



SE-503

SOFTWARE REQUIREMENTS ANALYSIS AND ESTIMATION

UNIT-I

Requirements Engineering Overview: Software requirements overview – Software development roles – Software development process kernels – Commercial life cycle model – Vision development – Stakeholders needs & analysis.

UNIT-II

Requirements Elicitation: The process of requirements elicitation – Requirements elicitation problems – Problems of scope – Problems of understanding – Problems of volatility – Current elicitation techniques – Information gathering – Requirements expression and analysis – Validation – An elicitation methodology framework – A requirement elicitation process model – Methodology over method – Integration of techniques – Fact finding requirements gathering – Evaluation and rationalization – Prioritization – Integration and validation.

Unit-III

Requirements Analysis: Identification of functional and nonfunctional requirements- Identification of performance requirements – Identification of safety requirements – Analysis – Feasibility and internal compatibility of system requirements – Definition of human requirements baseline.

Unit-IV

Requirements Development: Requirements analysis – Requirements documentation – Requirements development workflow – Fundamentals of requirements development – Requirements attributes guidelines document – Supplementary specification document – Use case specification document – Methods for software prototyping – evolutionary prototyping – Throwaway prototyping.

Unit-V

Software Estimation & Costing: Software requirements management – Requirements management principles and practices – Requirements attributes – Change management process – Requirements traceability matrix – Links in requirements chain.

Suggested Reading:

1. Ian Sommerville and Peter Sawyer, "*Requirements Engineering: A Good Practice Guide*", 6th edition, Pearson Education, 2004.
2. Dean Leffingwell and DoSn Widrig, "*Managing Software Requirements: A Use Case Approach*", 2nd edition, Addison Wesley, 2003.

3. Karl Eugene Wiegers, "*Software Requirements*", Word Power Publishers, 2000.
4. Ian Graham, "*Requirements Engineering and Rapid Development*", Addison Wesley, 1998.
5. McConnell, S. "*Software Project: Survival Guide*", Microsoft Press, 1998.
6. Royce W, "*Software Project Management: A Unified Framework*", Addison Wesley, 1998.
7. Cooper . R, "*The Rise of Activity – Based Costing – Part one: what is an Activity – Based Cost System?*" *Journal of Cost Management*, vol.2, No.2 Summer, 1988.

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