

# COMPUTER OPERATOR AND PROGRAMMING ASSISTANT

**COMPETENCY BASED CURRICULUM**

(Duration: 1 Yr. and 3 months)

**APPRENTICESHIP TRAINING SCHEME (ATS)**

**NSQF LEVEL- 4**



**SECTOR – IT AND ITES**



सत्यमेव जयते

GOVERNMENT OF INDIA

MINISTRY OF SKILL DEVELOPMENT & ENTREPRENEURSHIP

DIRECTORATE GENERAL OF TRAINING



Directorate General of Training



**Skill India**  
कौशल भारत - कुशल भारत

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(Revised in 2018)

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Developed By

Ministry of Skill Development and Entrepreneurship  
Directorate General of Training  
**CENTRAL STAFF TRAINING AND RESEARCH INSTITUTE**  
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Kolkata – 700 091

The DGT sincerely expresses appreciation for the contribution of the Industry, State Directorate, Trade Experts and all others who contributed in revising the curriculum. Special acknowledgement to the following industries/organizations who have contributed valuable inputs in revising the curricula through their expert members:

1. Sami InfoTech, Nerul, Navi Mumbai
2. Christioni Sharpline Tech Pvt. Ltd, Navi Mumbai.
3. Abvolt India Pvt Ltd, vikroli Mumbai
4. Global Technologies, vashi, Navi Mumbai
5. Festo India Pvt. Ltd, Santacruz Mumbai
6. Maruti Suzuki India Limited, Haryana

Special acknowledgement is extended by DGT to the following expert members who had contributed immensely in this curriculum.

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### **1.1 Apprenticeship Training Scheme under Apprentice Act 1961**

The Apprentices Act, 1961 was enacted with the objective of regulating the programme of training of apprentices in the industry by utilizing the facilities available therein for imparting on-the-job training. The Act makes it obligatory for employers in specified industries to engage apprentices in designated trades to impart Apprenticeship Training on the job in industry to school leavers and person having National Trade Certificate (ITI pass-outs) issued by National Council for Vocational Training (NCVT) to develop skilled manpower for the industry. There are four categories of apprentices namely; **trade apprentice, graduate, technician and technician (vocational) apprentices.**

Qualifications and period of apprenticeship training of **trade apprentices** vary from trade to trade. The apprenticeship training for trade apprentices consists of basic training followed by practical training. At the end of the training, the apprentices are required to appear in a trade test conducted by NCVT and those successful in the trade tests are awarded the National Apprenticeship Certificate.

The period of apprenticeship training for graduate (engineers), technician (diploma holders and technician (vocational) apprentices is one year. Certificates are awarded on completion of training by the Department of Education, Ministry of Human Resource Development.

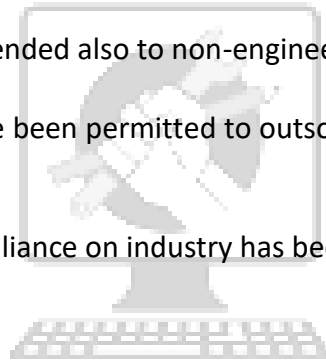
### **1.2 Changes in Industrial Scenario**

Recently we have seen huge changes in the Indian industry. The Indian Industry registered an impressive growth during the last decade and half. The number of industries in India have increased manifold in the last fifteen years especially in services and manufacturing sectors. It has been realized that India would become a prosperous and a modern state by raising skill levels, including by engaging a larger proportion of apprentices, will be critical to success; as will stronger collaboration between industry and the trainees to ensure the supply of skilled workforce and drive development through employment. Various initiatives to build up an adequate infrastructure for rapid industrialization and improve the industrial scenario in India have been taken.

### **1.3 Reformation**

The Apprentices Act, 1961 has been amended and brought into effect from 22<sup>nd</sup> December, 2014 to make it more responsive to industry and youth. Key amendments are as given below:

- Prescription of number of apprentices to be engaged at establishment level instead of trade-wise.
- Establishment can also engage apprentices in optional trades which are not designated, with the discretion of entry level qualification and syllabus.
- Scope has been extended also to non-engineering occupations.
- Establishments have been permitted to outsource basic training in an institute of their choice.
- The burden of compliance on industry has been reduced significantly.



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**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.

Computer Operator and Programming Assistant trade under ATS is one of the most popular courses delivered nationwide through different industries. The course is of one years (01 Block) duration. It mainly consists of Domain area and Core area. In the Domain area Trade Theory & Practical impart professional - skills and knowledge, while Core area - Employability Skills imparts requisite core skills & knowledge and life skills. After passing out the training programme, the trainee is being awarded National Apprenticeship Certificate (NAC) by NCVT having worldwide recognition.

