Maharashtra State Board of Technical Education, Mumbai
TEACHING PLAN (TP-TH)/ Course Information Sheet (CIS)

K-1

Academic Year: 2025-26 **Date:** 13/12/2025
Institute Name: K. K. Wagh Polytechnic, Nashik **MSBTE Code:** 0078
Program and Code: Computer Technology (CM) **Course Code &. Abbr.:** 316314 (SFT)
Course Name: Software Testing (SFT) **Name of Faculty:** Mr. G. R. Shinde
Class: TYCM-Win **Semester:** 6th **Scheme:** K **Course Index:** CI603 Learning **Hrs:** 45

• Teaching-Learning & Assessment Scheme:

Course Title	Course Code / Abbr	Course Category	Learning Scheme					Credits	TH Paper Duration (Hrs.)	Assessment Scheme										
			Actual Contact Hrs/Week			SLH	NLH			Theory				Based on LL & TSL Practical				Based on SL		Total Marks
			CL	TL	LL					FA TH	SA TH	Total		FA-PR		SA-PR		SLA		
										Max	Max	Max	Min	Max	Min	Max	Min	Max	Min	
Software Testing	316314/ SFT	DSC	3	-	4	1	8	4	3	30	70	100	40	25	10	--	--	25	10	150

Abbreviations: CL- Class Room Learning , TL- Tutorial Learning, LL-Laboratory Learning, SLH-Self Learning Hours, NLH-Notional Learning Hours, FA - Formative Assessment, SA -Summative assessment, IKS – Indian Knowledge System, SLA - Self Learning Assessment
Legends: @ Internal Assessment, # External Assessment, *# On Line Examination, @$ Internal Online Examination

• Course Outcomes (COs): Theory & Practical

By learning course Software Testing (SFT -316314), the Third Year students will be able to:

CO No.	TLO No.	Course Outcomes (COs) / Theory Learning Outcomes (TLOs)
CO603.1 (CO1)	**Explain various software testing methods**	
	TLO 1.1	Identify errors and bugs in the given program.
	TLO 1.2	Explain the Entry and Exit Criteria for the given test application.
	TLO 1.3	Explain various types of Software Testing methods.
CO603.2 (CO2)	**Prepare test cases for different levels of testing.**	
	TLO 2.1	Apply the concepts of unit testing.
	TLO 2.2	Explain different integration testing strategies.
	TLO 2.3	Apply the principles and methods of system testing.
	TLO 2.4	Explain the purpose and process of acceptance testing.
	TLO 2.5	Apply various special testing techniques.
	TLO 2.6	Prepare test case for the given application.
CO603.3 (CO3)	**Prepare test plan for a given application.**	
	TLO 3.1	Prepare test plan and test cases for the given application.
	TLO 3.2	Apply test infrastructure and people management strategies.
	TLO 3.3	Identify base lining of test plans.
	TLO 3.4	Prepare test report of executed test cases for the given application.
CO603.4 (CO4)	**Create defect report for a given application**	
	TLO 4.1	Classify defects on the basis of estimated impact.
	TLO 4.2	Prepare defect template for the given application.
	TLO 4.3	Explain defect management process on the given application.
CO603.5 (CO5)	**Apply automation testing tools to test software.**	
	TLO 5.1	Identify different testing tools to test the given application.
	TLO 5.2	Improve testing efficiency using automated tool for given application.
	TLO 5.3	Apply testing tool to test the given application.
	TLO 5.4	Describe Metrics and Measurement for the given application.

