

SOFTWARE ENGINEERING

Unit I

Introduction to Software Engineering: Definitions – Size Factors – Quality and Productivity Factors. Planning a Software Project: Planning the Development Process – Planning an Organizational Structure.

Unit II

Software Cost Estimation: Software cost Factors – Software Cost Estimation Techniques – Staffing-Level Estimation – Estimating Software Estimation Costs.

Unit III

Software Requirements Definition: The Software Requirements specification – Formal Specification Techniques. Software Design: Fundamental Design Concepts – Modules and Modularization Criteria.

Unit IV

Design Notations – Design Techniques. Implementation Issues: Structured Coding Techniques – Coding Style – Standards and Guidelines – Documentation Guidelines.

Unit V

Verification and Validation Techniques: Quality Assurance – Walkthroughs and Inspections – Unit Testing and Debugging – System Testing. Software Maintenance: Enhancing Maintainability during Development – Managerial Aspects of Software Maintenance – Configuration Management.

Textbook:

1. Software Engineering Concepts – Richard Fairley, 1997, Tata Mcgraw Hill.
(Unit-I: 1.1-1.3,2.3-2.4 Unit-II: 3.1-3.4 Unit III: 4.1- 4.2,5.1-5.2 Unit IV: 5.3-5.4,6.1-6.4 Unit-V: 8.1-8.2, 8.5-8.6, 9.1-9.3)

Reference Books:

1. Software Engineering for Internet Applications – Eve Anderson, Philip Greenspun, Andrew Grumet, 2006, PHI.
2. Fundamentals of Software Engineering – Rajib Mall, 2nd Edition, PHI
3. Software Engineering – Stephen Schach, 7th edition, TMH.