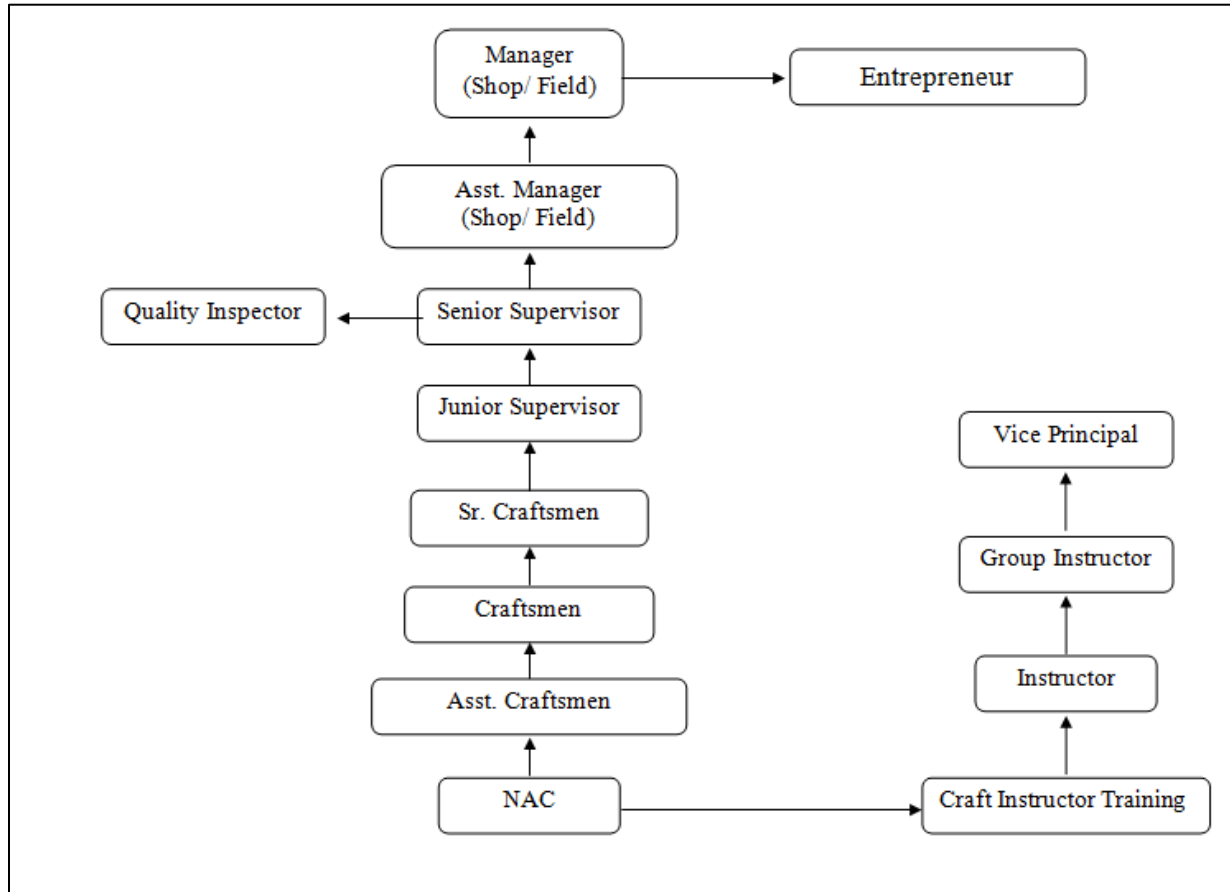
**Broadly candidates need to demonstrate that they are able to:**

- Read & interpret technical parameters/document, 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 skill, knowledge, core skills & employability skills while performing jobs and solve problem during execution.
- Check the job/assembly as per drawing for functioning, identify and rectify errors in job/assembly.
- Document the technical parameters related to the task undertaken.

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### 2.2 CAREER PROGRESSION PATHWAYS:

- Can join Crafts Instructor Training Scheme (CITS) in the trade for becoming instructor in ITIs.
- Indicative pathways for vertical mobility.



