GANPAT UNIVERSITY

FACULTY OF COMPUTER APPLICATIONS

Programme	Master of Computer Applications	**Branch/Spec.**	Computer Application
Semester	II	**Version**	1.0.0.0
Effective from Academic Year	2022-23	**Effective for the batch Admitted in**	June 2022
Subject Code	P12A5STA	**Subject Name**	Software Testing Automation

Teaching scheme						**Examination scheme (Marks)**			
(Per week)	**Lecture (DT)**		**Practical (Lab.)**		**Total**		**CE**	**SEE**	**Total**
	L	TU	P	TW					
Credit	2	0	2	0	2	Theory	40	60	100
Hours	2	0	4	0	6	Practical	20	30	50

Objective:

- To learn the fundamentals of web testing tools. To provide a practical hands-on introduction to testing of web applications using freely available tools in the market and which are mostly used.

Pre-requisites:

- Basic knowledge of Software and Web Application.
- Manual Testing Fundamentals.
- Basic knowledge of Java & Python programming.

Course Outcomes :

- **1 = Slight (Low); 2 = Moderate (Medium); 3 = Substantial (High); "-" = No Correlation**

Name of CO	Description
CO1	Explain and differentiate manual and automation testing and identify suitable automation testing tools.
CO2	Install, configure, and use Selenium components to develop and execute basic automated test cases
CO3	Design and implement Selenium WebDriver scripts using Java for dynamic and cross-browser testing.
CO4	Develop and execute Selenium automation scripts using Python using waits, locators, and POM.

Mapping of CO and PO

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	2	2	1	2	-	-	-	2
CO2	2	2	2	3	1	-	-	2
CO3	3	3	2	3	1	-	-	2
CO4	3	3	2	3	1	-	-	3

Content:

Unit	**SECTION – I**	Hrs

1	Overview of Automation Testing: **what is Automation Testing?, difference between manual and automation testing, Familiar with available Automation testing tools like Katalon Studio,** Selenium, Appium, TestComplete, Cypress, Ranorex Studio, Perfecto, LambdaTest, Postman, SoapUI, Apache JMeter, Robot Framework, Protractor **etc.**	7
2	**Overview of Selenium:** Introduction to Selenium, Download & Install Selenium, Download Driver(Java, Python), Selenium Components, **Using Selenium IDE:** Installation, Features, Test Cases, Command, Locators, **Using Selenium Web Driver:** Architecture of selenium Web Driver, Installation, Features, Command, Managing User Interface Controls, Selenium RC, Selenium Grid.	8
	SECTION – II	
3	**Selenium with Java:** Introduction to Java, introduction to JDK & Eclipse IDE, Configure with web driver, Creating First Selenium Web Driver Script, Working with Dynamic UI Objects, Debugging Scripts, Using Functions, Using a Configuration File, Exception handling in Web Driver, Running the test in Eclipse IDE, Reporting in Selenium, Web driver API using Firefox web driver and Chrome web driver.	7
4	**Selenium with Python:** Introduction to Python, Why is Python useful for automation testing?, Installing Python bindings for Selenium, Instructions for Windows users, Drivers, Navigation, Locating Elements by ID, by Name, By XPath, By Class name, Explicit & Implicit Waits, Page object classes, Page element, Locators, Web driver API using Firefox web driver and Chrome web driver.	8

Practical Content:

List of programs specified by the subject teacher based on above mentioned topics.

Text Books:

1	Software Testing-Principles and Practices – By Srinivasan Desikan and Gopalswamy Ramesh, Perason Education 1st Edn 2005.
2	Test Automation Using Selenium with Java; 1.0 edition, Navneesh Garg ,AdactIn Group Pty. Ltd 2014.

Reference Books:

1	Software Testing (A Practical Approach) Rajiv Chopra Mercury Learning and Information Illustrated Edition 2018.
2	https://www.guru99.com/software-testing.html
3	https://selenium-python.readthedocs.io/
4	https://www.guru99.com/selenium-tutorial.html

MOOC/Certification Courses:

1	https://www.edureka.co/selenium-certification-training
2	https://www.udemy.com/topic/selenium-webdriver/
3	https://www.simplilearn.com/selenium-certification-training

Question Paper Scheme:

University Examination Duration: 3 Hours

Note for Examiner: -

(I) Questions 1 and 4 are compulsory with no options.

(II) Internal options should be given in questions 2, 3, 5 and 6.

SECTION – I

Q.1 –8 Marks

Q.2 –11 Marks

Q.3 –11 Marks

SECTION - II

Q.4 –8 Marks

Q.5 –11 Marks

Q.6 –11 Marks