GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT & ENTREPRENEURSHIP
DIRECTORATE GENERAL OF TRAINING

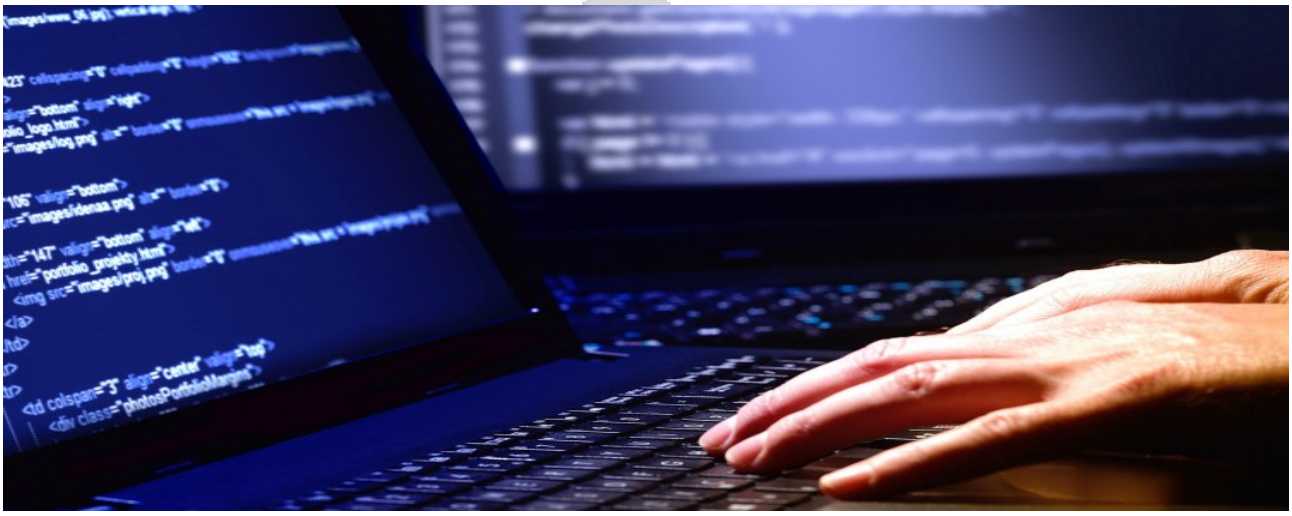
COMPETENCY BASED CURRICULUM

SOFTWARE TESTING ASSISTANT

(Duration: One Year)

CRAFTSMEN TRAINING SCHEME (CTS)

NSQF LEVEL- 5



SECTOR – IT & ITES

SOFTWARE TESTING ASSISTANT

(Non-Engineering Trade)

(Revised in 2018)
Version: 1.0

CRAFTSMEN TRAINING SCHEME (CTS)

NSQF LEVEL - 5

Developed By

Ministry of Skill Development and Entrepreneurship

Directorate General of Training

CENTRAL STAFF TRAINING AND RESEARCH INSTITUTE

EN-81, Sector-V, Salt Lake City,
Kolkata – 700 091

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CONTENTS

1. COURSE INFORMATION

During the one-year duration Software Testing Assistant trade a candidate is trained on professional skill, professional knowledge and Employability skill. In addition to this a candidate is entrusted to undertake project work and extra-curricular activities to build up confidence. The broad components covered related to the trade are categorized in two semester of six months duration each. The semester wise course coverage is categorized as below:-

1st semester – In this semester the trainee learns to practice with Operating Systems (Windows, Linux) and with all the system applications. Practice with all the functions of Word Processing and Spreadsheet Software. Create customized database files using Microsoft Access. Configure network connection and browsing Internet. Design web pages using HTML programming and WYSIWYG web design tools. Implement Information Security, Security Threats, Security Vulnerabilities and Risk Management. Design and develop web pages using JavaScript programming. At the end of this semester trainees can go on industrial visit or projects specified in the syllabus.

2nd semester – In this semester the trainee learns to Perform Software Testing using differenttechniques. Implement Quality Methods in Software Testing. Apply manual testing techniques in Software Testing. Perform automatic test execution using Windows automated software testing tool WinRunner. Perform automatic test execution using Windows automated software testing tool LoadRunner. Perform automatic test execution using Web automated software testing tool Selenium IDE. At the end of this semester trainees can go on industrial visit or projects specified in the syllabus.

2. TRAINING SYSTEM

2.1 GENERAL

Directorate General of Training (DGT) under Ministry of Skill Development & Entrepreneurship offers range of vocational training courses catering to the need of different sectors of economy/ Labour market. The vocational training programmes are delivered under aegis of National Council of Vocational Training (NCVT). Craftsman Training Scheme (CTS) and Apprenticeship Training Scheme (ATS) are two pioneer programmes of NCVT for propagating vocational training.

'Software Testing Assistant' trade under CTS is one of the popular courses delivered nationwide through network of ITIs. The course is of one year (02 semester) duration. It mainly consists of Domain area and Core area. The Domain area (Trade Theory & Practical) imparts professional skills and knowledge, while Core area (Employability Skills) imparts requisite core skill, knowledge and life skills. After passing out the training program, the trainee is awarded National Trade Certificate (NTC) by NCVT which is recognized worldwide.

Trainee needs to demonstrate broadly that they are able to:

- Read and interpret technical parameters/ documentation, plan and organize work processes, identify necessary materials and tools;
- Perform task with due consideration to safety rules, accident prevention regulations and environmental protection stipulations.
- Apply professional knowledge & employability skills while performing the job and modification & maintenance work.
- Check the system specification and application software as per requirement of the design of job.
- Document the technical parameter related to the task undertaken.

2.2 CAREER PROGRESSION PATHWAYS

- Can join Apprenticeship programme in different types of industries leading to National Apprenticeship certificate (NAC).

2.3 COURSE STRUCTURE

Table below depicts the distribution of training hours across various course elements during a period of one year (02 semesters): -

Sl. No.	Course Element	Notional Training Hours
1	Professional Skill (Trade Practical)	1320
2	Professional Knowledge (Trade Theory)	264
3	Employability Skills	110
4	Library & Extracurricular activities	66
5	Project work	160
6	Revision & Examination	160
	Total	2080

2.4 ASSESSMENT & CERTIFICATION

The trainee will be tested for his skill, knowledge and attitude during the period of the course and at the end of the training program as notified by the Government of India (GoI) from time to time. The employability skills will be tested in the first two semesters itself.

a) The **Internal Assessment** during the period of training will be done by **Formative Assessment Method** by testing for assessment criteria listed against learning outcomes. The training institute has to maintain an individual trainee portfolio as detailed in assessment guideline. The marks of internal assessment will be as per the template (Annexure – II).

b) The final assessment will be in the form of summative assessment method. The All India Trade Test for awarding NTC will be conducted by NCVT at the end of each semester as per the guideline of Government of India. The pattern and marking structure is being notified by Govt. of India from time to time. **The learning outcome and assessment criteria will be the basis for setting question papers for final assessment. The examiner during final examination will also check** the individual trainee's profile as detailed in assessment guideline before giving marks for practical examination.