### 2.3 COURSE STRUCTURE:

Table below depicts the distribution of training hours across various course elements during a period of one year (*Basic Training and On-Job Training*):-

#### Total training duration details: -

Time (in months)	1-3	4 -15
Basic Training	Block– I	-----
Practical Training (On - job training)	----	Block – I



## Computer Operator and Programming Assistant

### A. Basic Training

For 02 yrs. Course (Non-Engg.) : **Total 03 months:** 03 months in 1<sup>st</sup>yr.only

For 01 yr. Course (Non-Engg) : **Total 03 months:** 03 months in 1<sup>st</sup>yr.

Sl. No.	Course Element	Total Notional Training Hours
		<b>For 01 yr. course</b>
1	Professional Skill (Trade Practical)	270
2	Professional Knowledge (Trade Theory)	120
3	Employability Skills	110
	<b>Total (including Internal Assessment)</b>	<b>500</b>

### B. On-Job Training:-

For 01 yr. Course (Non-Engg.) : ( **Total 12 months**)

Notional Training Hours for On-Job Training: 2080 Hrs.

### C. Total training hours:-

Duration	Basic Training	On-Job Training	Total
For 02 yrs. Course(Non-Engg.)	500 hrs.	3640 hrs.	4140 hrs.
For 01 yr. Course(Non-Engg.)	500 hrs.	2080 hrs.	2580 hrs.

## 2.4 ASSESSMENT & CERTIFICATION:

The trainee will be tested for his skill, knowledge and attitude during the period of course and at the end of the training programme as notified by Govt. of India from time to time. The Employability skills will be tested in first two semesters only.

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 have to maintain 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 NAC will be conducted by NCVT on completion of course as per guideline of Govt. of India. The pattern and marking structure is being notified by Govt. of India

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from time to time. **The learning outcome and assessment criteria will be basis for setting question papers for final assessment. The examiner during final examination will also check individual trainee's profile as detailed in assessment guideline before giving marks for practical examination.**

### **2.4.1 PASS REGULATION**

The minimum pass percent for Practical is 60% & minimum pass percent for Theory subjects 40%. The candidate pass in each subject conducted under all India trade test.

### **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 assessment. Due consideration should be given while assessing for team work, avoidance/reduction of scrap/wastage and disposal of scarp/wastage as per procedure, behavioral attitude, sensitivity to 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

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

<b>Performance Level</b>	<b>Evidence</b>
<b>(a) Weightage in the range of 60 -75% to be allotted during assessment</b>	
For performance in this grade, the candidate with occasional guidance and showing due regard for safety procedures and practices, has produced work which demonstrates attainment of an acceptable standard of craftsmanship.	<ul style="list-style-type: none"> <li>• Demonstration of good skill in the use of hand tools, machine tools and workshop equipment</li> <li>• Below 70% tolerance dimension/accuracy achieved while undertaking different work with those demanded by the component/job/set standards.</li> <li>• A fairly good level of neatness and consistency in the finish</li> <li>• Occasional support in completing the project/job.</li> </ul>
<b>(b)Weightage in the range of above75% - 90% to be allotted during assessment</b>	
For this grade, the candidate, with little guidance and showing due regard for safety procedures and practices, has produced work which demonstrates attainment of a reasonable standard of craftsmanship.	<ul style="list-style-type: none"> <li>• Good skill levels in the use of hand tools, machine tools and workshop equipment</li> <li>• 70-80% tolerance dimension/accuracy achieved while undertaking different work with those demanded by the component/job/set standards.</li> <li>• A good level of neatness and consistency in the finish</li> <li>• Little support in completing the project/job</li> </ul>
<b>(c) Weightage in the range of above 90% to be allotted during assessment</b>	
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.	<ul style="list-style-type: none"> <li>• High skill levels in the use of hand tools, machine tools and workshop equipment</li> <li>• Above 80% tolerance dimension/accuracy achieved while undertaking different work with those demanded by the component/job/set standards.</li> <li>• A high level of neatness and consistency in the finish.</li> <li>• Minimal or no support in completing the project.</li> </ul>

**Brief description of Job roles:**

After completion of the course the apprentices shall be qualified for one or more of the following job roles:

1. Office Automation.
2. Smart Accounting.
3. Web design and maintenance.
4. Computer maintenance.
5. Computer Training in schools and institutes.
6. Cyber Cafe setup and management.
7. IT online support



**Reference NCO:**

- i) NCO-2015: 4131.0600 Computer Operator
- ii) NCO-2015: 3514.0300 Programming Assistant

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## 4. NSQF LEVEL COMPLIANCE

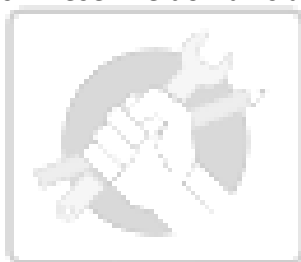
NSQF level for Computer Operator and Programming Assistant trade under ATS: **Level 4**

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 and
- e. Responsibility.



