III B.SC– V SEMESTER

SOFTWARE ENGINEERING

UNIT I

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.

Reference Books:

1. R. Fairley, Software Engineering Concepts, Tata McGraw – Hill Edn. 1997.

2. R.S.Pressman, Software Engineering, Fourth Edn., McGraw Hill, 1997.