2.4.1 PASS REGULATION

The minimum pass percentage for practical is 60% & minimum pass percentage of theory subjects is 40%. For the purposes of determining the overall result, 50% weightage is applied to the result of each semester examination.

2.4.2 ASSESSMENT GUIDELINE

Appropriate arrangements should be made to ensure that there will be no artificial barriers to assessment. The nature of special needs should be taken into account while undertaking the assessment. Due consideration should be given while assessing for teamwork, avoidance/reduction of scrap/wastage and disposal of scrap/waste as per procedure, behavioral attitude, sensitivity to the environment and regularity in training. The sensitivity towards OSHE and self-learning attitude are to be considered while assessing competency.

Assessment will be evidence based comprising the following:

- Job carried out in labs/workshop
- Record book/ daily diary
- Answer sheet of assessment
- Viva-voce
- Progress chart
- Attendance and punctuality
- Assignment
- Project work

Evidences of internal assessments are to be preserved until forthcoming semester examination for audit and verification by examining body. The following marking pattern to be adopted while assessing:

Performance Level	Evidence
(a) Weightage in the range of 60%-75% to be allotted during assessment	
For performance in this grade, the candidate should produce work which demonstrates attainment of an acceptable standard of craftsmanship with occasional guidance, and due regard for safety procedures and practices	• Demonstration of good skill in the use of hand tools, machine tools and workshop equipment. • Below 70% tolerance dimension achieved while undertaking different work with those demanded by the component/job. • A fairly good level of neatness and consistency in the finish. • Occasional support in completing the project/job.
(b) Weightage in the range of 75%-90% to be allotted during assessment	
For this grade, a candidate should produce work which demonstrates attainment of a reasonable standard of craftsmanship, with little guidance, and regard for safety	• Good skill levels in the use of hand tools, machine tools and workshop equipment. • 70-80% tolerance dimension achieved while undertaking different work with

procedures and practices	those demanded by the component/job. • A good level of neatness and consistency in the finish. • Little support in completing the project/job.
(c) Weightage in the range of more than 90% to be allotted during assessment	
For performance in this grade, the candidate, with minimal or no support in organization and execution and with due regard for safety procedures and practices, has produced work which demonstrates attainment of a high standard of craftsmanship.	• High skill levels in the use of hand tools, machine tools and workshop equipment. • Above 80% tolerance dimension achieved while undertaking different work with those demanded by the component/job. • A high level of neatness and consistency in the finish. • Minimal or no support in completing the project.

3. JOB ROLE

Test Engineer-Software Products; are responsible for development and co-ordination of scheduled and unscheduled test plans and conducting software compatibility tests with programs, hardware, operating systems, or network environments. The job involves documenting, reporting and tracking software defects using manual testing software.

Test Engineer - IT Services; is responsible for development and co-ordination of scheduled and unscheduled test plans and conducting software compatibility tests with programs, hardware, operating systems, or network environments. The job involves documenting, reporting and tracking software defects using manual testing software.

Reference NCO-2015:

a) 2519.0402 - Test Engineer-Software Products
b) 2519.0302 - Test Engineer-IT Services

4. GENERAL INFORMATION

Name of the Trade	**Software Testing Assistant**
NCO - 2015	2519.0402, 2519.0302
NSQF Level	Level - 5
Duration of Craftsmen Training	One Year (2 Semesters)
Entry Qualification	Passed 12th class examination under 10+2 system of education with Science & Mathematics.
Unit Strength (No. Of Student)	20 (Max. supernumeraries seats: 6)
Space Norms	70 Sq. m
Power Norms	3.45 KW
Instructors Qualification for	
1. Software Testing Assistant	Degree in Engineering in Computer Science/ IT, MCA from recognized University with one year post qualification experience in relevant field. **OR** Three year Diploma in Computer Science/ IT, BCA, NIELIT A Level from recognized Board of education/ Institute with two years post qualification experience in relevant field. **OR** NTC/ NAC passed in Software Testing Assistant trade with Three years post qualification experience in relevant field. **Desirable:** Preference will be given to a candidate with CIC (Craft Instructor Certificate) in the relevant trade. ***NOTE*:** **Out of two Instructors required for the unit of 2 (1+1), one must have Degree/ Diploma and other must have NTC/ NAC qualifications.**
2. Employability Skill	MBA OR BBA with two years experience OR Graduate in Sociology/ Social Welfare/ Economics with Two years experience OR Graduate/ Diploma with Two years experience and trained in Employability Skills from DGT institutes. ***AND*** Must have studied English/ Communication Skills and Basic Computer at 12th / Diploma level and above. ***OR***

	Existing Social Studies Instructors duly trained in Employability Skills from DGT institutes.
List of Tools & Equipment	As per Annexure-I

Distribution of training on Hourly basis: (Indicative only)

Total Hrs /week	Trade Practical	Trade Theory	Employability Skills	Extra-Curricular Activity
40 Hours	30 Hours	6 Hours	2 Hours	2 Hours

5. NSQF LEVEL COMPLIANCE

NSQF level for **Software Testing Assistant** trade under CTS: **Level 5.**

As per notification issued by Govt. of India dated- 27.12.2013 on National Skill Qualification Framework total 10 (Ten) Levels are defined.

Each level of the NSQF is associated with a set of descriptors made up of five outcome statements, which describe in general terms, the minimum knowledge, skills and attributes that a learner needs to acquire in order to be certified for that level.

Each level of the NSQF is described by a statement of learning outcomes in five domains, known as level descriptors. These five domains are:

a. Process
b. professional knowledge
c. professional skill
d. core skill
e. Responsibility

The Broad Learning outcome of **Software Testing Assistant** trade under CTS mostly matches with the Level descriptor at Level- 5.

The NSQF level-5 descriptor is given below:

Level	Process Required	Professional Knowledge	Professional Skill	Core Skill	Responsibility
Level 5	Job that requires well developed skill, with clear choice of procedures in familiar context.	Knowledge of facts, principles, processes and general concepts, in a field of work or study.	A range of cognitive and practical skills required to accomplish tasks and solve problem by selecting and applying basic methods, tools, materials and information.	Desired mathematical skill, understanding of social, political and some skill of collecting and organizing information, communication.	Responsibility for own work and learning and some responsibility for other's work and learning.

6. LEARNING/ ASSESSABLE OUTCOME

Learning outcomes are a reflection of total competencies of a trainee and assessment will be carried out as per the assessment criteria.

6.1 GENERIC LEARNING OUTCOME

1. Apply safe working practices.
2. Comply with environment regulation and housekeeping.
3. Work in a team, understand and practice soft skills, technical English to communicate with required clarity.
4. Understand and explain the concept in productivity, quality tools, and labour welfare legislation and apply such in day to day work to improve productivity & quality.
5. Explain energy conservation, global warming and pollution and contribute in day to day work by optimally using available resources.
6. Explain personnel finance, entrepreneurship and manage/organize related task in day to day work for personal & societal growth.

