Course Name : Software Engineering

Course Code : CS(EE)601C

Course Credit: 3

Contact Hour: 4L

Prerequisite:

Course Objective

The objectives of this course are

1. Analyze the requirements and feasibility studies of any kind of Project.
2. Demonstrate a familiarity with major algorithms and design issues.
3. Apply the knowledge of project estimation technique.
4. Learn the various life cycle models and system engineering hierarchy.
5. Implement the various testing strategies and debugging techniques.
6. Execute projects successfully with the knowledge of software project management.

Course Outcome

On completion of the course students will be able to

1. Analyze, design, verify, validate software systems.
2. Implement and apply the knowledge of software development.
3. Manage the development of software systems.
4. Utilize the various testing strategies.
5. Execute projects successfully.
6. Maintain the project flawlessly.

CO Mapping with departmental POs

H: High, M: Medium, L: Low

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1			H	H			H	H	H		H	
CO 2			H	H			H	H	H		H	
CO 3			H	H			H	H	H		H	
CO 4			H	H			H	H	H		H	
CO 5			H	H			H	H	H		H	
CO 6			H	H			H	H	H		H	

Course Content:

Module I: Introduction **3L**

Software, Type of software, Definition of Software Engineering, Aim and Objective.

Module II: Software Development Life-cycle **5L**

Feasibility Study, Requirements gathering and analysis, SDLC, steps involve in SDLC, maintenance, Role of metrics and measurement.

Module III: Software Development Life-Cycle Model **5L**

Waterfall model, prototyping, iterative enhancement model, evolutionary model incremental model, spiral model. Implementation level and Comparative study of different model

Module IV: Software Requirement Specification **5L**

Problem analysis, formal specification, requirement specification, validation, metrics.

Module V: System Design **4L**

Top-down and bottom-up design, structured approach. Functional versus object-oriented approach, Cohesion and Coupling.

Module VI: Coding **4L**

Introduction to Coding Standard and Specification, Top-down and bottom-up approaches, Verification, Metrics,

Module VII: Testing **8L**

Test plane, test cases specification, Levels of testing functional testing, structural testing, and reliability assessment. Error-handling.

Module VIII: Software Project Management and maintenance **8L**

Cost estimation, Project scheduling, Staffing, Software configuration management, Quality assurance, Project Monitoring control, Risk management.

Text Books:

1. Software Engineering - Rajib Mal
2. Software Engineering – Jawadekar (MGH)

Reference Books:

1. Software Engineering: A Practitioners Approach by Pressman Roger S. McGraw-Hill
2. Integrated Approach to Software Engineering, An, P. Jalote
3. Software Engineering, Ian Sommerville