- **Teaching Plan:**

Unit No. (Allotted Hrs. & Marks)	COs & TLOs	Unit Title with Topic Details/Contents	Plan Dates (From-To & No. of Lectures)	Actual Execution (From-To & No. of Lectures)	Teaching Method/ Media	Remark
01 **(09) & (14)**	CO1 TLO- 1.1 1.2 1.3 1.4 1.5	**Unit-1 Software Testing and Testing Methods** 1.1 Software Testing, Objectives of Testing, Software Requirement Specification (SRS) 1.2 Failure, Error, Fault, Defect, Bug Terminology 1.3 Test Case, Entry and Exit Criteria for Testing	15/12/2025 To 20/12/2025 (03)		Chalk-Board, LCD+PPTs, MKCL ERA, IDE	
		1.4 Methods of Testing: Static & Dynamic Testing 1.5 White Box Testing: Inspections, Walkthroughs, Technical Review, Functional Testing, Code Coverage Testing, Code Complexity Testing	22/12/2025 To 29/12/2025 (04)		Chalk-Board, LCD+PPTs, MKCL ERA, IDE	
		1.6 Black Box Testing: Requirement Based Testing, Boundary Value Analysis and Equivalence Partitioning	01/01/2026 To 03/01/2026 (02)		Chalk-Board, LCD+PPTs, MKCL ERA, IDE	
02. **(12) & (18)**	CO2 TLO- 2.1 2.2 2.3 2.4 2.5	**Unit-2 Types and Levels of Testing** 2.1 Unit Testing: Driver, Stub 2.2 Integration Testing: Top-Down Integration, bottom-Up Integration, Bi-Directional Integration	05/01/2026 To 10/01/2026 (04)		Chalk-Board, LCD+PPTs, MKCL ERA, IDE	
		2.3 System Testing 2.4 Acceptance Testing: Alpha, Beta Testing	12/01/2026 To 17/01/2026 (03)		Chalk-Board, LCD+PPTs, MKCL ERA, IDE	
		2.5 Special Testing: Performance Testing-Load Testing and Stress Testing, Regression Testing, Security Testing, Client-Server Testing, GUI Testing, Database Testing, Sanity and Smoke Testing	19/01/2026 To 24/01/2026 (05)		Chalk-Board, LCD+PPTs, MKCL ERA, IDE	
03. **(09) & (14)**	CO3 TLO- 3.1 3.2 3.3 3.4	**Unit 3 Test Management** 3.1 Test life cycle 3.2 Test Planning: Preparing a Test Plan, Deciding the Test Approach, Setting Up Criteria for Testing, Identifying Responsibilities, Staffing, Resource Requirements, Test Deliverables, Testing Tasks	29/01/2026 To 31/01/2026 (02)		Chalk-Board, LCD+PPTs, MKCL ERA, IDE	
		3.3 Test Management: Test Infrastructure Management, Test People Management 3.4 Test Process: Base Lining a Test Plan, Test Case Specification	02/02/2026 To 09/02/2026 (04)		Chalk-Board, LCD+PPTs, MKCL ERA, IDE	
		3.5 Test Reporting: Executing Test Cases, Preparing Test Summary Report	12/02/2026 To 16/02/2026 (03)		Chalk-Board, LCD+PPTs, MKCL ERA, IDE	
04. **(06) & (10)**	CO4 TLO- 4.1 4.2 4.3	**Unit 4 Defect Management** 4.1 Defect Classification, Defect Management Process 4.2 Defect Life Cycle, Defect Template	21/02/2026 To 26/02/2026 (03)		Chalk-Board, LCD+PPTs, MKCL ERA, IDE	

	4.4	4.3 Estimate Expected Impact of a Defect, Techniques for Finding Defects, Reporting a Defect	28/02/2026 To 05/03/2026 (03)		Chalk-Board, LCD+PPTs, MKCL ERA, IDE	
05. **(09) & (14)**	CO5 TLO-5.1 5.2 5.3	**Unit 5 Testing Tools and Measurements** 5.1 Manual Testing verses Automation Testing, advantages and disadvantages of using Testing Tools 5.2 Selecting a Test Tool: Criteria for Selecting Test Tools, Steps for Tool Selection and Deployment	07/03/2026 To 12/03/2026 (03)		Chalk-Board, LCD+PPTs, MKCL ERA, IDE	
		5.3 Selenium: Introduction and Components, Automation Testing Tools 5.4 Selenium IDE: Introduction, Features, Limitations	14/03/2026 To 23/03/2026 (03)		Chalk-Board, LCD+PPTs, MKCL ERA, IDE	
		5.5 Selenium WebDriver: Introduction, advantages and disadvantages 5.6 Metrics and Measurement: Types of Metrics, Product Metrics and Process Metric	28/03/2026 To 02/04/2026 (03)		Chalk-Board, LCD+PPTs, MKCL ERA, IDE	
		Total	**45 Hrs.**			

