

SWARNANDHRA

COLLEGE OF ENGINEERING & TECHNOLOGY

(AUTONOMOUS)

Accredited by National Board of Accreditation, AICTE, New Delhi, Accredited by NAAC with "A" Grade – 3.32 CGPA, Recognized under 2(f) & 12(B) of UGC Act 1956, Approved by AICTE, New Delhi, Permanent Affiliation to JNTUK, Kakinada Seetharampuram, W. G. DT., Narsapur-534280, (Andhra Pradesh)

DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

TEACHING PLAN

Course Code	Course Title	Semester	Branches	Contact Periods /Week	Academic Year	Date of commencement of Semester
20CS7002	Software Testing Techniques	VII	ECE & CIVIL	5	2025-26	09-06-2025

COURSE OUTCOMES

CO1.	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.[K1]
CO2.	Design and conduct a software test process for a software project.[K3]
CO3.	Analyze the needs of software test automation.[K4]
CO4.	Use various communication methods and skills to communicate with their teammates to conduct their practice-oriented software testing projects.[K1]
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.[K1]

Both desktop and web based applications.[K1]						
UNIT	Outcomes / Bloom's Level	Topics No.	Topics/Activity	Text Book / Reference	Contact Hour	Delivery Method
Software Testing						
I	CO1. 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.[K1]	1.1	Introduction	T1	1	Chalk and Talk
		1.2	Evolution, Myths & Facts	T1	1	
		1.3	Definition of Goals, Psychology	T1	1	
		1.4	Model for testing	T1	1	
		1.5	Effective Vs Exhaustive Software Testing	T1	1	
		1.6	Software Testing Terminology and Methodology	T1	1	
		1.7	Software Testing Terminology	T1	1	
		1.8	Software Testing Life Cycle	T1	1	
		1.9	Software Testing Methodology	T1	1	
		1.10	Verification and Validation	T1	1	
		1.11	Verification of Requirements	T1	1	
		1.12	High level and low level designs	T1	1	
		1.13	verifying code & Validation	T2	1	
Total					13	
Dynamic Testing & White box Testing						
II		2.1.	Black Box testing techniques	T1	1	Chalk and Talk
		2.2	Boundary Value Analysis	T1	1	
		2.3	Equivalence class Testing	T1	1	
		2.4	State Table based testing	T1	1	



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CO2. Design and conduct a software test process for a software project.[K3]	2.5	Decision table based testing	T1	1
	2.6	Cause-Effect Graphing based testing	T1	1
	2.7	Error guessing	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
	2.22	data flow testing & mutation testing	T1	1
TOTAL				12

Static Testing & Regression Testing

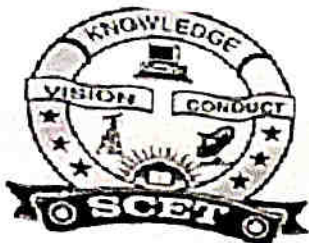
III	CO3. Analyze the needs of software test automation. [K4]	3.1	Inspections	T1	1	Chalk & Talk
		3.2	Structured Walkthroughs	T1	1	
		3.3	Technical Reviews	T1	1	
		3.4	Validation activities	T1	1	
		3.5	Unit testing	T1	1	
		3.6	Integration Testing	T2	1	
		3.7	Function testing	T2	1	
		3.8	System testing	T2	1	
		3.9	Acceptance testing	T2	1	
		3.10	Progressives Vs regressive testing	T1	1	
		3.11	Regression test ability	T1	1	
		3.12	Objectives of regression testing	T2	1	
		3.13	Regression testing types	T1	1	
		3.14	Regression testing techniques	T2	1	
TOTAL				14		

Efficient Test Suite Management

IV	CO4. Use various communication methods and skills to communicate with their teammates to conduct their practice-oriented software testing projects.[K1]	4.1	Growing nature of test suite	T1	1	Chalk & Talk
		4.2	Minimizing the test suite 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	T1	1	
		4.8	Software Quality metrics	T2	1	
		4.9	SQA models	T1	1	
		4.10	Debugging: process	T1	1	
		4.11	Techniques & Correcting bugs	T1	1	
TOTAL				11		

Automation and Testing Tools

V	5.1	Need for automation	T1	1	Chalk &
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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.[K1]

5.2	Categorization of testing tools	T2	1
5.3	Selection of testing tools, Cost incurred	T1	1
5.4	Guidelines for automated testing	T1	1
5.5	Overview of some commercial testing tools such as Win Runner	T1	1
5.6	Load Runner, Jmeter and JUnit	T1	1
5.7	Test Automation using Selenium tool	T1	1
5.8	Object oriented Testing Web based Systems	T2	1
5.9	Challenges in testing for web based software	T1	1
5.10	Quality aspects	T1	1
5.11	Web engineering, testing of web based systems	T1	1

talk

PPT

TOTAL **11**

CUMULATIVE PROPOSED PERIODS **61**

Text Books:


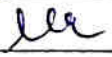


S.No	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION
T1	Naresh Chauhan, Software Testing, Principles and Practices, Second Edition, Oxford-2016
T2	Yogesh Singh, Software Testing, First Edition, CAMBRIDGE -2012

Reference Books:

S.No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION
R1	Aditya P Mathur, Foundations of Software testing, Second edition, Pearson-2013
R2	MG Limaye, Software Testing, Principles, techniques and Tools, First Edition, TMH,-2017
R3	Willian E Perry, Effective Methods for Software testing, Third edition, Wiley-2006

Web Details

https://www.geeksforgeeks.org/software-testing/exhaustive-testing/
https://www.geeksforgeeks.org/software-engineering-black-box-testing/
https://www.tutorialspoint.com/software_testing_dictionary/validation_testing.htm
https://testgrid.io/blog/jmeter-vs-loadrunner/
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	Name	Signature with Date
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ii. Course Coordinator	Dr.G.Sudhakar	
iii. Module Coordinator	Mr V. Subrahmanyam	
iv. Program Coordinator	Dr.B.RamaKrishna	


Principal