6.2 SPECIFIC LEARNING OUTCOME

Semester - I

7. Work with Operating Systems (Windows, Linux) and with all the system applications.
8. Explore all the functions of Word Processing and Spreadsheet Software.
9. Plan and create customized database files using Microsoft Access.
10. Configure network connection for browsing Internet.
11. Design web pages using HTML programming and WYSIWYG web design tools.
12. Implement Information Security, Security Threats, Security Vulnerabilities and Risk Management.
13. Design and develop web pages using JavaScript programming.

Semester - II

14. Perform Software Testing using different techniques.
15. Implement Quality Methods in Software Testing.
16. Apply manual testing techniques in Software Testing.
17. Perform automatic test execution using Windows automated software testing tool WinRunner.
18. Perform automatic test execution using Windows automated software testing tool LoadRunner.
19. Perform automatic test execution using Web automated software testing tool Selenium IDE.

7. LEARNING OUTCOME WITH ASSESSMENT CRITERIA

GENERIC LEARNING/ ASSESSABLE OUTCOME	
LEARNING / ASSESSABLE OUTCOME	**ASSESSMENT CRITERIA**
1. Apply safe working practices.	1.1 Follow and maintain procedures to achieve a safe working environment in line with occupational health and safety regulations and requirements and according to site policy.
	1.2 Recognize and report all unsafe situations according to site policy.
	1.3 Identify and take necessary precautions on fire and safety hazards and report according to site policy and procedures.
	1.4 Identify, handle and store / dispose off dangerous goods and substances according to site policy and procedures following safety regulations and requirements.
	1.5 Identify and observe site policies and procedures in regard to illness or accident.
	1.6 Identify safety alarms accurately.
	1.7 Report supervisor/ Competent of authority in the event of accident or sickness of any staff and record accident details correctly according to site accident/injury procedures.
	1.8 Identify and observe site evacuation procedures according to site policy.
	1.9 Identify Personal Productive Equipment (PPE) and use the same as per related working environment.
	1.10 Identify basic first aid and use them under different circumstances.
	1.11 Identify different fire extinguisher and use the same as per requirement.
2. Comply with environment regulation and housekeeping.	2.1 Identify environmental pollution & contribute to the avoidance of instances of environmental pollution.
	2.2 Deploy environmental protection legislation & regulations
	2.3 Take opportunities to use energy and materials in an environmentally friendly manner
	2.4 Avoid waste and dispose waste as per procedure
	2.5 Recognize different components of 5S and apply the same in the working environment.
3. Work in a team, understand and practice	3.1 Obtain sources of information and recognize information.
	3.2Use and draw up technical drawings and documents.

soft skills, technical English to communicate with required clarity.	3.3 Use documents and technical regulations and occupationally related provisions.
	3.4 Conduct appropriate and target oriented discussions with higher authority and within the team.
	3.5 Present facts and circumstances, possible solutions & use English special terminology.
	3.6 Resolve disputes within the team
	3.7 Conduct written communication.
4. Understand and explain the concept in productivity, quality tools, and labour welfare legislation and apply such in day to day work to improve productivity & quality.	4.1 Explain the concept of productivity and quality tools and apply during execution of job.
	4.2 Explain basic concept of labour welfare legislation, adhere to responsibilities and remain sensitive towards such laws.
	4.3 Knows benefits guaranteed under various acts.
5. Explain energy conservation, global warming and pollution and contribute in day to day work by optimally using available resources.	5.1 Explain the concept of energy conservation, global warming, pollution and utilize the available resources optimally & remain sensitive to avoid environment pollution.
	5.2 Explain standard procedure for disposal of waste.
6. Explain entrepreneurship and manage/ organize related task in day to day work for personal & societal growth.	6.1 Explain entrepreneurship.
	6.2 Explain role of various schemes and institutes for self-employment i.e. DIC, SIDA, SISI, NSIC, SIDO, Idea for financing/ non-financing support agencies to familiarize with the policies/ programmes, procedure & the available scheme.

SPECIFIC LEARNING/ ASSESSABLE OUTCOME	
LEARNING / ASSESSABLE OUTCOME	**ASSESSMENT CRITERIA**
SEMESTER-I	
7. Work with Operating Systems (Windows, Linux) and with all the system applications.	7.1 Working with Windows Explorer, Managing Folders and Files, Copying and Moving Files and Folders.
	7.2 Using Common Tools and Programs, Customizing the Windows 7 Desktop, start menu, using the removable drives, Compressing files.
	7.3 Working with Window Accessories Calculator, Paint and Snipping Tool.
	7.4 Working with Linux OS.
8. Explore all the functions of Word Processing and Spreadsheet Software.	8.1 Document Basics, Creating a New Document, Saving, Editing and Formatting Documents.
	8.2 Using the commands in the Home, Insert, Design, Page Layout, Mailings, and View Menus.
	8.3 Create Excel Sheets for various entries like Marks, Salary and Sales etc.
	8.4 Sort and Filter Data. Validate data.
	8.5 Create data tables, Pivot tables and charts.
9. Plan and create customized database files using Microsoft Access.	9.1 Create Tables.
	9.2 Create Queries.
	9.3 Create Relationships.
	9.4 Create Reports.
10. Configure network connection for browsing Internet.	10.1 Connecting a computer to a network.
	10.2 Sharing of Devices, Files and Folders.
	10.3 Internet, Email, Setting up video conferencing.
11. Design web pages using HTML programming and WYSIWYG web design tools.	11.1 Designing simple web pages with text, pictures, tables, lists, hyperlinks, frames, marquees etc. using HTML tags.
	11.2 Using a WYSIWYG web design tool to design and edit web pages. With various styles.
12. Implement Information Security, Security Threats, Security Vulnerabilities and Risk Management.	12.1 Practice on Information Security.
	12.2 Practice on Security Threats.
	12.3 Practice on Security Vulnerabilities.
	12.4 Practice on Risk Management.

