

Program : Diploma in Computer Engineering / Computer Hardware Engineering / Information Technology / Robotic Process Automation	
Course Code : 6139C	Course Title: Software Testing Lab
Semester : 6	Credits: 1.5
Course Category: Program Elective	
Periods per week: 3 (L:0 T:0 P:3)	Periods per semester: 45

Course Objectives:

- Provide hands-on experience in Software testing.
- Acquires skill to test desktop and web-based applications.

Course Prerequisites:

Topic	Course code	Course name	Semester
Software Engineering		Project Management and Software Engineering	5

<course code> *Software Testing should be registered along with this*

Course Outcomes :

On completion of the course, the student will be able to:

CO _n	Description	Duration (Hours)	Cognitive Level
CO1	Illustrate Software Testing Life Cycles Concepts	3	Understanding
CO2	Develop test scenarios, test cases and test data in the test design phase of STLC.	11	Applying
CO3	Apply the concepts of Test execution and status reporting	9	Applying
CO4	Apply the concepts of test execution using Selenium in a small web application	19	Applying
	Lab Exam	3	

CO-PO Mapping

Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	2						
CO2	3	3					
CO3	3	3					
CO4	3	3		3			

3-Strongly mapped, 2-Moderately mapped, 1-Weakly mapped

Course Outline

Module Outcomes	Name of Experiment	Duration (Hours)	Cognitive Level
CO1	Illustrate Software Testing Life Cycle Concepts.		
M1.01	Understand the structure and content of Test plan document	3	Understanding
CO2	Develop test scenarios, test cases and test data in the test design phase of STLC.		
M2.01	Develop test scenarios from SRS document	2	Applying
M2.03	Develop test cases from SRS document and test scenarios	6	Applying
M2.04	Prepare test data based on the SRS and available test cases	3	Applying
	Lab Exam – I	1.5	
CO3	Apply the concepts of Test execution and status reporting.		
M3.01	Manually execute the prepared test cases and update the status	3	Applying
M3.02	Find bugs by executing test cases and log them using a defect management tool (Jira/Bugzilla or any other test management tools can be used).	3	Applying
M3.03	Prepare Requirement traceability matrix from SRS, test cases and defects logged.	3	Applying
CO4	Apply the concepts of test execution using Selenium in a small web application.		

M4.01	Familiarize basic browser navigation commands.	3	Understanding
M4.02	Identify unique web elements in a web page	4	Applying
M4.03	Setup the architecture to use test case sheet and data sheet and test the web application	6	Applying
M4.04	**Open Ended Experiments	6	Applying
	Lab Exam – II	1.5	

**** - Suggested Open Ended Experiments**

(Not for End Semester Examination but compulsory to be included in Continuous Internal Evaluation. Students can do open-ended experiments as a group of 2-3. There is no duplication in experiments between groups. Open ended experiments should include the concepts of manual and automated testing. Students can utilize their Minor Project done in their Fourth Semester here for practice and Final project for Open ended Experiments.)

- 1) Test a simple software application with the following steps. Given SRS of the application
 - Develop test scenarios
 - Develop test cases
 - Preparation of Test data
 - Manage testcases and test data using a test management tool
 - Execute test cases and update the status
 - Bug reporting using test/defect management tool
 - Prepare bug reports based on Criticality.
 - Prepare Requirement traceability matrix

- 2) Automate a simple software application using Selenium with the following steps. Given SRS of the application
 - Develop test cases
 - Preparation of Test data
 - Identify unique web elements in the web page
 - Interaction with web elements
 - Prepare the architecture to use test case sheet and data sheet
 - Execute test cases and update the status
 - Bug reporting using test/defect management tool
 - Prepare bug reports based on Criticality.
 - Prepare Requirement traceability matrix

Text / Reference

T/R	Book Title/Author
T1	Naresh Chouhan, <i>Software Testing Principles and Practices</i> , Pearson, Second Edition
R1	Roger S Pressman, <i>Software Engineering a practitioner's approach</i> – McGraw Hill , Seventh Edition
R2	Rajeev Gupta, <i>Selenium WebDriver</i> , 1e
R3	Unmesh Gundecha and Satya Avasarala, <i>Selenium WebDriver 3 Practical Guide: End-to-end automation testing for web and mobile browsers with Selenium WebDriver</i> , 2nd Edition

Online Resources

Sl.No	Website Link
1	https://www.softwaretestinghelp.com/free-online-software-testing-qa-training-course/
2	https://www.atlassian.com/software/jira
3	https://www.bugzilla.org/
4	https://www.guru99.com/selenium-tutorial.html