- **Chapter wise CO-PO Mapping:**

Course Outcomes (COs)	Programme Outcomes (POs)							Programme Specific Outcomes PSOs	
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PSO-1	PSO-2
CO1	1	1	-	-	-	-	1	2	1
CO2	1	2	3	1	1	-	1	2	1
CO3	1	2	3	1	1	1	-	2	1
CO4	1	3	1	1	1	-	-	2	1
CO5	-	1	2	3	1	-	-	2	1

- **Legends:-** High:03, Medium:02, Low:01, -- :No Mapping

Sr. No.	Programme Outcomes (POs)	Programme Specific Outcomes (PSOs)
1.	**PO-1** Basic and Discipline Specific Knowledge	**PSO1** Apply acquired skills for solving problems using programming, networking, hardware & database for computer based solutions and software development. **PSO-2** Pursue higher education/studies in the field of Computer Science / Computer Engineering / Information Technology / Artificial Intelligence.
2.	**PO-2** Problem Analysis	
3.	**PO-3** Design/ Development of Solution	
4.	**PO-4** Engineering Tools	
5.	**PO-5** Engineering Practices for Society, Sustainability and Environment	
6.	**PO-6** Project Management	
7.	**PO-7** Life Long Learning	

- **Weightage to Learning Efforts & Assessment Purpose (Specification Table)**

Unit No.	Unit Title	Aligned COs	Learning Hours	R-Level	U-Level	A-Level	Total Marks
1	Software Testing and Testing Methods	CO1	09	6	6	4	14
2	Types and Levels of Testing	CO2	12	6	6	6	18
3	Test Management	CO3	09	4	6	4	14
4	Defect Management	CO4	06	2	4	4	10
5	Testing Tools and Measurements	CO5	09	4	6	4	14
		Total :	**45**	**8**	**20**	**42**	**70**

*# **Learning Levels with reference to Bloom's Taxonomy:** R Level: Remember, U Level: Understand, A-Level: Apply*

- **Laboratory Equipment / Instruments / Tools / Software /Materials Required**

Sr. No	Equipment Name with Broad Specifications	Relevant LLO Number
1	Selenium (IDE and WebDriver)	21,22,23,24,25,26
2	Computer System with processor i3 and above, RAM minimum 4 GB	All
3	Spreadsheet Package (Microsoft excel)	All
4	Lean software testing tool, Bugzilla, QTP and RTP Software Testing Tool, loadrunner Software Testing Tool, GTMetrix, Notepad (Any Open Source Software Testing Tool)	All

- **Formative & Summative Assessment Criteria:**
  - **Theory Assessment:**

a) Formative assessment (FA-TH) :

- Two class tests each of 30 marks will be conducted as per MSBTE guidelines. The average of two class tests marks will be considered for final FA-TH(Average) out of 30 marks.

b) Summative Assessment (SA-TH) :

- The comprehensive End semester assessment will be conducted by MSBTE out of 70 marks. Question Paper and Assessment is performed by MSBTE.
- Final Theory Score out of 100 Marks will be derived as the total score as below:
  SA-TH [out of 70] + FA-TH [Average out of 30] = 100 Marks

  - **Practical Assessment:**

1. **Formative Assessment (FA-PR)** of each practical/experiment will be assessed progressively for 25 marks. The assessment performed will be based on the Regularity in Practical Performance, Tool Selection Ability, Use of Appropriate tool to perform the Identified tasks, Algorithm/Solution developed, Quality of output achieved, Answer to sample questions and Submit report in total time.
2. Final Term Work (FA-PR) of 25 marks is calculated based on scores in Formative Assessment for all practical's/experiments as:
   Term Work Marks = Sum of Total Marks Scored in FA / (25 x Total Number of Experiments) *25

  - **Self Learning Assessment:**

Self-learning Activities (SLA) includes Micro project / Software Testing course NPTEL Platform/ Software Testing Fundamentals course Infosys Springboard / Assignment / other activities related to course and it will be evaluated out of 25 Marks.

