Course Code	PCA20D06J	Course Name	SOFTWARE TESTING	Course Category	D	Discipline Elective Course	L	T	P	C
							3	0	2	4

Pre-requisite Courses	Nil	Co-requisite Courses	Nil	Progressive Courses	Nil
Course Offering Department	Computer Applications		Data Book / Codes/Standards	Nil	

Course Learning Rationale (CLR):	The purpose of learning this course is to,	Learning	Program Learning Outcomes (PLO)

		1	2	3
		Level of Thinking (Bloom)	Expected Proficiency (%)	Expected Attainment (%)
CLR-1 :	*Familiarize the fundamentals of software testing fundamentals*			
CLR-2 :	*Understand the various techniques of White box and Black box Testing*			
CLR-3 :	*Examine basic methodologies of Levels of Testing and Various Testing*			
CLR-4 :	*Develop test cases using manual testing*			
CLR-5 :	*Acquire the latest industry knowledge, tools and comply to the latest global standards for Software testing*			

Course Learning Outcomes (CLO):	At the end of this course, learners will be able to:	1	2	3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		Level of Thinking (Bloom)	Expected Proficiency (%)	Expected Attainment (%)	Disciplinary Knowledge	Critical Thinking	Problem Solving	Analytical Reasoning	Research Skills	Team Work	Scientific Reasoning	Reflective Thinking	Self-Directed Learning	Multicultural Competence	Ethical Reasoning	Community Engagement	ICT Skills	Leadership Skills	Life Long Learning
CLO-1 :	*To impart knowledge on the fundamentals of software testing and Quality assurance*	2	85	80	H	H	H	H	H	-	-	M	M	L	-	H	-	-	-
CLO-2 :	*To provide a complete, comprehensive coverage of various software testing methods*	3	85	80	L	H	H	H	H	-	-	M	M	L	-	H	-	-	-
CLO-3 :	*To develop test cases using manual testing*	3	85	80	L	H	H	H	H	-	-	M	M	L	-	H	-	-	-
CLO-4 :	*To enable the learner to become a Software Tester / Quality Assurance Member*	3	85	80	L	H	H	H	H	-	-	M	M	L	-	H	-	-	-
CLO-5 :	*To enable the learner to practice Automation testing Tool Selenium*	3	85	80	L	H	H	H	H	-	-	M	M	L	-	H	-	-	-

Duration (hour)		15	15	15	15	15
S-1	SLO-1	*Testing Fundamentals*	*Testing Methodologies*	*Unit testing*	*Automated Testing and Test Tools*	*Introduction to Selenium*
	SLO-2	*The Psychology of Testing*	*White box Vs Black box*	*Examples*	*Examples of various test tools.*	*Selenium Open source tool*
S-2	SLO-1	*Software Testing Principles*	*White box testing Techniques*	*Incremental testing*	*Benefits of test tools*	*Things selenium can automate*
	SLO-2	*Explanation*	*Statement coverage-Decision coverage*	*Incremental Vs Non Incremental testing*	*Software Test Automation*	*Things selenium cannot automate*
S-3	SLO-1	*Code Inspections*	*Condition coverage-Decision-condition coverage*	*Top-down testing*	*Bug Bashes*	*Browsers supported by Selenium*
	SLO-2	*An Error checklist for Inspections*	*Examples*	*Bottom-up testing*	*Beta Testing*	*OS supported by Selenium*
S-4 to S-5	**SLO-1**	***Lab 1: Test Case Design for Arithmetic Calculations***	***Lab 4:Preparation of Test Case Report on Binary Search Program***	***Lab 7: Develop a Employee salary Processing application and Prepare Test Case Report***	***Lab 10: Software Test Automation using testing tool***	***Lab 13: Basic Operation of Selenium Testing tool***
S - 6	SLO-1	*Walkthroughs*	*Multiple-condition coverage*	*System testing*	*Alpha testing Vs Beta testing*	*Programming language supported by Selenium*

