C. U. SHAH UNIVERSITY – WADHWAN CITY

FACULTY OF TECHNOLOGY AND ENGINEERING
DEPARTMENT OF COMPUTER ENGINEERING
M. TECH. SEMESTER: - I

SUBJECT NAME: Software Engineering and Methodology (SEM)
SUBJECT CODE: 5TE01SEM1

Teaching & Evaluation Scheme: -

Subject Code	Subject Name	Teaching Scheme (Hours)				Credit	Evaluation Scheme							
							Theory				Practical (Marks)			Total
							Sessional Exam		University Exam		Internal		University	
		Th	Tu	Pr	Total		Marks	Hours	Marks	Hours	Pr/Viva	TW	Pr	
5TE01SEM1	Software Engineering and Methodology	4	0	2	6	5	30	1.5	70	3.0	-	20	30	150

Objectives:
Main Objective to study this subject is to get knowledge about whole Software development process with testing and architectural study. Create awareness of various tools

Prerequisites:
Basic Awareness of system analysis and problem solving methods and designing with UML .

Course outline:

Sr. No.	Course Contents
1	**Introduction:** Motivation, Software Attributes, Software characteristics, Software Quality Issues, Software testing
2	**Software Process Software Life cycle Process:** A Sequential Methodology - A Cyclical Methodology - The Water Sluice – Established Methodologies - The Boehm-Waterfall Methodology – The Boehm-Spiral Methodology Versions - The Booch Methodology – Object Modeling Technique (OMT) Rational Object Methodology- Clean room methodology
3	**Software Architecture:** Software Engineering Tools and Environments - Software Metrics – COTS Integration - Distributed, Internet-scale and Web-based Software Engineering
4	**Empirical Study of Software Tools and Methods:** Software Reengineering - Software Reuse - Software Safety – Enterprise Architectures, Zachman's Framework; Architectural Styles
5	**Software Design Patterns:** Architecture description languages - Product-line architectures; Component based development

6	**Case study:** Software Project management
7	**Tools for Software engineering:** Testing tools, Estimation tool, Planning tools

Learning Outcomes:-

1. A successful student will have acquired the skills to understand, develop, and analyze recognizers for SDLC.
2. The student will also be able to deploy efficient and methodical techniques for software designing and implementation.

Books Recommended:

1. Fundamentals of Software Engineering, **Ghezzi, Jazayeri, Mandrioli**; Pearson Education (2002)
2. Software Engineering, **Sommerville**; 6/E, Pearson Education (2006)
3. Software Engineering – A Practitioner's Approach, **Roger S Pressman**; MGH (2005)
4. Pattern-Oriented Software Architecture Volume 2: Patterns for Concurrent and Network ed Objects, **Schmidt, Stal, Rohnert, and Buschmann**; Wiley (2000)
5. Software Architecture in Practice, **Len Bass, Paul Clements, Rick Katzman, Ken Bass**, 2/E, Addiwon –Wesley Professional (2003)