The Broad Learning outcome of Computer Operator and Programming Assistant trade under ATS mostly matches with the Level descriptor at Level- 4.

The NSQF level-4 descriptor is given below:

Level	Process Required	Professional Knowledge	Professional Skill	Core Skill	Responsibility
Level 4	Work in familiar, predictable, routine, situation of clear choice.	Factual Knowledge of field of knowledge or study	Recall and demonstrate practical skill, routine and repetitive in narrow range of application, using appropriate rule and tool, using quality concepts	Language to communicate written or oral, with required clarity, skill to basic Arithmetic and algebraic principles, basic understanding of social political and natural environment.	Responsibility for own work and learning.

**5. GENERAL INFORMATION**

<b>Name of the Trade</b>	Computer Operator and Programming Assistant
<b>NCO - 2015</b>	4131.0600, 3514.0300
<b>NSQF Level</b>	Level – 4
<b>Duration of Apprenticeship Training</b> (Basic Training + On-Job Training)	3 months + One year (01 Block of 15 months duration).
<b>Duration of Basic Training</b>	a) Block –I : 3 months <b>Total duration of Basic Training: 3 months</b>
<b>Duration of On-Job Training</b>	a) Block–I: 12 months <b>Total duration of Practical Training: 12 months</b>
<b>Entry Qualification</b>	Passed 10 <sup>th</sup> class examination or its equivalent.
<b>Selection of Apprenticeship</b>	The apprentices will be selected as per Apprenticeship Act amended time to time.
<b>Instructors Qualification for Basic Training</b>	As per ITI instructors qualifications as amended time to time for the specific trade.
<b>Infrastructure for basic training</b>	As per the related trade of ITI
<b>Examination</b>	The internal examination/ assessment will be held on completion of each block. Final examination for all subjects will be held at the end of course and same will be conducted by NCVT.
<b>Rebate to Ex-ITI Trainees</b>	03 months
<b>CTS trades eligible for Computer Operator and Programming Assistant Apprenticeship</b>	Computer Operator and Programming Assistant

**Note:**

- *Industry may impart training as per above time schedule for different block, however this is not fixed. The industry may adjust the duration of training considering the fact that all the components under the syllabus must be covered. However the flexibility should be given keeping in view that no safety aspects is compromised.*
- *For imparting Basic Training the industry to tie-up with ITIs having such specific trade and affiliated to NCVT.*

**6.1 GENERIC LEARNING OUTCOME**

The following are minimum broad Common Occupational Skills/ Generic Learning Outcome after completion of the Computer Operator and Programming Assistant course of 01 year and 03 months duration under ATS.

**Block - I:-**

1. Recognize & comply safe working practices, environment regulation and housekeeping.
2. Explain the concept in productivity, quality tools, and labour welfare legislation and apply such in day to day work to improve productivity & quality.
3. Explain energy conservation, global warming and pollution and contribute in day to day work by optimally using available resources.
4. Explain personnel finance, entrepreneurship and manage/organize related task in day to day work for personal & societal growth.
5. Plan and organize the work related to the occupation.

**6.2 SPECIFIC LEARNING OUTCOME**

**Block – I**

1. Formatting the hard disk and loading O.S. and necessary application software. Practice of using shortcut keys of Word Processing Software. Creating a simple presentation project using Open Office. Working with Open Office for word processing and spreadsheet application.
2. In Ms-Access - Creating Simple update, append, make table, delete and crosstab queries. Modifying form design with controls, macros and events. Importing and exporting data to and from Access. Compressing and Encrypting databases.
3. Configuring Hub and Switch. Setting up and configuring LAN in a Computer Lab as peer to peer network. Setting up a proxy server / DHCP Server with firewall. Setting up video conferencing.