	SLO-2	*Desk Checking-Peer ratings.*	*Explanation of examples*	*Categories*	*Writing and Tracking Test Cases*	*Selenium versions*
S-7	SLO-1	*Definition of bug*	*Black box testing techniques*	*Facility-Volume-Stress*	*Test Case Planning Overview*	*History of Selenium – Selenium Core*
	SLO-2	*Reasons for bug occurrence*	*Advantages , Drawbacks*	*Usability-Security*	*goals*	*Selenium Grid – Selenium RC*
S-8	SLO-1	*Cost of bugs*	*Equivalence Partitioning*	*Performance-Storage*	*Bug's Life cycle*	*Selenium Components*
	SLO-2	*Graph Explanation*	*Examples*	*Configuration-Compatibility*	*Explanation with diagram.*	*Selenium Toolset*
S-9 to S-10	**SLO-1**	***Lab 2: Test Case Report for Sorting of n number .***	***Lab 5: Develop a Login Form and Prepare Test Case Report***	***Lab 8: Develop a Flight Reservation application and Prepare Test Case Report***	***Lab 11: Writing and Tracking Test Cases***	***Lab 14:Working with Selenium Components***
S-11	SLO-1	*Role of a software tester*	*Boundary-value analysis*	*Installability,Reliability*	*Bug Tracking System*	*Locators*
	SLO-2	*Software tester traits-*	*Examples*	*Recovery-Serviceability*	*Case study*	*Locators Strategies*
S-12	SLO-1	*Software Development life cycle models*	*Cause-effect graphing*	*Web Site Testing*	*Software Quality Assurance*	*Add ons*
	SLO-2	*Explanation with diagrams*	*Examples*	*Explanation With Example*	*ISO Standards*	*Examples*
S-13	SLO-1	*Testing axioms*	*Error guessing.*	*Testing for Software Security.*	*Test case Design*	*Unit testing Frameworks*
	SLO-2	*Software testing terms and definitions*	*Explanation of examples*	*Explanation With Example*	*Case study*	*Case study:TestNG Unit Testing Frameworks*
S 14-S 15	**SLO-1**	***Lab 3: Preparation of Test Case Report on Triangle Program***	***Lab 6: Develop a Student Mark sheet application and Conducting Testing***	***Lab 9: Web site Testing***	***Lab 12: Bug Tracking System***	***Lab 15:Selenium Web driver Handling***

Learning Resources	1. *Glenford J. Myers (2008), The Art of Software Testing - John Wiley &Sons, Second Edition, New Delhi.(For Units 1,2,3)* 2. *Ron Patton (2007), Software Testing – Pearson Education, Second Edition, New Delhi (For Units 1,3,4)* 3. *Arun Motoori(2019),Selenium - A Brief Overview , ebook. (For Unit 5)*	4. *. William E Perry (2000), Effective Methods for Software Testing, John Wiley & Sons, Second Edition, New York.* 5. *2.Boris Beizer (1995), Black-Box Testing: -Techniques for Functional Testing of Software and Systems, John Wiley & Sons, New York*

Learning Assessment											
Level	Bloom's Level of Thinking	Continuous Learning Assessment (50% weightage)								Final Examination (50% weightage)	
		CLA – 1 (10%)		CLA – 2 (10%)		CLA – 3 (20%)		CLA – 4 (10%) #			
		Theory	Practice	Theory	Practice	Theory	Practice	Theory	Practice	Theory	Practice
Level 1	Remember	20%	20%	15%	15%	15%	15%	15%	15%	15%	15%
	Understand										
Level 2	Apply	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
	Analyze										
Level 3	Evaluate	10%	10%	15%	15%	15%	15%	15%	15%	15%	15%
	Create										
	Total	100 %		100 %		100 %		100 %		100 %	

CLA – 4 can be from any combination of these: Assignments, Seminars, Tech Talks, Mini-Projects, Case-Studies, Self-Study, MOOCs, Certifications, Conf. Paper etc.,

Course Designers		
Experts from Industry	Experts from Higher Technical Institutions	Internal Experts
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