

## **ACHARYA NAGARJUNA UNIVERSITY - UG SYLLABUS**

**Group:** B.Sc      **Subject:** Software Engineering      **Year:** III      **Sem:** V

### **Unit-I:**

**INTRODUCTION:** Software Engineering Process paradigms - Project management - Process and Project Metrics – software estimation - Empirical estimation models - Planning - Risk analysis - Software project scheduling.

### **Unit-II:**

**REQUIREMENTS ANALYSIS :** Requirement Engineering Processes – Feasibility Study – Problem of Requirements – Software Requirement Analysis – Analysis Concepts and Principles – Analysis Process – Analysis Model

### **Unit-III:**

**SOFTWARE DESIGN:** Software design - Abstraction - Modularity - Software Architecture - Effective modular design - Cohesion and Coupling - Architectural design and Procedural design - Data flow oriented design.

### **Unit-IV:**

**USER INTERFACE DESIGN AND REAL TIME SYSTEMS :** User interface design - Human factors - Human computer interaction - Human - Computer Interface design - Interface design - Interface standards.

### **Unit -V:**

**SOFTWARE QUALITY AND TESTING:** Software Quality Assurance - Quality metrics - Software Reliability - Software testing - Path testing – Control Structures testing - Black Box testing - Integration, Validation and system testing - Reverse Engineering and Re-engineering.

CASE tools –projects management, tools - analysis and design tools – programming tools - integration and testing tool - Case studies.

### **Reference Books:**

1. Roger Pressman S., "Software Engineering: A Practitioner's Approach", 7th Edition, McGraw Hill, 2010.
2. Software Engineering Principles and Practice by Deepak Jain Oxford University Press
3. Sommerville, "Software Engineering", Eighth Edition, Pearson Education, 2007
4. Pfleeger, "Software Engineering: Theory & Practice", 3rd Edition, Pearson Education, 2009
5. Carlo Ghazi, Mehdi Jazayari, Dino Mandrioli, "Fundamentals of Software Engineering", Pearson Education, 2003