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4. Designing Web Pages with Forms and Form Controls using HTML tags. Creating Web Pages using CSS. Using WYSIWYG web design tools to design and edit web pages with various styles.
5. Java Script - Working with Arrays, Control statements and Loops in JavaScript. Writing functions in JavaScript. Working with String, Math and Date functions in JavaScript. Switch, Loops, Breaks and Errors.
6. Using Java Script Objects. Working with JavaScript Libraries. Using simple Open source web server (like XAMPP) and FTP software (For ex. Filezilla).
7. Programming with VBA - Writing programs involving Mathematical, Conversion, Date and String Functions in VBA. Writing programs involving Loops. Using VBA built in functions in programs. Using VBA built in functions in programs.
8. Creating and editing macros. Writing code to work with Excel VBA forms and form controls like buttons, Checkboxes, Labels, ComboBox, GroupBox, ListBox, Option Button, Scroll Bar and Spin button. Modification of object properties.
9. Using ActiveX controls. Programming with methods and events. Debugging, Stepping Through Code, Breakpoints, Finding and Fixing Errors.
10. Performing Cost Centre & Cost Category management. Managing Budgeting Systems. Scenario management and Variance Analysis. Using Tally for Costing, Ratio Analysis, Cash Flow, Funds Flow Statements. Analysing and Managing Inventory. Performing Point of Sales and Taxation.
11. Performing Systems Administration and using other Utilities, User creation, Backup & Restore of Company. Using the Multilingual Functionality. Using E Commerce Simulator Software for Marketplace Business Simulation. Identifying and solving security issues in E-commerce and payment operations. Typing Practice in Regional Languages.
12. A Simple project using Word, Excel, Access, HTML, CSS, JavaScript, VBA, Tally or Networking.
13. A Simple project to present their learning through power point presentation.

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



**7. LEARNING OUTCOME WITH ASSESSMENT CRITERIA**

<b>GENERIC LEARNING OUTCOME</b>	
<b>LEARNING OUTCOMES</b>	<b>ASSESSMENT CRITERIA</b>
1. Recognize & comply safe working practices, environment regulation and housekeeping.	1. 1. Follow and maintain procedures to achieve a safe working environment in line with occupational health and safety regulations and requirements.
	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/unsalvageable 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.
	1. 12. Identify environmental pollution & contribute to avoidance of same.
	1. 13. Take opportunities to use energy and materials in an environmentally friendly manner.
	1. 14. Avoid waste and dispose waste as per procedure.
	1. 15. Recognize different components of 5S and apply the same in the working environment.
2. Explain the concept in productivity, quality tools,	2.1 Explain the concept of productivity and quality tools and apply during execution of job.

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and labour welfare legislation and apply such in day to day work to improve productivity & quality.	2.2 Understand the basic concept of labour welfare legislation and adhere to responsibilities and remain sensitive towards such laws.
	2.3 Knows benefits guaranteed under various acts
3. Explain energy conservation, global warming and pollution and contribute in day to day work by optimally using available resources.	3.1 Explain the concept of energy conservation, global warming, pollution and utilize the available resources optimally & remain sensitive to avoid environment pollution.
	3.2 Dispose waste following standard procedure.
4. Explain personnel finance, entrepreneurship and manage/organize related task in day to day work for personal & societal growth.	4. 1. Explain personnel finance and entrepreneurship.
	4. 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 familiarizes with the Policies /Programmes & procedure & the available scheme.
	4. 3. Prepare Project report to become an entrepreneur for submission to financial institutions.
5. Plan and organize the work related to the occupation.	5. 1. Use documents, drawings and recognize hazards in the work site.
	5. 2. Plan workplace/ assembly location with due consideration to operational stipulation
	5. 3. Communicate effectively with others and plan project tasks
	5. 4. Assign roles and responsibilities of the co-trainees for execution of the task effectively and monitor the same.
<b>SPECIFIC OUTCOME</b>	
<b>Block-I (Section:10 in the competency based curriculum)</b>	
<p><i>Assessment Criteria i.e. the standard of performance, for each specific learning outcome mentioned under <b>Block – I</b>(section: 10) must ensure that the trainee works in familiar, predictable, routine, situation of clear choice. Assessment criteria should broadly cover the aspect of <b>Planning</b> (Identify, ascertain, etc.); <b>Execution</b> apply factual knowledge of field of knowledge, recall and demonstrate practical skill during performing the work in routine and repetitive in narrow range of application, using appropriate rule and tool, complying with basic arithmetic and algebraic principles and language to communicate in written or oral with required clarity; <b>Checking/ Testing</b> to ensure functionality during the assessment of each outcome. The assessments parameters must also ascertain that the candidate is responsible for his/her own work and learning.</i></p>	

