SCHEME OF COURSE WORK

Department of Information Technology

Course Details:

COURSE TITLE	**SOFTWARE TESTING**		
COURSE CODE	**15CT1120**	**L T P C**	**3 0 0 3**
PROGRAMME	**B.TECH**		
SPECIALIZATION	**Common for CSE & IT**		
SEMESTER	**V**		
PRE REQUISITES	**Software Engineering**		
COURSES TO WHICH IT IS A PRE REQUISITE	**Software Project Management, Software Testing Lab**		

Course Outcomes (COs):

1	Build the software testing process
2	Analyze the seven step software testing process.
3	Design a test plan.
4	Analyze and report test results.
5	Test acceptance and operational testing.

Program Outcomes (POs):

A graduate of mechanical engineering will be able to

1	Ability to plan and execute software project modules, testing and delivery mechanisms.
2	Ability to use industry ready modern technologies through advanced data structures, expertise in web technologies.
3	Ability to think critically on the software related issues to provide viable solutions.
4	Ability to solve software related problems effectively and efficiently.
5	Ability to conduct research on up-coming fields of software development and to innovate into new Directions.
6	Ability to manage a software team and to maintain financial records as per standards.
7	Ability to effectively communicate with clients, peers and society at large.
8	Ability to take up lifelong learning to be in tune with the new software related technologies.
9	Ability to follow ethical practices in the software industry and accept social responsibility.
10	Ability to learn independently from mistakes and surge forwards with positive attitude.
11	Understand engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects.
12	Recognize the need for updating the knowledge in the chosen field and imbibing learning to learn skills.

Programme Specific Outcomes

PSO1: Plan, develop, implement and evaluate IT solutions to specific business problems using specific programming language and software tools.

PSO2: Design and Develop Network, Mobile and Web-based Computational systems under realistic constraints.

PSO3: Design and implement fundamental network security solutions.

Course Outcome versus **Programme Outcomes** versus **Programme Specific Outcomes:**

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	2	2	3			1					2	2	1	1
CO2	3	2	3	2	2					1			2	1	1
CO3	2	3	3	2				1					2	1	1
CO4	2	3	3	3							1		2	1	1
CO5		2	3	3							2		2	1	1

S - Strongly correlated, *M - Moderately* correlated, *Blank - No correlation*

Assessment Methods	Assignment / Quiz / Seminar / Case Study /Mid-Test / End Exam

Teaching- Learning & Evaluation

Week	Topic/ Contents	Course Outcomes	Sample questions	Teaching learning strategy	Assessment method & schedule
1	CREATING AN ENVIRONMENT SUPPORTIVE OF SOFTWARE TESTING: Minimizing Risks, Writing a Policy for Software Testing,	CO-1	1.What is Software Testing. 2.How to create an environment supportive for Software testing.	□Lecture □Chalk and Talk	Assignment (Week 1 - 8) Mid-Test 1 Quiz-1 (Week-9)

	Economics of Testing.				
2	Building a structured Approach to Software Testing and Developing a Test Strategy	CO-1	1.How to develop a testing strategy.	□Lecture □Chalk and Talk	Assignment (Week 1 - 8) Mid-Test 1 Quiz-1 (Week-9)
3	BUILDING THE SOFTWARE TESTING PROCESS: Software Testing Guidelines, Workbench Concept.	CO-1	1.What are the Testing guidelines. 2.Explain the concept of Work becnch.	□Lecture □Chalk and Talk	Assignment (Week 1 - 8) Mid-Test 1 Quiz-1 (Week-9)
4	Customizing the Software Testing process, Process Preparation Checklist.	CO-1	1.List out the checklist for performing testing. 2.How can we customize software.	□Lecture □Chalk and Talk	Assignment (Week 1 - 8) Mid-Test 1 Quiz-1 (Week-9)
5	OVERVIEW OF THE SOFTWARE TESTING PROCESS: Advantages of Following Process.	CO-2	1.Discuss the software testing process. 2.Explain the advantages of software process.	□Lecture □Chalk and Talk	Mid-Test 1 Quiz-1 (Week 9)
6	The Cost of Computer testing, The Seven-Step Software Testing Process, Workbench Skills.	CO-2	1.Explain the Seven step process of software testing process.	□Lecture □Chalk and Talk	Assignment (Week 1 - 8) Mid-Test 1 Quiz-1 (Week-9)
7	STEP 1: ORGANIZING FOR TESTING: Objective, Workbench, Input, Do Procedures (Task 1-5),	CO-2	1, What is the main objective of organizing for testing.	□Lecture □Chalk and Talk	Assignment (Week 1 - 8) Mid-Test 1 Quiz-1 (Week9)
8	STEP 2: DEVELOPING	CO-3	1.Explain different concerns of Test plan.	□Lecture	Assignment

	THE TEST PLAN: Overview, Objective, Concerns, Workbench, Input, Do Procedures (Task 1-6), Check Procedures, Output, and Guidelines.			□Chalk and Talk	(Week 1 - 8) Mid-Test 1 Quiz-1 (Week-9)
9	Mid Test 1				
10	STEP 3: VERIFICATION TESTING: Overview, Objective, Concerns, Workbench, Input, Do Procedures (Task 1-3), check Procedures, Output, and Guidelines.	CO-3	1.What is the need of verification of a software. 2.Describe the task procedures for verification testing.	□Lecture □Chalk and Talk	Assignment 2 (Week10-17) Mid-Test 2 Quiz-2 (Week 18)
11	STEP 4: VALIDATION TESTING: Overview, Objective, Concerns, Workbench, Input, Do procedures (Task 1-3)	CO-4	1.Explain validation testing. 2.Explain the procedure for validation testing.	□Lecture □Chalk and Talk	Assignment 2 (Week10-17) Mid-Test 2 Quiz-2 (Week 18)
12	Check Procedures, Output, Guidelines.	CO-4	1.Describe the guidelines followed for validation testing.	□Lecture □Chalk and Talk	Assignment 2 (Week10-17) Mid-Test 2 Quiz-2 (Week 18)
13	ANALYZING AND REPORTING TEST RESULTS: Overview, Concerns, Workbench, Input, Do Procedures (Task 1-3)	CO-4	1. Explain the procedure for reporting test results.	□Lecture □Chalk and Talk	Assignment 2 (Week10-17) Mid-Test 2 Quiz-2 (Week 18)

14	Check Procedures, Output, and Guidelines.	CO-4	1.Describe the guidelines followed for reporting test results.	□Lecture □Chalk and Talk	Assignment 2 (Week10-17) Mid-Test 2 Quiz-2 (Week 18)
15	STEP 6: ACCEPTANCE AND OPERATIONAL TESTING: Overview, Objective, Concerns, Workbench, Input, DO Procedures (Task 1-3), Check Procedures, Output, and Guidelines.	CO-5	1.Explain operational testing.	□□Lecture □□Seminar	Assignment 2 (Week10-17) Mid-Test 2 Quiz-2 (Week 18)
16	STEP 7: POST IMPLEMENTATION ANALYSIS: Overview, Concerns, Workbench, Input, DO Procedures (Task 1-7)	CO-5	1.Explain the procedure operational testing.	□Lecture □Chalk and Talk	Seminar (Week10-17) Mid-Test 2 Quiz-2 (Week 18)
17	Check Procedures, Output, and Guidelines	CO-5	1.Describe the guidelines followed for operational testing.	□Lecture □Chalk and Talk	Assignment 2 (Week10-17) Mid-Test 2 Quiz-2 (Week 18)
18	Mid-Test 2				
19/20	END EXAM				