C. U. SHAH UNIVERSITY,WADHWAN CITY.

Faculty of: **Computer Science**
Course: **Master of Computer Applications**
Semester**: II**
Subject Code**: 5CS02CSE1**
Subject Name: **Software Engineering**

Sr. No	Subject Code	Subject Name	Teaching hours/ Week			Credit hours	Credit Points	Evaluation Scheme/ Semester								
								Theory				Practical				Total
			Th	Tu	Pr			Internal Assessment		End Semester Exams		Internal Assessment		End Semester Exams		
								Marks	Duration	Marks	Duration	Marks	Duration	Marks	Duration	
2	5CS02CSE1	Software Engineering	4	--		4	4	30	1½	70	2½	--	--	--	--	100

Objectives:

- To be able to understand the concepts of Designing Software.

Prerequisites:

- Knowledge of Basic System Analysis and Design

Course outline:-

Sr. No.	Course content	No. of Hours
1	**Introduction to Software Engineering, Process and Process Models** Introduction to Software Engineering, Evolving Role of Software, Legacy Software. A Layered Technology, A Process Frame Work, The Process Pattern. Prescriptive Models, The Waterfall Model, V-Model, The RAD Model, Incremental Model , Spiral Model , Prototype Model , Component-Based Development model	**10**
2	**Requirements Engineering** Problem Recognition, Requirement Engineering tasks, Processes, Requirements Specification, Use cases and Functional specification, Requirements validation, Requirements Analysis, Modeling – Data Modeling, Behavioral Modeling	**10**
3	**Object Oriented Analysis and Design** Object Oriented Analysis Concept, Domain Analysis, Generic Concept of Object Oriented Analysis Model, Object Oriented Analysis Process, Object Relationship Model, Object Behavior Model. Design of Object Oriented System, The System Design Process, Object Design and System Design Process	**10**
4	**Testing Strategies and Tactics** A Strategic Approach to Software Testing (Verification and Validation) Strategic Issues, Validation Testing (Criteria, Configuration Review, alpha and beta Testing), The art of Debugging (Debugging Process, Strategies, Correcting the Error) , Software Testing Fundamentals, Black Box and White Box Testing, Object Oriented Testing Methods.	**10**
5	**Clean Room Software Engineering and Component Base Software Engineering** The Clean Room Approach, Functional specification, Clean room specification, Clean	**08**

	room design, Clean room testing, Engineering of component based systems, The component based software engineering process, Domain engineering, Component based development Classifying and Retrieving Components	
	Total hours	**48**

Learning Outcomes:

- He/She should be able to understand and appreciate the Web Technology.
- He/She should be aware of the working and architectural Web Site.
- He/She should be able to solve problems given to him/her using PHP efficiency.

Books Recommended:

- "Software Engineering – A practitioner's Approach", **Roger S. Pressman**. 6th Edition.
- "Object Oriented Analysis and Design" **Gooch**
- "Fundamentals of Software Engineering", **Rajib Mall.**

NPTEL Resources:

1. Software Engineering, IIT Kharagpur. Prof. Rajib Mall
   https://nptel.ac.in/courses/106105182, https://nptel.ac.in/courses/106105087,