13. Design and develop web pages using JavaScript programming.	13.1 Describe variables and literals.
	13.2 List the operators supported by JavaScript.
	13.3 Use Regular Expressions.
	13.4 Create applications using JavaScript statements.
	13.5 Create user-defined functions.
	13.6 Use JavaScript objects.
	13.7 Create event handlers in JavaScript.
SEMESTER-II	
14. Perform Software Testing using different techniques.	14.1 Criticality of requirement, special tests –complexity.
	14.2 Security, recovery, installation, error handling.
	14.3 Smoke, sanity, parallel and execution testing.
15. Implement Quality Methods in Software Testing.	15.1 Seiton: Set in Order.
	15.2 Seiso: Spic & Span (Shine).
	15.3 Shitsuke: Self Discipline (Sustain).
16. Apply manual testing techniques in Software Testing.	16.1 Unit Testing.
	16.2 Alpha & Beta Testing.
	16.3 White Box Testing.
	16.4 Black Box Testing.
	16.5 Performance Testing.
17. Perform automatic test execution using Windows automated software testing tool WinRunner.	17.1 Exploring the WinRunner Window.
	17.2 Spying on GUI map mode.
	17.3 Using the Rapid Test script wizard.
	17.4 Recording a context sensitive test.
	17.5 Recording in analogy mode.
	17.6 Changing the synchronization setting.
	17.7 Running the synchronized test.
	17.8 Adding bitmap checkpoints to a test script.
	17.9 Running the test on a new version.
	17.10 Using the function generator to insert functions.
	17.11 Debugging the test script.
	17.12 Converting your test to a data driven test.
	17.13 Adjusting the script with regular information.
	17.14 Reading text from an application.
	17.15 Teaching fonts to win runner.
	17.16 Programming a batch test.
	17.17 Analysing the batch test results.
	17.18 Editing object descriptions in the GUI map adding GUI

	objects to the GUI map.
	17.19 Updating the GUI map with the run wizard.
18. Perform automatic test execution using Windows automated software testing tool LoadRunner.	18.1 The LoadRunner controller at a glance.
	18.2 Configuring a scenario.
	18.3 Configuring a host.
	18.4 Managing scenarios using test director.
	18.5 Runtime and transaction online monitors.
	18.6 Web performance monitors.
	18.7 Exporting analysis data.
	18.8 Analysing scenario performance.
19. Perform automatic test execution using Web automated software testing tool Selenium IDE.	19.1 Installing the IDE.
	19.2 Menu Bar, Toolbar, Case Pane.
	19.3 Building Test Cases.
	19.4 Editing, Insert Command, Table View.
	19.5 Table View, Source View, Opening and Saving a Test Case.
	19.6 Selenium Commands -"Selenese".
	19.7 Commonly used Selenium Commands.
	19.8 Verify text present, verify element present.
	19.9 Location by Identifier, Location by Id.
	19.10 Location by DOM, Location by CSS.
	19.11 Globbing Patterns, Regular Expression Patterns, Exact Patterns.
	19.12 The waitFor Commands in AJAX applications.
	19.13 JavaScript Usages with Script Parameters
	19.14 Alert, Popups and Multiple Windows.
	19.15 Stepping Through a Test case.
	19.16 Executing Selenium-IDE Tests on Different Browsers.

8. SYLLABUS

SYLLABUS FOR SOFTWARE TESTING ASSISTANT			
First Semester – 06 Months			
Week No.	**Reference Learning Outcome**	**Professional Skills (Trade Practical) With indicative hours**	**Professional Knowledge (Trade Theory)**
1-2	Work with Operating Systems (Windows, Linux) and with all the system applications.	***Windows*** 1. Working with Windows Operating System. (12 hrs) 2. Working with Windows Explorer, Managing Folders and Files, Copying and Moving Files and Folders. (12 hrs) 3. Using Common Tools and Programs, Customizing the Windows 7 Desktop, start menu, using the removable drives, Compressing files. (12 hrs) 4. Working with Window Accessories Calculator, Paint and Snipping Tool. (12 hrs) 5. Viewing the properties of the computer and the hardware installed. (12 hrs)	***Computer Fundamentals*** • History & Generations of Computers. Types of Computers. • Advantages, disadvantages and applications of Computers. • Hardware and Software Concepts, Introduction to the functions of an Operating System. Popular Operating systems in use. • Features of Windows OS. Features of the various types of Input and Output Devices in Use, Using Scanner and Printer.
3	Work with Operating Systems (Windows, Linux) and with all the system applications.	***Linux*** 6. Working with Linux OS. (12 hrs) 7. Using Basic commands like ls, mkdir, rm, mv, cp, whoami, who, grep. (12 hrs) 8. Using vi editor. (6 hrs)	***Linux*** • Introduction to Linux Operating System and its structure. • Files and Processes in Linux. • Directory structure of Linux O.S. • Advantages of Linux Operating System. • Various Linux Shells. • Basic Linux commands.
4-6	Explore all the functions of Word Processing and Spreadsheet Software.	***Word Processing Software*** 9. Document Basics, Creating a New Document, Saving, Editing and Formatting Documents. (30 hrs) 10. Using the commands in the Home, Insert, Design, Page	***Introduction to Office*** • MS Word Fundamentals Introduction to the MS Word Screen, Ribbons, Microsoft Office Button and Quick Access Toolbar. • Using Keyboard

		Layout, Mailings, and View Menus. (30 hrs) 11. Creating documents with various objects and formatting objects. (30 hrs)	Commands and Contextual Menus. Using Word Help.
7-9	Explore all the functions of Word Processing and Spreadsheet Software.	***Spreadsheet*** 12. Create, open, edit and format workbooks. (12 hrs) 13. Create Excel Sheets for various situations like Marks, Salary and Sales etc. (12 hrs) 14. Using Functions of various categories. Relative and Absolute Cell Referencing. (12 hrs) 15. Sort and Filter Data. Validate data. (12 hrs) 16. Create Macros. Import Data from different sources. (18 hrs) 17. Create data tables, Pivot tables and charts. (12 hrs) 18. Excel Sheet Page Set up and Printing Techniques. (12 hrs)	***Spreadsheet*** • Introduction to MS Excel. • Introduction to Data Types and Cell referencing. • Use of functions of various categories. • Linking Sheets.
10-12	Plan and create customized database files using Microsoft Access.	***Database - Access*** 19. Create Tables. (18 hrs) 20. Queries. (18 hrs) 21. Relationships. (18 hrs) 22. Reports. (18 hrs) 23. Macros and Forms. (18 hrs)	***Database - Access*** • Concepts of Data, Information and Databases. • Overview of popular databases, RDBMS, OODB and NOSQL. • Rules for designing good tables. Integrity rules and constraints in a table. • Relationships in tables. Introduction toMS Access Database. • Create Tables, Queries, Relationships, Reports, Macros and Forms.
13	Configure network connection for browsing Internet.	***Computer Network*** 24. Viewing Network connections. (3 hrs) 25. Connecting a computer to a network. (3 hrs)	***Introduction to Computer Networks*** • Necessity and Advantages of networking. • Client Server and peer to

		26. Sharing of Devices, Files and Folders. (6 hrs) 27. Using the ping command. (6 hrs) 28. Internet, Email, Setting up video conferencing. (12 hrs)	Peer networking concepts. • Network topologies. • Introduction to LAN, WAN and MAN. • Network components, viz. Modem, Hub, Switch, Router, Bridge, Gateway etc.
14-17	Design web pages using HTML programming and WYSIWYG web design tools.	***Web Page Design (Designing Static Web Pages)*** 29. Designing simple web pages with text, pictures, tables, lists, hyperlinks, frames, marquees etc. using HTML tags. (30 hrs) 30. Designing Web Pages with Forms and Form Controls using HTML tags. (30 hrs) 31. Using a WYSIWYG web design tool to design and edit web pages. With various styles. (60 hrs)	***Web Design Concepts*** • Concepts of Static and Dynamic Web pages. • Introduction to HTML and various • Tags in HTML. • Creating Forms with controls using HTML. • Concepts of CSS.
18	Implement Information Security, Security Threats, Security Vulnerabilities and Risk Management.	***Information Security*** 32. Practice on Information Security. (9 hrs) ***Overview of Security threats*** 33. Practice on Security Threats. (6 hrs) ***Information Security Vulnerabilities*** 34. Practice on Security Vulnerabilities. (6 hrs) ***Risk Management*** *35.* Practice on Risk Management. (9 hrs)	***Overview of Information Security*** • Understanding Information Security –Need of the Information security, Basics of IS (CIA). • History and evolution of IS, Dimensions of Security, Intranet/Internet, Information Security and Cyber Security relationship. • Why Care About Security? - Challenges to Information Security, Benefits of Information of Security. • Understanding techniques to enforce IS in an organization, Identifying tools to enforce Information Security, Identifying frameworks to enforce Information Security.

