SCHEME OF COURSE WORK

Department of Information Technology

Course Details:

Course Title	***Software Engineering***
Course Code	**: *13CT1119***
Program:	**: B.TECH**
Specialization:	**Information Technology**
Semester	**: V**
Prerequisites	NIL

Courses to which it is a prerequisite: Software Project Management, Software Testing Methodologies.

Course Outcomes (COs):

CO No.	Course outcomes
CO1	Explain Software process models
CO2	Differentiate functional and non functional requirements
CO3	Discuss system models
CO4	Explain testing strategies
CO5	Discuss risk management and quality management techniques

Course Outcome versus **Program Outcomes:**

Course outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	S	S	S	S	M	M	M				S
CO2	S	S	S	S	M	M	M				
CO3	S	S	S	S	M	M	M				
CO4	S	S	S	S	M	M					
CO5	S	S	S	S	M	M	M				

Assessment Methods: Assignment / Quiz / Seminar / Case Study / Mid-Test /

Teaching-Learning and Evaluation

Week	TOPIC / CONTENTS	Course Outcomes	Sample questions	TEACHING-LEARNING STRATEGY	Assessment Method & Schedule
1	INTRODUCTION TO SOFTWARE ENGINEERING: Software, The Nature of Software, Software Engineering, The Software Process, Software Engineering practice, Software Myths, A Generic Process Model, Process Assessment and Improvement, Product and Process, CMMI.	CO-1	1. Define software engineering 2. Define software	▫ Lecture / Discussion	Assignment (Week 7-8) Mid-Test 1 (Week 9) Quiz-1
2	PROCESS MODELS: Prescriptive Process Models- The Waterfall Model, Incremental Process Models, Evolutionary Process Models, Concurrent Models.	CO-1	1. Differentiate PSP & TSP 2. List the stages of CMMI	▫ Lecture / Discussion	Mid-Test 1 (Week 9)Quiz-1
3	Specialized Process Models.The Unified Process, Personal and Team Process Models.	CO-1	1.What are team process models	▫	Mid-Test 1 Quiz-1 (Week 9)
4	SOFTWARE REQUIREMENTS: Functional and Non-functional Requirements, User Requirements, Interface Specification, the Software requirements document.	CO-2	1. Differentiate functional and non functional requirements 2. What is unified process?	▫ Lecture / Discussion	Mid-Test 1 (Week 9) Quiz-1
5	SOFTWARE REQUIREMENTS: Functional and Non-functional Requirements, User Requirements, Interface Specification, the Software requirements document.	CO-2	1. List some non functional requirements 2. What is SRS? 3. What are incremental process models?	▫ Lecture / Discussion	Assignment (Week 7-8) Mid-Test 1 (Week 9) Quiz-1
6	DESIGN ENGINEERING: The Design Process, Design Concepts, the Design Model.	CO-3	1. What is technical feasibility 2. Define requirements elicitation	▫ Lecture / Discussion	Assignment (Week 7-8) Mid-Test 1 (Week 9) Quiz-1
7	ARCHITECTURAL DESIGN: Software Architecture, Architectural Genres, Architectural Styles,	CO-3	1. Differentiate verification and validation 2. List some behavioral models	▫ Lecture / Discussion	Mid-Test 1 (Week 9) Quiz-1
8	Architectural Design, Architectural	CO-3	1. What are structured	▫ Lecture /	Assignment

	Mapping using Data Flow.		methods?	Discussio n	(Week 7-8) Mid-Test 1 (Week 9) Quiz-1
9	**Mid-Test 1**				
10	SYSTEM MODELS: Context Models, Behavioral Models, Data Models, Object Models, Structured Methods..	CO-3	1. What is data model	▫ Lecture / Discussio n	Mid-Test 2 (Week 18) Quiz-2
11	OBJECT ORIENTED DESIGN: Objects and Object Classes, an Object Oriented Design Process, Design Evolution	CO-3	1. What is an object and a class?	▫ Lecture / Discussio n	Mid-Test 2 (Week 18) Quiz-2
12	USER-INTERFACE DESIGN: The Golden Rules, User Interface Analysis and Design, Interface Analysis, Interface Design Steps, Design Evaluation	CO-4	1. What is an interface	▫ Lecture / Discussio n	Mid-Test 2 (Week 18) Quiz-2
13	SOFTWARE TESTING STRATEGIES: A Strategic Approach to Software Testing, Test Strategies for Conventional Software and Object Oriented Software, Validation Testing, White- Box Testing, Basis Path Testing, Black-Box Testing, System Testing.)	CO-4	1. Define testing 2. Define system testing	▫ Lecture / Discussio n	Assignment (Week 15-17) Mid-Test 2 (Week 18) Quiz-2
14	PRODUCT METRICS: A Framework for Product Metrics, Metrics for Requirements Model, Metrics for Design Model, Metrics for Source Code, Metrics for Testing, Metrics for Maintenance.	CO-4	1. What is a metric? 2. define validation testing	▫ Lecture / Discussio n	Mid-Test 2 (Week 18) Quiz-2
15	PROCESS AND PROJECT METRICS: Software Measurement, Metrics for Software Quality.	CO-4	1. List out project metrics	Lecture / Discussio n	Mid-Test 2 (Week 18) Quiz-2
16	RISK MANAGEMENT: Reactive versus Proactive Risk Strategies, Software Risks, Risk Identification, Risk Projection	CO-5	1. what is a risk	▫ Lecture / Discussio n	Assignment (Week 15-17) Mid-Test 2 (Week 18) Quiz-2
17	Risk Refinement, RMMM, RMMM Plan. QUALITY	CO-5	1. define RMMM	▫ Lecture / Discussio n	Assignment (Week 15-17) Mid-Test 2 (Week 18) Quiz-2
18	**Mid-Test 2**				
19/20	**END EXAM**				