**BASIC TRAINING (Block – I)**  
**Duration: (03) Three Months**

Week No.	Professional Skills (Trade Practical)	Professional Knowledge (Trade Theory)
1.	<p><b>Computer components and Windows Operating System</b></p> <ul style="list-style-type: none"> <li>Disassembling, Identification of components and Reassembling a Desktop computer.</li> <li>Familiarization with Windows O.S desktop, using icons, buttons and customizing the desktop.</li> <li>Managing files and folders, using removable drives.</li> <li>Viewing system properties and control panel details. Viewing and setting environmental variables.</li> <li>Working with MS Paint.</li> </ul> <p><b>Computer Hardware basics and Software Installation</b></p> <ul style="list-style-type: none"> <li>Viewing the BIOS and changing the Boot order.</li> <li>Identify and rectify common hardware and software issues.</li> <li>Installation of DVD, using different types of hard disks.</li> <li>Bluetooth Configuration, DVD write techniques.</li> </ul>	<p><b>Introduction to Computers and Windows Operating System</b></p> <ul style="list-style-type: none"> <li>History, Generations, Types, Advantages and Applications of Computers.</li> <li>Concepts of Hardware and Software. Computer Hardware basics.</li> <li>Introduction to various processors.</li> <li>Introduction to the functions of an Operating System, Popular Operating Systems in Use.</li> <li>Main features of Windows O.S</li> <li>Various Input/ Output devices in use and their features.</li> <li>Using Scanner, Printer and Webcam.</li> </ul> <p><b>Computer Hardware basics and Software Installation</b></p> <ul style="list-style-type: none"> <li>Introduction to the booting process, BIOS settings and their modification.</li> <li>Introduction to various types of memories and their features.</li> <li>Basic Hardware and software issues and their solutions.</li> </ul> <p>Formatting and Loading O.S and Application software and Antivirus.</p>
2.	<p><b>Familiarization with DOS CLI &amp; Linux Operating Systems.</b></p> <ul style="list-style-type: none"> <li>Using basic DOS commands for directory listing, file and folder management etc.</li> <li>Using Basic Linux commands for</li> </ul>	<p><b>Introduction to DOS Command Line Interface &amp; Linux Operating System.</b></p> <ul style="list-style-type: none"> <li>Introduction to basic DOS Internal and External Commands.</li> <li>Introduction to Open Source Software.</li> </ul>

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	<p>directory listing, file and folder management, password etc.</p> <ul style="list-style-type: none"> <li>Using the Linux graphical user interface for file and folder management, exploring the system etc.</li> </ul> <p><b>Using Word Processing Software</b></p> <ul style="list-style-type: none"> <li>Familiarization with the Word window components.</li> <li>Creating, saving and editing documents using Word.</li> <li>Inserting and formatting tables and other objects.</li> <li>Using templates, autocorrect tools, macros and the mail merge tool.</li> <li>Working with Page layout settings and printing documents.</li> <li>Typing practice using open source typing tutor tools.</li> </ul>	<ul style="list-style-type: none"> <li>Introduction to Linux Operating System features, structure, files and processes.</li> <li>Introduction to various Linux Shells. Basic Linux commands.</li> </ul> <p><b>Word Processing</b></p> <ul style="list-style-type: none"> <li>Introduction to the various applications in office.</li> <li>Introduction to Word features, Office button, toolbars.</li> <li>Creating, saving and formatting and printing documents using Word.</li> <li>Working with inserting objects, macro, mail merge, templates and other tools in Word.</li> <li>Page setup and Printing Documents using word.</li> </ul>
3.	<p><b>Using Spread Sheet Application</b></p> <ul style="list-style-type: none"> <li>Creating, Saving and Formatting Excel Spreadsheets.</li> <li>Using Absolute and Relative referencing, linking sheets, Conditional formatting etc.</li> <li>Using Excel functions of all major categories.</li> <li>Using various data types in Excel, Sorting, filtering and validating data.</li> <li>Creating and formatting charts.</li> <li>Importing &amp;Exporting Excel Data.</li> <li>Performing data analysis using “what if” tools.</li> </ul>	<p><b>Spread Sheet Application</b></p> <ul style="list-style-type: none"> <li>Introduction to Excel features and Data Types.</li> <li>Cell referencing. Use of functions of various categories, linking Sheets.</li> <li>Introduction to various functions in all categories of Excel.</li> <li>Concepts of Sorting, Filtering and Validating Data.</li> <li>Analysing data using charts, data tables, pivot tables, goal seek and scenarios. Introduction to Reporting.</li> <li>Concepts lookups (V lookup, H lookup).</li> </ul>