			Overview of Security threats • Overview of Information Security Threats, Types of threats. • Best Practices or Guidelines used to Identify Threats. • Maintaining Systems and Procedures. ***Information Security Vulnerabilities*** • Why do Information Security Vulnerabilities exists - Types of Technical Vulnerabilities. • Flaws in Software or Protocol Designs. • Weaknesses in How Protocols and Software Are Implemented. • Weaknesses in System and Network Configurations, Weaknesses in Web or Cloud applications. • Identifying role of Social sites and media in cyber security and vulnerability. ***Risk Management*** • What is Risk? Relationship between Threat, Vulnerability, and Risk. • Risk Assessment (Phases), Why Is Risk Assessment Difficult? • Types of Risk Assessment, Best Practices and Guidelines in Assessing and Calculating Risks.
19-22	Design and develop web pages using JavaScript programming.	***JavaScript*** ***Variables, Data Types and Operators:*** 36. Describe variables and literals. (4 hrs)	***JavaScript*** • Introduction to JavaScript. • Describe JavaScript. • Differentiate between Client- Side and Server - Side Application.

		37. List the data types supported by JavaScript. (6 hrs) 38. List the operators supported by JavaScript. (4 hrs) 39. Describe expressions. (4 hrs) 40. Use Regular Expressions. (6 hrs) 41. Use Arrays. (6 hrs) ***JavaScript Statements:*** 42. Create applications using JavaScript statements. (10 hrs) 43. Use conditional and loop statements to control the application. (10 hrs) 44. Create user-defined functions. (10 hrs) ***Using Objects:*** 45. Use Browser objects. (10 hrs) 46. Use JavaScript objects. (10 hrs) 47. Use HTML input elements. (10 hrs) ***Handling Events:*** 48. Explain Events objects. (10 hrs) 49. List common events. (10 hrs) 50. Create event handlers in JavaScript. (10 hrs)	• Differentiate between JavaScript and Java. • Integrate JavaScript in HTML. • Variables, data Types and Operators. • JavaScript Statements. • Using Objects. • Handling Events.
23-24	**Industrial Visit/Project work** **Broad Areas:** • Static and Dynamic Web pages.		
25	**Revision**		
26	**Examination**		

Note: -

1. *Some of the sample project works (indicative only) are given against each semester.*
2. *Instructor may design their own project and also inputs from local industry may be taken for designing such new project.*

3. *The project should broadly cover maximum skills in the particular trade and must involve some problem solving skill. Emphasis should be on Teamwork: Knowing the power of synergy/ collaboration, work to be assigned in a group (Group of at least 4 trainees). The group should demonstrate Planning, Execution, Contribution and Application of Learning. They need to submit Project report.*
4. *If the instructor feels that for execution of specific project more time is required than he may plan accordingly to produce components/ sub-assemblies in appropriate time i.e., may be in the previous semester or during execution of normal trade practical.*

SYLLABUS FOR SOFTWARE TESTING ASSISTANT			
Second Semester – 06 Months			
Week No.	**Reference Learning Outcome**	**Professional Skills (Trade Practical) With indicative hours**	**Professional Knowledge (Trade Theory)**
27	Perform Software Testing using different techniques.	***Testing Techniques*** 51. Criticality of requirement, special tests –complexity. (6 hrs) 52. GUI, compatibility. (6 hrs) 53. Security, recovery, installation, error handling. (12 hrs) 54. Smoke, sanity, parallel and execution testing. (6 hrs)	***Introduction to Software Testing Quality Control (STQC)*** • Definition, approaches. • Testing during development life cycle. • Test policy. • Test planning. • Categories of defect. • Configuration management • Risk analysis.
28	Implement Quality Methods in Software Testing.	***Quality Methods (implement in test cases)*** 55. Seiri: Sort. (6 hrs) 56. Seiton: Set in Order. (6 hrs) 57. Seiso: Spic & Span (Shine). (6 hrs) 58. Seiketsu: Standardize. (6 hrs) 59. Shitsuke: Self Discipline (Sustain). (6 hrs)	***Introduction to 5S and Keizen module*** • Seiri: **Sort** Sort through and sort out junk, seldom-used items and necessary items. • Seiton: **Set in Order** Physically mark a place for everything and keep everything in its place. • Seiso: **Spic & Span (Shine)** Keep workplace & machine spic & span while at the same time inspect for abnormalities, if any. • Seiketsu: **Standardize** Define and standardize work processes, 5S activities and tasks. • Shitsuke: **Self Discipline (Sustain)** Make 5S a way of life, one should train everybody in the organisation so that doing 5S becomes self-discipline.
29-33	Apply manual	***Manual Testing***	***Objectives and Principles of***

	testing techniques in Software Testing.	60. Unit Testing. (6 hrs) 61. Alpha & Beta Testing. (12 hrs) 62. Regression Vs Retesting. (6 hrs) 63. White Box Testing. (12 hrs) 64. White Box V/s Black Box. (9 hrs) 65. Verification & Validation. (9 hrs) 66. Black Box Testing. (12 hrs) 67. Acceptance Testing. (12 hrs) 68. Non Functional Testing. (12 hrs) 69. Usability Testing. (12 hrs) 70. Stress Testing. (12 hrs) 71. Load Testing. (12 hrs) 72. Performance Testing. (12 hrs) 73. Diff. b/w above 3. (12 hrs)	***Testing*** • Test Management. • Testing Models. • Test Strategy. • Testing Life Cycle. • Testing Methodologies. • Facts and Myth.
34-37	Perform automatic test execution using Windows automated software testing tool WinRunner.	***Introducing WinRunner (Windows Automated Testing Tool)*** 74. The Benefits of Automated testing. (2 hrs) 75. Understanding the testing process. (2 hrs) 76. Exploring the WinRunner Window. (2 hrs) ***Setting Up The GUI Map*** 77. How does WinRunner identify GUI objects. (1 hrs) 78. Spying on GUI map mode. (2 hrs) 79. Choosing a GUI map mode. (1 hrs) 80. Using the Rapid Test script wizard. (2 hrs) ***Recording Tests*** 81. Choosing a record mode. (1 hrs) 82. Recording a context sensitive test. (2 hrs) 83. Understanding the text script. (1 hrs) 84. Recording in analogy mode. (2 hrs) 85. Running the test. (2 hrs) 86. Analysing test results. (2 hrs) 87. Recording tips. (2 hrs)	***Automating Test Execution*** • Testing and test automation. • The V model. • Tool support for life-cycle testing. • The promise of test automation, Common problems of test automation. • The limitations of automating software testing, Script Preprocessing, Scripting Techniques.

