


**Government of Karnataka**  
**Department of Technical Education**  
**Bengaluru**

	Course Title: Software Testing Lab		
	Scheme (L:T:P) : <b>0:2:4</b>	Total Contact Hours: <b>78</b>	Course Code: <b>15CS64P</b>
	Type of Course: <b>Tutorial and Practical's</b>	Credit : <b>03</b>	Core/ Elective: <b>Core</b>
CIE- 25 Marks		SEE- 50 Marks	

### Prerequisites

Knowledge about basic JAVA and PHP.

### Course Objectives

1. To discuss the distinctions between validation testing and defect testing.
2. To describe the principles of system and component testing .
3. To describe strategies for generating system test cases.
4. To understand the essential characteristics of tool used for test automation.

### Course Outcome

*On successful completion of the course, the students will be able to attain CO:*

Course Outcome		Experiment linked	CL	Linked PO	Teaching Hrs
CO1	Understanding Selenium tool to perform testing	<i>1 to 4</i>	<i>U,A</i>	1 to 10	<b>24</b>
CO2	Writing test suits for applications.	<i>5 to 8</i>	<i>A</i>	1 to 10	<b>21</b>
CO3	Construct and test simple programs.	<i>9 to 13</i>	<i>A</i>	1 to 10	<b>21</b>
CO4	Understanding the use of bug tracking and testing tool Bugzilla, Jira	<i>14</i>	<i>A</i>	1 to 10	<b>12</b>
				<b>Total</b>	<b>78</b>

**Legends:** R = Remember U= Understand; A= Apply and above levels (Bloom's revised taxonomy)

### Course-PO Attainment Matrix

Course	Programme Outcomes									
	1	2	3	4	5	6	7	8	9	10
<b>Software Testing lab</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>

Level 3- Highly Addressed, Level 2-Moderately Addressed, Level 1-Low Addressed.

Method is to relate the level of PO with the number of hours devoted to the COs which address the given PO.

If  $\geq 40\%$  of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 3

If 25 to 40% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 2

If 5 to 25% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 1

If  $< 5\%$  of classroom sessions addressing a particular PO, it is considered that PO is considered not-addressed.

## List of Graded Practical Exercises

Sl.No	Practical/Exercise
1	Understand The Automation Testing Approach (Theory Concept).
2	Using Selenium IDE, Write a test suite containing minimum 4 test cases.
3	Understanding Test Automation. Using Selenium write a simple test script to validate each field of the registration page ( Eg: Facebook Registration Page)
4	Install Selenium server and demonstrate it using a script in Java/PHP.
5	Conduct a test suite for any two web sites.
6	Write and test a program to login a specific web page.
7	Write test cases to validate a mobile number using one time pin identification(OTP)
8	Write and Test a program to find out list of employees having salary greater than Rs 50,000 and age between 30 to 40 years.
9	Write and test a program to update 10 student records into table into Excel file.
10	Write and test a program to select the number of students who have scored more than 60 in any one subject (or all subjects).
11	Write and test a program to provide total number of objects present / available on the page.
12	Write and test a program to get the number of list items in a list / combo box.
13	Write and test a program to count number of items present on a desktop.
14	Understanding the use of bug tracking and testing tool Bugzilla and Jira
15	Open ended Experiment: Mini Project – Not for exam but to compulsory to be included in Record. (Test cases for Admission form, Shopping cart, Travel Booking, Hotel Booking, Utility Bill Payment..)

## Reference

1. Testing in 30+ Open Source Tools, Rahul Shende, Shroff Publishers & Distributor Pvt. Ltd, ISBN 13: 9789350231005 ( page numbers from 15 to 117 )
2. <http://seleniumhq.org/>
3. <http://sourceforge.net/projects/sahi/>
4. <http://testng.org/doc/index.html>

## Suggested list of student activities

*Note: the following activities or similar activities for assessing CIE (IA) for 5 marks (Any one)*

1. Each student should conduct different activity and no repeating should occur.

1.	Demonstrate any one open source tool for software other than that used in lab exercises
2.	Prepare test cases for any software application.
3.	Quiz