- **References:**

1. Suggested Books for Reference:

Sr. No	Author	Title of the Book	Publisher
1.	Srinivasan D., Gopalaswamy R.	Software Testing: Principles and Practices	Pearson India, 2016, ISBN: 9788177581218
2.	Limaye M. G.	Software Testing: Principles, Techniques and Tools	Tata McGraw Hill Education, New Delhi, 2012, ISBN(13): 9780070139909
3.	Chauhan Naresh	Software Testing: Principles and Practices	Oxford University Press, 2016, ISSN: 9780198061847
4.	Kalilur Rahman	Science of Selenium Master Web UI Automation and Create Your Own Test Automation Framework	Bpb Publications, 2019, ISBN: 9789389423242, 9389423244
5.	Singh Yogesh	Software Testing	Cambridge University Press, 2012, ISBN 978-1-107-65278-1

2. Learning Websites & Portals:

Sr. No	Website /Portal Link/URL	Description
1	https://infyspringboard.onwingspan.com/web/en/app/toc/lex_auth_013841792861315072425 4_shared/overview	Infosys Springboard - Software Testing Fundamentals course
2	https://www.geeksforgeeks.org/software-testing-basics/	Software Testing Tutorials
3	https://www.w3schools.in/software-testing/tutorials/	Software Testing Tutorials
4	https://www.geeksforgeeks.org/defect-management-process/	Software Testing – Defect Management Process
5	https://www.lambdatest.com/learning-hub/selenium-ide	Introduction to Selenium IDE
6	https://www.geeksforgeeks.org/introduction-to-selenium-webdr iver/	Introduction to Selenium WebDriver
7	https://www.geeksforgeeks.org/software-measurement-and-metrics/	Software Testing – Software Measurement and metrics
8	https://nptel.ac.in/courses/106101163	Software Testing Course
9	https://nptel.ac.in/courses/106105150	Software Testing Course

3. URLs of referred -YouTube Videos:

Sr. No	Website /Portal Link/URL	Description
1	https://www.youtube.com/watch?v=zxnaG2iBves	Software Testing, Objectives of Testing, Software Requirement Specification
2	https://www.youtube.com/watch?v=FMUm5z7Q58c	Failure, Error, Fault, Defect, Bug Terminology
3	https://www.youtube.com/watch?v=T0TynxN77oY	Methods of Testing: Static and Dynamic Testing
4	https://www.youtube.com/watch?v=IOrAlTY639U	White Box Testing
5	https://www.youtube.com/watch?v=0FBAEeyasyw	Black Box Testing
6	https://www.youtube.com/watch?v=T0TynxN77oY	Types and Levels of Testing
7	https://www.youtube.com/watch?v=cPAwsDxWeTc	Test life cycle
8	https://www.youtube.com/watch?v=-whVvnpkvh8	Software Testing 'V' Model Tools

4. Tools for Teaching-Learning, Assessment and Evaluation:

1. **Thonny/ Anaconda/ PyCharm IDE** -used as software development tools for writing programs in the Python language.
2. **Google Classroom** –is used to share the notes, assignments with students.
3. **ERP**- is used to store the study materials like ppt, pdf files of notes.
4. **MKCL LMS ERA** – is used to share the topic wise subject material, assignments, video reference with students and also used to conduct unit wise quizzes, Test.

Mr. G. R. Shinde
(Faculty Name & signature)

Prof. M. P. Bhosale
(HOD-Computer Tech. Dept.)

CC-

1. SFT - 316314 Course File 2. Lab Notice Board 3. Institute Website / CIAAN Coordinator