		Synchronizing Tests 88. When should you synchronize. (2 hrs) 89. Creating a test. (2 hrs) 90. Changing the synchronization setting. (2 hrs) 91. Identifying a synchronization problem. (2 hrs) 92. Synchronizing the test. (2 hrs) 93. Running the synchronized test. (2 hrs) ***Checking Bitmaps*** 94. How do you check a bitmap. (2 hrs) 95. Adding bitmap checkpoints to a test script. (3 hrs) 96. Viewing expected results. (2 hrs) 97. Running the test on a new version. (3 hrs) 98. Bitmap checkpoint tips. (2 hrs) ***Programming Tests with TSL*** 99. How do you program tests with TSL. (2 hrs) 100. Recording a basic test script. (3 hrs) 101. Using the function generator to insert functions. (3 hrs) 102. Adding logic to the test scrip. (3 hrs) 103. Understanding tl-step. (2 hrs) 104. Debugging the test script. (2 hrs) 105. Running the test on a new version. (3 hrs) ***Creating Data-Driven Tests*** 106. How do you create data-driven tests. (2 hrs) 107. Converting your test to a data driven test. (2 hrs) 108. Adding data to the data table. (2 hrs)	

		109. Adjusting the script with regular information. (2 hrs) 110. Running the test and analysing result. (2 hrs) 111. Data driven testing tips. (2 hrs) ***Reading Text*** 112. How do you read text from an application. (2 hrs) 113. Reading text from an application. (2 hrs) 114. Teaching fonts to win runner. (2 hrs) 115. Verifying text. (2 hrs) 116. Running the test on a new version. (2 hrs) 117. Text checkpoint tips. (2 hrs) ***Creating Batch Tests*** 118. What is a batch test. (3 hrs) 119. Programming a batch test. (6 hrs) 120. Running the batch test on version IB. (3 hrs) 121. Analysing the batch test results. (3 hrs) 122. Batch test tips. (3 hrs) ***Maintaining Your Test Scripts*** 123. What happens when the user interface changes. (3 hrs) 124. Editing object descriptions in the GUI map adding GUI objects to the GUI map. (6 hrs) 125. Updating the GUI map with the run wizard. (3 hrs)	
38-42	Perform automatic test execution using Windows automated software testing tool LoadRunner.	***LoadRunner (Windows Automated Testing Tool)*** 126. Load test planning. (6 hrs) 127. The LoadRunner controller at a glance. (6 hrs) 128. Creating a scenario. (6 hrs) 129. Using rendezvous points. (6 hrs) 130. Configuring a scenario. (9 hrs) 131. Configuring a host. (9 hrs)	***Tools to Automate Testing*** • Selecting tools. • Requirements. • Tool market. • Tool selection project. • Team. • Identifying requirements. • Identifying constraints.

		132. Preparing to run a scenario. (6 hrs) 133. Managing scenarios using test director. (9 hrs) 134. Running a scenario. (6 hrs) 135. Online monitoring. (9 hrs) 136. Runtime and transaction online monitors. (9 hrs) 137. Resource monitoring. (6 hrs) 138. Web performance monitors. (9 hrs) 139. Network monitoring. (9 hrs) 140. Understanding load runner analysis. (6 hrs) 141. Exporting analysis data. (6 hrs) 142. Analysing scenario activity. (6 hrs) 143. Analysing scenario performance. (9 hrs) 144. Cross scenario analysis. (9 hrs) 145. Web user graphs. (9 hrs)	• Identifying tools. • Availability in market. • Evaluating the candidate tools.
43-48	Perform automatic test execution using Web automated software testing tool Selenium IDE.	***(Web Automated Testing Tool) Selenium-IDE*** 146. Installing the IDE. (3 hrs) 147. Opening the IDE. (3 hrs) 148. IDE Features. (3 hrs) 149. Menu Bar, Toolbar, Case Pane. 150. Log/ Reference/ UI-Element Rollup Pane. (3 hrs) 151. Log, Reference, I-Element and Rollup. (3 hrs) 152. Building Test Cases. (3 hrs) 153. Recording. (3 hrs) 154. Adding Verifications and Asserts With the Context Menu. (3 hrs) 155. Editing, Insert Command, Table View. (3 hrs) 156. Source View, Insert Comment, Table View, Source View, Edit a Command or Comment. (3 hrs) 157. Table View, Source View, Opening and Saving a Test Case. (3 hrs) 158. Running Test Cases. (3 hrs) 159. Using Base URL to Run Test	***Automated Comparison*** • Verification. • Comparison, automation. • Comparators, dynamic comparison. • Post execution comparison. • Simple comparison, complex. • Comparison. • Test sensitivity. • Comparing different types of outcomes. • Comparison filters and guidelines. • Test ware Architecture. • Automating pre and post • Processing. • Building maintainable tests.

		Cases in Different Domains. (3 hrs) 160. Selenium Commands - "Selenese". (3 hrs) 161. Script Syntax. (3 hrs) 162. Test Suites. (3 hrs) 163. Commonly used Selenium Commands. (3 hrs) 164. Verifying page Elements. (3 hrs) 165. Assertion or Verification? (3 hrs) 166. Verify text present, verify element present. (3 hrs) 167. Verify text. (3 hrs) 168. Location Elements. (3 hrs) 169. Location by Identifier, Location by Id. (3 hrs) 170. Location by name, location by X-path. (3 hrs) 171. Location Hyperlinks by Link text. (3 hrs) 172. Location by DOM, Location by CSS. (3 hrs) 173. Implicit Locators. (3 hrs) 174. Matching Text Patterns. (3 hrs) 175. Globbing Patterns, Regular Expression Patterns, Exact Patterns. (3 hrs) 176. The "AndWait" Commands. (3 hrs) 177. The waitFor Commands in AJAX applications. (6 hrs) 178. Sequence of Evaluation and Flow Control. (3 hrs) 179. Store Commands and Selenium Variables. (6 hrs) 180. Store Element Present, store text, Store Eval. (3 hrs) 181. JavaScript and Selenese Parameters. (6 hrs) 182. JavaScript Usages with Script Parameters. (6 hrs) 183. JavaScript Usage with Non-Script Parameters. (6 hrs) 184. echo-The Selenese Print Commands. (6 hrs)	

