

Course Code	Course Title	L	T	P	C
PMCA614L	Software Testing	2	0	0	2
Pre-requisite	NIL	Syllabus version			
		1.0			
Course Objectives:					
1. To understand and analyze the software testing concepts and their techniques.					
2. To create the test cases and apply various automation testing tools.					
Course Outcomes:					
1. Design the test cases with suitable testing methods					
2. Create a test plan and test summary reports					
3. Perform unit, integration and system testing					
4. Test the web-based systems, object-oriented systems, and mobile apps using recent automation testing tools					
Module:1	Fundamentals of Software Testing	4 hours			
Basic Definitions - Identifying Test Cases - Myths and Facts - Software Testing Life Cycle (STLC) - Types of Testing - Testing in the Development Life Cycle - Testing Principles - Verification and Validation - Fault Taxonomies - Levels of Testing					
Module:2	Black Box Testing	6 hours			
Robust and Worst - Case Boundary Value Testing - Special Value Testing - Random Testing - Improved Equivalence Class Partitioning - Edge Testing - State Based Testing - Decision Table Based Testing - Cause-Effect Graph Testing					
Module:3	White Box Testing	4 hours			
Code Coverage Testing - McCabe’s Path Testing - Data Flow based Testing - Object Oriented Complexity Metrics - Specification Based Testing - Slice Testing - Mutation Testing - Graph Matrices					
Module:4	Levels of Testing	5 hours			
Unit Testing - Integration Testing - Decomposition Based Integration - Call Graph Based Integration - Path Based Integration - System Testing - Acceptance Testing - Regression Testing - Object-Oriented Testing - Software Complexity - Model-Based Testing					
Module:5	Static and Performance Testing	3 hours			
Inspections - Structured Walkthroughs - Technical Reviews- Performance Testing - Internationalization Testing - Ad-hoc Testing -Testing OO Systems - Usability and Accessibility Testing - Configuration Testing - Compatibility Testing - Website Testing - Databases and SQL Testing - Domain Testing					
Module:6	Test Management	3 hours			
Test Planning - Test Plan Components - Test Management - Test Process - Reporting Test Results - Building a Testing Group - The Structure of Testing Group -The Technical Training Program					
Module:7	Test Automation	3 hours			
Software Test Automation using Selenium - Scope of Automation - Design and Architecture for Automation - Challenges in Automation - Test Metrics and Measurements - Mobile App Testing - Mobile Test Automation and Tools					

Module:8	Contemporary Issues	2 hours	
Guest Lecture from Industry and R&D Organizations			
	Total Lecture Hours:	30 hours	
Text Book(s)			
1.	Paul C. Jorgensen, "Software Testing: A Craftsman's Approach", 2021, 5 th Edition, Auerbach Publications, Tylor & Francis Group, Boca Raton, Florida, USA.		
2.	Dorothy Graham, "Foundations of Software Testing", 2020, 4 th Edition, Cengage Publication, Learning India Pvt. Ltd, India.		
Reference Books			
1.	Maurício Aniche, "Effective Software Testing; A Developer Guide", 2022, 4 th Edition, Manning Publications, USA.		
Mode of Evaluation: CAT, Written Assignment, Quiz, FAT and Seminar			
Recommended by Board of Studies		04-05-2023	
Approved by Academic Council		No. 70	Date 04-05-2023