

**VEER NARMAD SOUTH GUJARAT UNIVERSITY – SURAT**  
**B. Com. (Computer Application) 3<sup>rd</sup> Year**  
**Vocational Course**  
**Syllabus**  
**SEMESTER 5**  
**Effective From: June 2013**

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**Paper No.:** 8 **Teaching Hours:** 3 Hrs./Week  
**Paper Title:** Computer Application Paper-VIII **Credits:** 3  
(SOFTWARE ENGINEERING)

**Prerequisite:** Fundamentals of Basic Computer Concepts.

**Aim:** To make students aware of methodology of system design and analysis and there by introducing the concept of Software Engineering.

**Expected Outcome:** The students will be able to understand, design and develop projects in a systematic way. Students will also be able to prepare proper documentation of the projects.

**A. Software Engineering** **[50%]**

**1. Introduction**

- 1.1. Software, Software Characteristics, Applications, Myths.
- 1.2. Software Engineering General View
- 1.3. Software Process Models, Waterfall, Prototyping
- 1.4. 4GL Techniques
- 1.5. Efforts Distribution

**2. Requirement Analysis**

- 2.1. Introduction
- 2.2. Requirement gathering techniques
- 2.3. DFD, Data Dictionary and Process Specification
- 2.4. Importance of Requirement Analysis
- 2.5. Software Requirement Specification Document

**3. System Design**

- 3.1. Design Model
- 3.2. Principles and Concepts
- 3.3. Functional Independence
- 3.4. Mapping Requirements into Design
- 3.5. Design Documentation

**4. Software Testing**

- 4.1. Testing Fundamentals
- 4.2. Functional and Structural Testing
- 4.3. Testing Process
- 4.4. Case Studies carried out in the following Topics with DFD - GUI Applications e.g. Payroll System, Sales Management System

**B. PROJECT WORK** **[50%]**

Project Work to be based on the guidelines of Software Engineering.  
Prepare and submit Project Report for the selected project (Excluding Coding)

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**Reference Books:**

1. Pankaj Jalote: An Integrated Approach to Software Engineering – Narosa Richard
2. Fairley, Software Engineering concepts – McGraw Hill
3. Ian Sommesille : Software engineering – Addition Wesley
4. R.S. Pressman : Software Engineering – A Practitioner’s approach – McGraw Hill
5. Prof. Parthasarathy & B.W. Khalkar - System Analysis Design and Introduction to Software Engineering
6. Software Engineering Theory & Practice, Shari Lawrence Pfleeger, Pearson Ed.