		185. Alert, Popups and Multiple Windows. (3 hrs) 186. Alerts, Confirmations. (3 hrs) 187. Debugging. (3 hrs) 188. Breakpoint and Startpoints. (6 hrs) 189. Stepping Through a Test case. (3 hrs) 190. Find Button. (3 hrs) 191. Page Source for Debugging. (3 hrs) 192. Locator Assistance. (3 hrs) 193. Writing a Test Suite. (3 hrs) 194. User Extensions. (3 hrs) 195. Format. (3 hrs) 196. Executing Selenium-IDE Tests on Different Browsers. (6 hrs) 197. Troubleshooting. (6 hrs)	
49-50	**Industrial Visit/ Project work** **Broad Areas:** • Project work on Software Testing Tools.		
51	**Revision**		
52	**Examination**		

Note: -

1. *Some of the sample project works (indicative only) are given against each semester.*
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3. *The project should broadly cover maximum skills in the particular trade and must involve some problem solving skill. Emphasis should be on Teamwork: Knowing the power of synergy/ collaboration, work to be assigned in a group (Group of at least 4 trainees). The group should demonstrate Planning, Execution, Contribution and Application of Learning. They need to submit Project report.*
4. *If the instructor feels that for execution of specific project more time is required than he may plan accordingly to produce components/ sub-assemblies in appropriate time i.e., may be in the previous semester or during execution of normal trade practical.*

CORE SKILL - EMPLOYABILITY SKILL	
1st Semester	
1. English Literacy	**Duration : 20 Hrs** **Marks : 09**
Pronunciation	Accentuation (mode of pronunciation) on simple words, Diction (use of word and speech).
Functional Grammar	Transformation of sentences, Voice change, Change of tense, Spellings.
Reading	Reading and understanding simple sentences about self, work and environment.
Writing	Construction of simple sentences Writing simple English.
Speaking / Spoken English	Speaking with preparation on self, on family, on friends/ classmates, on know, picture reading gain confidence through role-playing and discussions on current happening job description, asking about someone's job habitual actions. Cardinal (fundamental) numbers ordinal numbers. Taking messages, passing messages on and filling in message forms Greeting and introductions office hospitality, Resumes or curriculum vita essential parts, letters of application reference to previous communication.
2. I.T. Literacy	**Duration : 20 Hrs** **Marks : 09**
Basics of Computer	Introduction, Computer and its applications, Hardware and peripherals, Switching on-Starting and shutting down of computer.
Computer Operating System	Basics of Operating System, WINDOWS, The user interface of Windows OS, Create, Copy, Move and delete Files and Folders, Use of External memory like pen drive, CD, DVD etc, Use of Common applications.
Word processing and Worksheet	Basic operating of Word Processing, Creating, opening and closing Documents, use of shortcuts, Creating and Editing of Text, Formatting the Text, Insertion & creation of Tables. Printing document. Basics of Excel worksheet, understanding basic commands, creating simple worksheets, understanding sample worksheets, use of simple formulas and functions, Printing of simple excel sheets.
Computer Networking and Internet	Basic of computer Networks (using real life examples), Definitions of Local Area Network (LAN), Wide Area Network (WAN), Internet, Concept of Internet (Network of Networks),

	Meaning of World Wide Web (WWW), Web Browser, Web Site, Web page and Search Engines. Accessing the Internet using Web Browser, Downloading and Printing Web Pages, Opening an email account and use of email. Social media sites and its implication. Information Security and antivirus tools, Do's and Don'ts in Information Security, Awareness of IT - ACT, types of cyber crimes.
3. Communication Skills	**Duration : 15 Hrs** **Marks : 07**
Introduction to Communication Skills	Communication and its importance Principles of Effective communication Types of communication - verbal, non verbal, written, email, talking on phone. Non verbal communication -characteristics, components-Para-language Body language Barriers to communication and dealing with barriers. Handling nervousness/ discomfort.
Listening Skills	Listening-hearing and listening, effective listening, barriers to effective listening guidelines for effective listening. Triple- A Listening - Attitude, Attention & Adjustment. Active Listening Skills.
Motivational Training	Characteristics Essential to Achieving Success. The Power of Positive Attitude. Self awareness Importance of Commitment Ethics and Values Ways to Motivate Oneself Personal Goal setting and Employability Planning.
Facing Interviews	Manners, Etiquettes, Dress code for an interview Do's & Don'ts for an interview.
Behavioral Skills	Problem Solving, Confidence Building, Attitude.
2nd Semester	
4. Entrepreneurship Skills	**Duration : 15 Hrs** **Marks : 06**
Concept of Entrepreneurship	Entrepreneur - Entrepreneurship - Enterprises:-Conceptual issue Entrepreneurship vs. management, Entrepreneurial motivation. Performance & Record, Role & Function of entrepreneurs in relation to the enterprise & relation to the economy, Source of business ideas, Entrepreneurial opportunities, The process of setting up a business.

Project Preparation & Marketing analysis	Qualities of a good Entrepreneur, SWOT and Risk Analysis. Concept & application of PLC, Sales & distribution Management. Different Between Small Scale & Large Scale Business, Market Survey, Method of marketing, Publicity and advertisement, Marketing Mix.
Institutions Support	Preparation of Project. Role of Various Schemes and Institutes for self-employment i.e. DIC, SIDA, SISI, NSIC, SIDO, Idea for financing/ non financing support agencies to familiarizes with the Policies /Programmes & procedure & the available scheme.
Investment Procurement	Project formation, Feasibility, Legal formalities i.e., Shop Act, Estimation & Costing, Investment procedure - Loan procurement - Banking Processes.
5. Productivity	**Duration : 10 Hrs** **Marks : 05**
Benefits	Personal / Workman - Incentive, Production linked Bonus, Improvement in living standard.
Affecting Factors	Skills, Working Aids, Automation, Environment, Motivation - How improves or slows down.
Comparison with developed countries	Comparative productivity in developed countries (viz. Germany, Japan and Australia) in selected industries e.g. Manufacturing, Steel, Mining, Construction etc. Living standards of those countries, wages.
Personal Finance Management	Banking processes, Handling ATM, KYC registration, safe cash handling, Personal risk and Insurance.
6. Occupational Safety, Health and Environment Education	**Duration : 15 Hrs** **Marks : 06**
Safety & Health	Introduction to Occupational Safety and Health importance of safety and health at workplace.
Occupational Hazards	Basic Hazards, Chemical Hazards, Vibroacoustic Hazards, Mechanical Hazards, Electrical Hazards, Thermal Hazards. Occupational health, Occupational hygienic, Occupational Diseases/ Disorders & its prevention.
Accident & safety	Basic principles for protective equipment. Accident Prevention techniques - control of accidents and safety measures.
First Aid	Care of injured & Sick at the workplaces, First-Aid & Transportation of sick person.
Basic Provisions	Idea of basic provision legislation of India. safety, health, welfare under legislative of India.

