

II BCA – III SEMESTER

SOFTWARE ENGINEERING

Unit – I

Introduction to Software Engineering : Definition – Size factors – Quality and productivity Factors – Managerial Issues – Planning a software project : Defining the problem – Developing a solution strategy – Planning the Development process – Planning an Organization structure – Other Planning activities.

Unit – II

Software Cost Estimation : Software cost factors – Software cost estimation technique – Staffing – Level Estimation – Estimating software maintenance costs – The software requirements specification – Formal specification techniques – Languages and process for requirements specification.

Unit-III

Software Design : Fundamental design concepts – Modules and Modularization criteria – Design notations – Design Techniques – Detailed design considerations – Real time and distributed system design – Test plans – Milestones, Walkthroughs, and Inspections.

Unit- IV

Implementation issues : Structured coding techniques – Coding style – Standards and Guidelines – Documentation guidelines – Type checking – Scoping rules – Concurrency Mechanisms.

Unit- V

Quality assurance – Walkthroughs and Inspections – Static analysis – Symbolic Execution – Unit testing and Debugging – System testing – Formal verification: Enhancing Maintainability during Development – Managerial Aspects of Software Maintenance – Source code metrics – Other Maintenance Tools and Techniques.

Books for Study:

1. R. Fairley, Software Engineering Concepts, Tata McGraw – Hill Edn. 1997.
2. R.S.Pressman, Software Engineering, Fourth Edn., McGraw Hill, 1997.