# II Year - IV Semester
# B.Com (IT) / BBA (IT)
# SOFTWARE ENGINEERING
## (Discipline Specific Core)
## w.e.f 2018-19

| SCHEME OF INSTRUCTION | | SCHEME OF EXAMINATION | |
|---|---|---|---|
| Hours per Week | : 6 | Maximum Marks | : 100 |
| Credits | : 5 | Internal Assessment | : 40 |
| Instruction Mode | : Lecture + Practical | External Examination | : 60 |
| Course Code | : **BS.06.201.25T** | External Exam Duration | 3 Hrs |

**Course Objectives:** The course offers a fundamental framework to understand Software engineering and it demonstrate an understanding of and apply current theories, models, and techniques that provide a basis for problem identification and analysis, software design, development, testing, maintain quality and managing risks

**Course Outcomes:** By the end of the Course the student

- Gain knowledge on best practices of Software Engineering
- Can Prepare Software Requirement Specification Document, Data Flow Diagrams, Use case Diagrams and Entity Relationship Diagrams.
- Can adapt to new models, techniques, and technologies as they emerge and appreciate the necessity of continuing professional development

**UNIT – I** **(12 Hours)**

Introduction: Software – Software Characteristics, Software Applications

SDLC, Software Process, Software Process Models – Linear Sequential Model, Prototyping Model, RAD Model, Evolutionary Software process models – The Incremental Model, The Spiral Model, The WINWIN Spiral Model

**UNIT – II** **(12 Hours)**

Project Management Concepts: The Management Spectrum – The People, The Product, The Process, The Project

Software Project Planning – Project Planning Objectives, Software Scope, Resources, Software Project Estimation

**UNIT – III** **(12 Hours)**

Analysis Concepts Principles: Requirements Analysis, Requirements Elicitation for Software-Initiating the Process, Facilitated Application Specification Techniques, Quality Function Deployment, Use Cases, Analysis Principle's, The Software Requirement Specification (Ch 11)

**UNIT – IV** **(12 Hours)**

Design Concepts Principles: The Design Process, Design Principles, Design Concepts – Abstraction, Refinement, Modularity, Software Architecture, Control Hierarchy, Structural

Partitioning, Data Structure, Software Procedure, Information Hiding, Effective Modular Design – Functional Independence, Cohesion, Coupling

**UNIT – V** **(12 Hours)**

Software Testing Fundamentals – Testing Objectives, Testing Principles, Testability; Test Case Design

Risk Analysis and Management: Software Risks, Risk Identification, Risk Projection, Risk Refinement, Risk Mitigation, Monitoring and Management

**Lab:** SRS, Use Case, DFD, ER Diagrams

**Text Book:**

1. Software Engineering- A Practioner's Approach", 5th Edition , Pressman