Ecosystem	Introduction to Environment. Relationship between Society and Environment, Ecosystem and Factors causing imbalance.
Pollution	Pollution and pollutants including liquid, gaseous, solid and hazardous waste.
Energy Conservation	Conservation of Energy, re-use and recycle.
Global warming	Global warming, climate change and Ozone layer depletion.
Ground Water	Hydrological cycle, ground and surface water, Conservation and Harvesting of water.
Environment	Right attitude towards environment, Maintenance of in -house environment.
7. Labour Welfare Legislation	**Duration : 05 Hrs** **Marks : 03**
Welfare Acts	Benefits guaranteed under various acts- Factories Act, Apprenticeship Act, Employees State Insurance Act (ESI), Payment Wages Act, Employees Provident Fund Act, The Workmen's compensation Act.
8. Quality Tools	**Duration : 10 Hrs** **Marks : 05**
Quality Consciousness	Meaning of quality, Quality characteristic.
Quality Circles	Definition, Advantage of small group activity, objectives of quality Circle, Roles and function of Quality Circles in Organization, Operation of Quality circle. Approaches to starting Quality Circles, Steps for continuation Quality Circles.
Quality Management System	Idea of ISO 9000 and BIS systems and its importance in maintaining qualities.
House Keeping	Purpose of House-keeping, Practice of good Housekeeping.
Quality Tools	Basic quality tools with a few examples.

ANNEXURE-I

LIST OF TOOLS & EQUIPMENT			
SOFTWARE TESTING ASSISTANT (for a batch of 20 trainees)			
S No.	**Name of the Tools and Equipment**	**Specification**	**Quantity**
A. Tools/ Equipment			
1.	Desktop Computer	Latest configuration prevalent at the time of procurement or with the following minimum features : CPU : 32/64 Bit Core 2 Duo/Quad Core/i3/i5 , Speed :- 3 GHz or Higher. Cache Memory : - Minimum 3 MB or better. RAM :- 4 GB DDR-III or Higher.Hard Disk Drive :- 500GB or Higher,7200 rpm(minimum) o r Higher, WiFi Enabled. Network Card : Integrated Gigabit Ethernet(10/100/1000) - Wi Fi, USB Mouse, USB Keyboard and Monitor (Min. 22 Inch), Standard Ports and connectors. DVD Writer, Speakers And Mic. Licensed Windows Operating System / OEM Pack(Preloaded), Antivirus / Total Security	10 Nos.
2.	Laptop	4th Gen Ci5 Processor, 4GB RAM, 1TB Hard Disk, Win8 Preloaded Licensed OS, 2GB Graphics Card, DVD Writer, Standard Ports And Connectors.	01 No.
3.	Switch With Wireless Connectivity	24 Port	01 No.
4.	Lab should have Structured cabling (to enable both Wired and Wireless Networks Practicals)		As required
5.	Internet or Intranet Connectivity		As required
6.	Laser Printer		1 No.
7.	Network Monochrome Laser Printer		1 No.
8.	Optical Scanner (Desk Top Type)		1 No.
9.	Web Cam (Digital Camera)		1 No.

10.	DVD or Blu-Ray Writer		2 Nos.
11.	LCD Projector with Wireless connectivity.		1 No.
12.	Online UPS	2KVA	1 No.
13.	Standalone Hard Disks		4 Nos.
14.	Network Rack		2 Nos.
15.	LAN Setup		As required
B. Software			
16.	MS Office	2010 (professional) or the latest version available at the time of procurement	Multiuser
17.	Antivirus for - clients / workstations in profile with validity of an year or more which should be renewed upon expiry		11 Licences
18.	Open Office or equivalent.		Open source software
19.	Testing Tools -win runner and load runner (windows based) selenium(web-based) open source		Multiuser(Academic version)
C. LIST OF OTHER ITEMS/ FURNITURE			
20.	Vacuum cleaner		01 No.
21.	Pigeon hole cabinet	20 compartments	01 No.
22.	Chair and table for the instructor		01 each (for class room & laboratory)
23.	Dual Desk or Chair and Tables for Trainees		10 / 20 Nos.
24.	Computer table laminated top	150x650x750 mm with sliding tray for key board and one shelf of storage	10 Nos.
25.	Operators chair	without arms mounted on castor wheels, adjustable height	20 Nos.
26.	Wall clock		01 Nos.
27.	Printer table	650x500x750mm can be varied as per local specifications	03 Nos.
28.	Window or Split type Air conditioners	1.5 tons	03 Nos.
29.	Storage cabinet	60x700x450mm	01 No.
30.	White Board.		01 No.
31.	Steel Almirah		01 No.
32.	Air Conditioners	1.5 ton	03 Nos.

D. Raw Materials for a batch of 20 trainees for two semesters			
33.	White Board Marker		As required
34.	Duster Cloth	(2' by 2')	As required
35.	Cleaning Liquid	500 ml	As required
36.	Xerox Paper	(A4)	As required
37.	Full Scape Paper	(White)	2 reams
38.	Cartridges for printer		As required
39.	RJ 45 Jack		200 Pcs.
40.	Optical Mouse	(USB/PS2)	As required
41.	Key Board	(USB/PS2)	As required
42.	SMPS		As required
43.	CMOS Batteries		As required
44.	3 Pin Power Chord		As required
45.	Cat 5/5e cable		100 meter
46.	Stapler Small		2 pcs.
47.	Stapler Big		1 pcs.
48.	AAA battery for remote		As required
49.	AA battery for clock		As required
50.	Pen drives	16 GB	2 Nos.
51.	CDs		50 Nos.
52.	DVDs		50 Nos.
53.	Wall Clock		1 pcs.

TOOLS & EQUIPMENT FOR EMPLOYABILITY SKILLS		
S. No.	**Name of the Equipment**	**Quantity**
1.	Computer (PC) with latest configurations and Internet connection with standard operating system and standard word processor and worksheet software	10 Nos.
2.	UPS - 500Va	10 Nos.
3.	Scanner cum Printer	1 No.
4.	Computer Tables	10 Nos.
5.	Computer Chairs	20 Nos.
6.	LCD Projector	1 No.
7.	White Board 1200mm x 900mm	1 No.
Note: **- Above Tools & Equipments are not required, if Computer LAB is available in the institute.**		

ANNEXURE-II

FORMAT FOR INTERNAL ASSESSMENT

Name & Address of the Assessor:			**Year of Enrollment:**
Name & Address of ITI (Govt./Pvt.):			**Date of Assessment:**
Name & Address of the Industry:			**Assessment location: Industry/ ITI**
Trade Name:	**Semester:**		**Duration of the Trade/course:**
Learning Outcome:			

S No.	**Candidate Name**	**Father's/Mother's Name**	Safety Consciousness (15)	Workplace Hygiene (5)	Attendance/ Punctuality (10)	Ability to Follow Manuals/ Written Instructions (5)	Application of Knowledge (10)	Skills to Handle Tools & Equipment (10)	Economical Use of Materials (5)	Speed in Doing Work (10)	Quality in Workmanship (15)	VIVA (15)	**Total Internal Assessment Marks**	**Result (Y/N)**
Maximum Marks (Total 100 Marks)			**15**	**5**	**10**	**5**	**10**	**10**	**5**	**10**	**15**	**15**		
1														
2														