Software Engineering

Semester III	Subject Code: BC31605	Lectures: 60

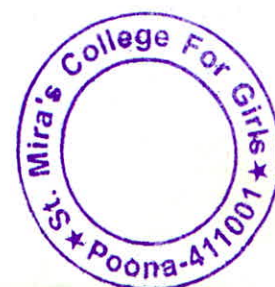| Objectives: |
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The course is designed to equip students with,
- The knowledge of software engineering
- The concepts of software product and processes
- The ability to analyze and to design, verify, validate, implement, apply, and maintain software systems

Unit 1: Introduction to System Concepts	04
- System Definition , Elements of System - Characteristics of System - Types of System - System Concepts	

Unit 2: Requirement Analysis	08
- Definition of System Analysis - Requirement Anticipation - Knowledge and Qualities of System Analyst - Role of a System Analyst - Feasibility Study - Technical Feasibility study - Economical Feasibility study - Operational feasibility study - Fact Gathering Techniques - Interview - Questionnaires - Record Review - Observation	

Unit 3: Software Development (Methodologies) Life Cycle & Process Models.	06

- SDLC (System Development Life Cycle)
  - ➢ Introduction
  - ➢ Phases of SDLC.
- Process Models
  - ➢ Waterfall Model
  - ➢ Incremental Process Models
  - ➢ Evolutionary Process Models
    - ➢ Prototyping Model
    - ➢ Spiral Model
- Concurrent Models

Unit 4: Analysis and Design Tools	16

- Entity-Relationship Diagrams
- Decision Tree and Decision Table
- Data Flow Diagrams (DFD)
- Data Dictionary(DD)
- Elements of DD
- Advantage of DD
- Pseudo code
- Input And Output Design
- Mini Project (Based on Unit 2 and Unit 4)

Unit 5:- System Design and Testing	14

- Qualities of Good Design
- Coupling, Types of Coupling
- Cohesion, Types of Cohesion
- Testing characteristics and definition
- Types of testing
  - ➢ Black-Box Testing
  - ➢ White-Box Testing
  - ➢ Unit testing
  - ➢ Integration testing
- Verification
- Validation
- Introduction to Software Testing Tool
  - ➢ Software Testing Tools

➢ WINRUNNER ➢ LOADRUNNER ➢ JUnit

*Contact hours – 12 hours

Text Books:
1. *Software Engineering,* Umakant s. shrishetti, Nirali prakashan June 2009 2. *Software Engineering,* Dr. D.D. Balsaraf, Umakant s. shrishetti, Nirali prakashan June 2014 3. *Software Engineering,* Mahesh Pawer, Gautam Kudale, Tech-Max Publication June2009 4. *Software Engineering* , Manwar Kumbhar, Vision Publication 2009

Reference Books:
1 Roger s. Pressman, *Software Engineering* 2 Prof. Khalkar and Prof. Parthasarathy, *SADASE(System Analysis and Design)*   Master Academy