Subject Code : MBECA1:1

MAJOR BASED ELECTIVE – I - SOFTWARE ENGINEERING

UNIT I

Introduction to Software Engineering : Definitions - Size factors – Quality and Productivity Factors – Managerial Issues.
The Product : The evolving role of software – Software – characteristics - applications.
The process : Software engineering : A Layered Technology – The software process – Evolutionary software process models : Spiral model.

UNIT II

Planning a Software Project : Defining the problem – Developing a solution Strategy – Planning the development Process – Planning an organizational structure – Other Planning Activities .

UNIT III

Software Cost Estimation : Software Cost Factors – Software Cost Estimation Techniques – Staffing Level Estimation.
Software Requirements Definition : The Software Requirements Specification – Formal Specification Techniques.

UNIT IV

Software Design : Fundamental Design Concepts – Modules and Modularization Criteria – Design Notation – Design techniques – Design Guidelines.
Implementation Issues : Structured coding techniques – coding style – Documentation guidelines.

UNIT V

Verification and Validation Techniques : Quality Assurance – Walkthroughs and inspections – Static analysis –Unit testing and debugging – System testing – Formal verification.

Text Books:

1. Richard E. Fairely – "Software Engineering Concepts", Tata McGraw Hill Publication, 1997 edition.
2. Roger S.Pressman – "Software Engineering A Practitioner's Approach", 5th edition, McGraw Hill, 2001.

Reference book:

1. Watts S. Humphery – "A Discipline for Software Engineering", Addition Wesley Company, 1995.