

**SWARNANDHRA
COLLEGE OF ENGINEERING AND TECHNOLOGY
(AUTONOMOUS)**

SEETHARAMPURAM, NARSAPUR-534280, WG- DT, AP

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

TEACHING PLAN

Course Code	Course Title	Year/Sem	Branch	Contact Hrs/Week	Academic Year	Commencement of Class work
20MC4TE4	Software Testing Methodologies	II/IV	MCA	6	2024-2025	06.01.2025

COURSE OUTCOMES (CO): Students are able to

1. Identify and understand various software testing problems, apply software testing knowledge and engineering methods and solve these problems by designing and selecting software test models, criteria, strategies, and methods. [K4]
2. Design and conduct a software test process for a software project. [K3]
3. Analyze the needs of software test automation. [K3]
4. Use various communication methods and skills to communicate with their teammates to conduct their practice-oriented software testing projects. [K2]
5. Write test cases for given software to test it before delivery to the customer and write test scripts for both desktop and web-based applications. [K4]

UNIT	Out Comes / Bloom's Level	Topics No.	Topics/Activity	Text Book / Reference	Contact Hour	Delivery Method
I	CO1: Identify and understand various software testing problems, apply software	Unit - I				
		1.1	Software Testing: Introduction	T1	1	Chalk & Board, PPT
		1.2	Evolution	T1	1	
		1.3	Myths and Facts	T1	1	
		1.4	Goals	T1	1	
		1.5	Psychology	T1	1	
		1.6	Definition	T1	1	
		1.7	Model for Testing	T1	1	
		1.8	Effective Vs Exhaustive Software Testing	T1	1	

testing [K4]	1.9	Software Testing Terminology and Methodology: Software Testing Terminology	T1	1	
	1.10	Software Testing Life Cycle	T1	1	
	1.11	Software Testing Methodology	T1	1	
	1.12	Verification & Validation: Verification & Validation activities	T1	1	
	1.13	Verification	T1	1	
	1.14	Verification of Requirements	T1	1	
	1.15	High level & Low-level designs	T1	1	
	1.16	Verifying code	T1	1	
	1.17	Validation	T1	1	
Total				17	

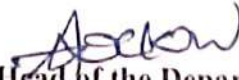
		Total		17		
II	CO2: Design and conduct a software test process for a software project [K3]	Unit - II				
		2.1	Dynamic Testing-Black Box testing techniques: Boundary Value Analysis	T1	1	Chalk Board & Talk, PPT, Demonstration
		2.2	Equivalence Class Testing	T1	1	
		2.3	State Table Based Testing	T1	1	
		2.4	Decision Table Based Testing	T1	1	
		2.5	Cause-Effect Graphing based Testing	T1	1	
		2.6	Error Guessing	T1	1	
		2.7	White-Box testing: Need	T1	1	
		2.8	Logic Coverage Criteria	T1	1	
		2.9	Basis Path Testing	T1	1	
		2.10	Graph Matrices	T1	1	
		2.11	Loop Testing	T1	1	
		2.12	Data Flow Testing	T1	1	
		2.13	Mutation Testing	T1	1	

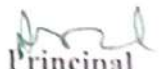
		Total	13		
III	CO3: Analyze the needs of software test automation [K3]	Unit - III			
		3.1	Static Testing: Inspections	T1	1
		3.2	Structured Walkthroughs	T1	1
		3.3	Technical Reviews	T1	1
		3.4	Validation activities: Unit Testing	T1	1
		3.5	Integration Testing	T1	1
		3.6	Function Testing	T1	1
		3.7	System Testing	T1	1
		3.8	Acceptance Testing		
		Mid I Exam			
		3.9	Regression testing: Progressives Vs. Regression testing	T1	1
		3.10	Regression Testability	T1	1
	3.11	Objectives of	T1	1	
		Chalk & Board, Talk, PPT, Demonstration			

		Regression Testing			
	3.12	Regression Testing types	T1	1	
	3.13	Regression Testing Techniques	T1	1	
		Total		13	
IV	CO4: Use various communication methods and skills to communicate with their teammates to conduct their practice-oriented software testing projects [K2]	Unit - IV			
		4.1	Efficient Test Suite Management: Growing nature of Test Suite	T1	1
		4.2	Minimizing Test Suites and its benefits	T1	1
		4.3	Test Suite Prioritization	T1	1
		4.4	Types of Test case Prioritization	T1	1
		4.5	Prioritization Techniques	T1	1
		4.6	Measuring the Effectiveness of a Prioritized test suite	T1	1
		4.7	Software Quality Management: Software Quality Metrics	T1	1
		4.8	SQA Models	T1	1
		4.9	Debugging: Process	T1	1
		4.10	Techniques	T1	1
		4.11	Correcting Bugs	T1	1
		Total		11	
V	CO5: Write test cases for given software to test it before delivery to the customer and write test scripts for both desktop and web-based applications	Unit - V			
		5.1	Automation and Testing Tools: need for automation	T1	1
		5.2	Categorization of testing tools	T1	1
		5.3	Selection of testing tools	T1	1
		5.4	Cost incurred in testing tools	T1	1
		5.5	Guidelines for automation testing.	T1	1
		5.6	Overview of Testing Tools such as Win Runner, Load Runner, JMeter and JUnit	T1	1
		5.7	Test Automation using Selenium tool		
		5.8	Testing Object Oriented Software: Basics	T1	1
		5.9	Object Oriented Testing	T1	1
		5.10	Web based systems: Challenges in testing for web-based software	T1	1

	[K4]					
		5.11	Quality aspects	T1	1	
		5.12	Web Engineering	T1	1	
		5.13	Testing of Web based systems	T1	1	
		5.14	Testing Mobile Systems	T1	1	
Course Beyond Syllabus		Requirements Traceability Matrix – RTM & Project Management Softwares like Wrike, Swift Enterprise, Jira		Web Resources	1	
Total					16	
MID EXAM 2						
TOTAL CLASSES					70	
Text Books:						
S. No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION					
T1	Software Testing, Principles and Practices, Naresh Chauhan, Oxford					
T2	Software Testing, Yogesh Singh, CAMBRIDGE					
Reference Books:						
S. No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION					
R1	Foundations of Software testing, Aditya P Mathur, 2ed, Pearson					
R2	Software testing techniques – BarisBeizer, Dreamtech, second edition.					
R3	Software Testing, Principles, techniques and Tools, M G Limaye, TMH					
R4	Effective Methods for Software testing, Willian E Perry, 3ed, Wiley					
Web Resources						
1	https://www.tutorialspoint.com/software_testing_dictionary/test_tools.html					

A.S.B. Raju
Faculty


Head of the Department


Principal