## Course Delivery

The course will be delivered through Demonstration and Practices

## Course Assessment and Evaluation Scheme

Method	What	To whom	When/Where (Frequency in the course)	Max Marks	Evidence collected	Course outcomes	
Direct Assessment	CIE (Continuous Internal Evaluation)	IA	Students	Two tests (average of two tests)	10	Blue books	1,2,3,4
				Record	10	Record	1,2,3,4
				Student activity.	05	Report.	
				<b>Total</b>	<b>25</b>		
	SEE (Semester End Examination)	End Exam		<b>End of the course</b>	<b>50</b>	Answer scripts at BTE	1,2,3,4
Indirect Assessment	Student Feedback on course		Students	Middle of the course		Feedback forms	1,2,3 Delivery of course
	End of Course Survey			End of the course		Questionnaires	1,2,3, & 4 Effectiveness of Delivery of instructions & Assessment Methods

\*CIE – Continuous Internal Evaluation

\*SEE – Semester End Examination

**Note:**

1. I.A. test shall be conducted as per SEE scheme of valuation. However obtained marks shall be reduced to 10 marks. Average marks of two tests shall be rounded off to the next higher digit.
2. Rubrics to be devised appropriately by the concerned faculty to assess Student activities.

**Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:**

Sl. No	Bloom's Category	%
1	Remembrance	10
2	Understanding	20
3	Application	70

**Note to IA verifier: The following documents to be verified by CIE verifier at the end of semester**

1. Blue books (10 marks)
2. Record (10 marks)
3. Student suggested activities report for 5 marks
4. Student feedback on course regarding Effectiveness of Delivery of instructions & Assessment Methods.

## Format for Student Activity Assessment

DIMENSION	Unsatisfactory 1	Developing 2	Satisfactory 3	Good 4	Exemplary 5	Score
<b>Collection of data</b>	Does not collect any information relating to the topic	Collects very limited information; some relate to the topic	Collects some basic information; refer to the topic	Collects relevant information; concerned to the topic	Collects a great deal of information; all refer to the topic	3
<b>Fulfill team's roles &amp; duties</b>	Does not perform any duties assigned to the team role	Performs very little duties	Performs nearly all duties	Performs all duties	Performs all duties of assigned team roles with presentation	4
<b>Shares work equally</b>	Always relies on others to do the work	Rarely does the assigned work; often needs reminding	Usually does the assigned work; rarely needs reminding	Does the assigned job without having to be reminded.	Always does the assigned work without having to be reminded and on given time frame	3
<b>Listen to other Team mates</b>	Is always talking; never allows anyone else to speak	Usually does most of the talking; rarely allows others to speak	Listens, but sometimes talk too much	Listens and contributes to the relevant topic	Listens and contributes precisely to the relevant topic and exhibit leadership qualities	3
<b>TOTAL</b>						<b>13/4=3.25=4</b>

**Note: This is only an example. Appropriate rubrics/criteria may be devised by the concerned Course Coordinator for assessing the given activity**

### Scheme of Valuation for End Examination

SN	Particulars	Marks
1	Writing procedure for two programs	20
2	Execution with results (any one)	20
3	Viva Voce	10
<b>Total</b>		<b>50</b>

*\*\*Evaluation should be based on the screen output only. No hard copy required.*

*\*\*Change of question is allowed only once. Marks of 05 should be deducted in the given question.*

### Resource requirements for Software Testing Lab

(For an Intake of 60 Students [3 Batches])

Sl. No.	Equipment	Quantity
1	Computers	20
2	Internet Connection : Minimum 10 Mbps	Shared for 20
3	Switch – 32 port	01

*\*\*Open Source Software should be encouraged*

### MODEL QUESTION BANK

1	Install Selenium IDE. Write a test suite containing minimum 4 test cases.
2	Understanding Test Automation. Using Selenium write a simple test script to validate each field of the registration page ( Eg: Facebook Registration Page)
3	Install Selenium server and demonstrate it using a script in Java/PHP.
4	Conduct a test suite for any two web sites.
5	Write and test a program to login a specific web page.
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11	Write and test a program to get the number of list items in a list / combo box.
12	Write and test a program to count number of items present on a desktop.
13	Understanding the use of bug tracking and testing tool Bugzilla
14	Understanding the use of bug tracking tool Jira