Testing, Integration Testing, Top-Down Approach, Bottom-Up Approach, Regression Testing, Smoke Testing, Validation Testing - Alpha And Beta Testing (Concept And Differences) - System Testing: Types - White-Box And Black-Box Testing		10	18	CO4
6	Risk Management Risk Management: Software Risk, Proactive And Reactive Risk Strategies, Types Of Software Risks - Risk Assessment: Risk Identification, Risk Analysis, Risk Prioritization - Risk Control: Need, RMMM Strategy - Software Configuration Management (SCM): Need Of SCM, Benefits Of SCM, SCM Repository-Functions And Features Supported, SCM Process-Change Control And Version Control		08	18	CO4,CO5
			54	100	

REFERENCE BOOKS:

1.	Software Engineering - A Practitioner's Approach By Roger S. Pressman, TATA McGraw-Hill Publication
2.	Software Engineering By Pankaj Jalote, Wiley India Publication
3.	Software Engineering By Somerville, Pearson education PHI Publication
4.	Software Engineering, Dreamtech Press Publication
5.	Object-Oriented Analysis & Design: Understanding System, By Rumbaugh, Booch, Coad- Yourdon and Shlaer Mellor.
6.	Object-Oriented Modeling and Design with UML, By Micheal Blaha, James Rumbaugh.