CORE COURSE V: 4B05CSC SOFTWARE ENGINEERING

SEMESTER	COURSE CODE	HOURS PER WEEK	CREDIT	EXAM HRS
4	4B05CSC	4	4	3

COURSE OUTCOME

CO1: To understand the Software Development Life Cycle Models.
CO2: To familiarize with Software Requirement Analysis and Specification.
CO3: To familiarize with Classical Software Design Techniques.
CO4: To familiarize with various Software Testing Techniques and Tools.

Unit I: Introduction to software engineering

Definition, program versus software, software process, software characteristics, brief introduction about product and process, software process and product matrices; Software life cycle models – Definition, waterfall model, increment process model, evolutionary process model, selection of the life cycle model.

(18Hrs)

Unit II: Software Requirement Analysis and Specification

Requirements engineering, types of requirements, feasibility studies, requirement elicitation, various steps of requirement analysis, requirement documentation, requirement validation.

(18Hrs)

Unit III: Software design

Definition, various types, objectives and importance of design phase, modularity, strategy of design, function-oriented design. Objected Oriented Design – Analysis, design concept, design notations and specifications, design methodology.

(18Hrs)

Unit IV:Software Testing

What is testing?, Why should we test?, who should do testing?, test case and Test suit, verification and validation, alpha beta and acceptance testing, functional testing, techniques to design test cases , Boundary value analysis, equivalence class testing, decision table based testing, cause effect graphing techniques; structural testing, path

testing, cyclomatic complexity, mutation testing, levels of testing, unit testing, integration testing, system testing, validation testing

(18Hrs)

Books for Study:

1. Software Engineering (Third Edition), K KAggarwal, Yogesh Singh, New age International Publication (For Module 1,2,4 and case study of Module 3)
2. An integrated approach to software Engineering (Second Edition), PankajJalote, Narosa Publishing House - (For Module 3).
3. Computer system Architecture – M. Morris Mano - PHI Pvt Limited.

Books for Reference:

1. Fundamentals of Software Engineering Rajib Mall PHI Publication
2. Software Engineering (Seventh edition), Ian Sommerville – Addison Wesley.
3. Software Engineering A practitioner's approach (Sixth Edition), Roger S Pressman-McGraw Hill.
4. Fundamentals of Software Engineering (Second Edition), Carlo Ghezzi, Mehdi Jazayeri, Dino Mandrioli – Pearson Education.

Marks including choice:

Unit	Marks
I	15
II	15
III	15
IV	15