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	<ul style="list-style-type: none"> <li>• Modifying Excel Page setup and printing.</li> <li>• Working with lookups (V lookup, H lookup).</li> </ul>	
4-5	<p><b>Image editing, Creating presentations &amp; Using Open Office</b></p> <ul style="list-style-type: none"> <li>• Use of windows and open source image editing software like Open Office Draw, GIMP, Irfan View or a similar tool.</li> <li>• Creating Slide shows, Inserting objects.</li> <li>• Animating Slide transitions and Objects.</li> </ul> <p><b>Database Management</b></p> <ul style="list-style-type: none"> <li>• Creating database and designing a simple tables in Access.</li> <li>• Enforcing Integrity Constraints and modifying the properties of tables and fields.</li> <li>• Creating Relationships and joining tables.</li> <li>• Creating Forms.</li> <li>• Creating simple select queries with various criteria and calculations.</li> </ul>	<p><b>Image editing, Creating presentations &amp; Using Open Office</b></p> <ul style="list-style-type: none"> <li>• Introduction to Open Office.</li> <li>• Introduction to the properties and editing of images.</li> <li>• Introduction to Power Point and its advantages.</li> <li>• Creating Slide Shows.</li> <li>• Fine tuning the presentation and good presentation techniques.</li> </ul> <p><b>Database Management Systems</b></p> <ul style="list-style-type: none"> <li>• Concepts of Data, Information and Databases. Overview of popular databases, RDBMS, OODB and NOSQL.</li> <li>• Rules for designing good tables. Integrity rules and constraints in a table.</li> <li>• Relationships in tables.</li> <li>• Introduction to various types of Queries and their uses.</li> <li>• Designing Access Reports and Forms.</li> <li>• Introduction to macros, designer objects controls, their properties and behaviour.</li> </ul>
6-7	<p><b>Configuring and Using Networks</b></p> <ul style="list-style-type: none"> <li>• Viewing Network connections.</li> <li>• Connecting a computer to a network and sharing of Devices, files and Folders.</li> <li>• Familiarization with various Network devices, Connectors</li> </ul>	<p><b>Networking Concepts</b></p> <ul style="list-style-type: none"> <li>• Introduction to Computer Networks, Necessity and Advantages.</li> <li>• Client Server and peer to Peer networking concepts.</li> <li>• Concept of Proxy Server and proxy firewall server.</li> </ul>

<p>and Cables.</p> <ul style="list-style-type: none"> <li>• IP Addressing and Subnet for IPV4 / IPV6, Masking, pinging to test networks.</li> <li>• Using various tools for computer maintenance, Network security.</li> </ul> <p><b>Internet Concepts</b></p> <ul style="list-style-type: none"> <li>• Browsing the Internet for information.</li> <li>• Creating and using e – mail for communication.</li> <li>• Communication using text, video chatting and social networking sites.</li> <li>• Identifying various threats to the system connected to the net.</li> <li>• Protecting the computer against various internet threats.</li> <li>• Configure Outlook, mail service in mobile phones. Using tools like Skype, Google+ etc.</li> </ul> <p><b>Designing Static Web Pages</b></p> <ul style="list-style-type: none"> <li>• Designing simple web pages with text, pictures, tables, lists, hyperlinks, frames, marquees etc. using HTML tags.</li> <li>• Dividing website using division tag in html 5, embed Google map into website, how to put readymade slider, scrolling images, zoom image on mouse over, create navigation menubar in html using list put image icon with links.</li> <li>• Convert PSD file to html document using html tags and images.</li> </ul>	<ul style="list-style-type: none"> <li>• Network topologies. Introduction to LAN, WAN and MAN.</li> <li>• Network components, viz. Modem, Hub, Switch, Router, Bridge, Gateway etc.</li> <li>• Network Cables, Wireless networks and Blue Tooth technology.</li> <li>• Concept of ISO - OSI 7 Layer Model.</li> <li>• Overview of various Network protocols Viz. TCP/IP, FTP, Telnet etc.</li> <li>• Logical and Physical Addresses, Classes of Networks.</li> <li>• Network Security &amp; firewall concepts.</li> <li>• Concept of DHCP Server.</li> </ul> <p><b>Internet Concepts</b></p> <ul style="list-style-type: none"> <li>• Introduction to WWW, Concept of Internet, Web Browsers, internet servers and search engines.</li> <li>• Concepts of Domain naming Systems and E mail communication.</li> <li>• Introduction to video chatting tools, VOIP and Social Networking concepts.</li> <li>• Concept of Cloud storage and Open Web Server.</li> <li>• Introduction to Internet Security, Threats and attacks, Malicious Software types, Internet security products and their advantages.</li> </ul> <p><b>Web Design Concepts</b></p> <ul style="list-style-type: none"> <li>• Concepts of Static and Dynamic Web pages.</li> <li>• Introduction to HTML and various tags in HTML.</li> <li>• Creating Forms with controls using HTML.</li> </ul>
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## Computer Operator and Programming Assistant

