DELHI TECHNOLOGICAL UNIVERSITY
DEPARTMENT OF SOFTWARE ENGINEERING
B.TECH 1st YEAR SYLLABUS

Departmental Core Course

Course Title: Basics of Software Engineering

Course Title	Course Structure			Pre-Requisite
	L	T	P	
Basics of Software Engineering	3	0	2	Nil

Course Objective:
Students of Software Engineering are to work with software in the company. Students should get familiar with the basic knowledge software engineering for developing a product. This course will provide students a sufficient knowledge of software development models, categories of software requirements, criterion for designing an efficient software. Thus, this course will enable students to develop a software according to user requirements using appropriate software development process.

Course Outcome (CO):
After completing their course in Basics of Software Engineering, students will be able to
CO1. Describe the phases of software development life cycle for designing an efficient software.
CO2. Identification of user requirements using various requirements elicitation techniques.
CO3. Describe the procedure of designing software requirement specification for designing software as per user requirements.
CO4. Describe the basics of software design using various techniques.

S.No.	Content	Contact Hours
Unit 1	Introduction: Software, Program, Software Crisis, Software Processes, Software Characteristics, Software Myths, Software basic terminologies.	08
Unit 2	Software life cycle models: Build and Fix, Waterfall, Prototype, Iterative Enhancement, Rapid Application Development, Evolutionary, Prototyping, and Spiral Model. Unified Process: Phases, Iterations, and Workflow. Selection of a Life Cycle Model.	08
Unit 3	Software Requirements Analysis and Specifications: Requirement Engineering, Types of Requirements. Requirement Elicitation: Interview, Brainstorming, Quality Functional Deployment, Use Case Approach.	08
Unit 4	Requirements Analysis: Problem Analysis, Data Flow Diagrams, Data Dictionaries, Entity-	10

	Relationship diagrams, Requirements Documentation, Requirements Validation, Software Requirement and Specifications, Requirements Management, Change Management Form, Structure of SRS, Software Prototyping	
Unit 5	Software Design: Design framework, Conceptual and Technical Design, Trade-off between modularity and software cost, Cohesion and Coupling, Types of Cohesion and Coupling, strategy of design, Structure chart, IEEE standard 1016-1998 for Software Design Description.	08
	Total	42

Books:-

S.No.	Name of Books/Authors/Publisher
1.	Software Engineering, K. K. Aggarwal and Yogesh Singh, New Age International Private Limited; Fourth edition.
2.	Software Engineering – A practitioner's approach, R. S. Pressman, 6th ed., McGraw Hill Int. Ed.
3.	Software Engineering Concepts, Richard Fairley, McGraw Hill Education.
4.	An Integrated Approach to Software Engineering, Pankaj Jalote, Narosa.
5.	Software Engineering, Ian Sommerville, Pearson Education; Tenth edition.