		<ul style="list-style-type: none"> <li>• Concepts of CSS and applying CSS to HTML</li> <li>• Introduction to open source CMS viz. Joomla, Wordpress etc. and Web authoring tools viz. KompoZer, FrontPage etc.</li> <li>• Basic Concepts of Flash and Dreamweaver.</li> </ul>
8-9	<p><b>Java Script</b></p> <ul style="list-style-type: none"> <li>• Familiarization with JavaScript elements.</li> <li>• Embedding JavaScript in HTML to display information in web pages. Documentation and Formatting.</li> <li>• Using JavaScript Variables, Data types, Constants and Operators.</li> <li>• Working with functions, and calling of function on JavaScript events.</li> <li>• Create running clock on website using JavaScript.</li> <li>• Find users browser and operating system using javascript.</li> <li>• Client side validation of form in javascript.</li> </ul>	<p><b>Java Script</b></p> <ul style="list-style-type: none"> <li>• Algorithms and flowcharts.</li> <li>• Introduction to Web Servers and their features.</li> <li>• Introduction to Programming and Scripting Languages.</li> <li>• Introduction to JavaScript and its application for the web.</li> <li>• JavaScript Basics – Data types, Variables, Constants. Conversion between data types.</li> <li>• The Arithmetic, Comparison, Logical and String Operators in JavaScript. Operator precedence.</li> <li>• Arrays in JavaScript – concepts, types and usage.</li> <li>• Program Control Statements and loops in JavaScript.</li> <li>• Introduction to Functions in JavaScript.</li> <li>• Built in JavaScript functions overview.</li> <li>• The String data type in JavaScript. Introduction to String, Math and Date Functions.</li> <li>• Concepts of Pop Up boxes in JavaScript.</li> <li>• Introduction to the Document Object Model.</li> </ul>

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10-11	<p><b>Programming with VBA</b></p> <ul style="list-style-type: none"> <li>• Familiarization with the VBA Editor.</li> <li>• Writing simple programs involving VBA Data types, Variables, Operators and Constants.</li> <li>• Working with string variables in VBA.</li> <li>• Creating and Manipulating Arrays in VBA.</li> <li>• Working with conditional statements like If, Elseif, Select ... Case statements in VBA.</li> <li>• Creating Message boxes and Input boxes in VBA.</li> <li>• Creating Functions and Procedures. Passing Parameters and Using Returned Data.</li> </ul>	<p><b>Introduction to VBA, Features and Applications.</b></p> <ul style="list-style-type: none"> <li>• Introduction to VBA features and applications.</li> <li>• VBA Data types, Variables and Constants.</li> <li>• Operators in VBA and operator precedence.</li> <li>• Mathematical Expressions in VBA.</li> <li>• Introduction to Strings in VBA.</li> <li>• Introduction to Arrays in VBA.</li> <li>• Conditional processing in VBA, using the IF, Elseif, Select... Case Statements.</li> <li>• Loops in VBA Introduction to VBA.</li> <li>• VBA message boxes and input boxes.</li> <li>• Introduction to Creating functions and Procedures in VBA.</li> <li>• Using the built in functions.</li> <li>• Creating and editing macros.</li> <li>• Introduction to Object Oriented Programming Concepts. Concepts of Classes, Objects, Properties and Methods.</li> <li>• Events and Event driven programming concepts.</li> <li>• The user forms and control in Excel VBA.</li> <li>• Properties, events and methods associated with the Button, Check Box, Label, ComboBox, Group Box, Option Button, List Box, Scroll Bar and Spin button controls.</li> <li>• Overview of ActiveX Data objects.</li> <li>• Debugging Techniques.</li> </ul>
12	<p><b>Using Accounting Software</b></p> <ul style="list-style-type: none"> <li>• Basic accounting practice.</li> </ul>	<p><b>Smart Accounting</b></p> <ul style="list-style-type: none"> <li>• Basics of Accounting, Golden Rules</li> </ul>



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	<ul style="list-style-type: none"> <li>• Familiarization with the Tally interface.</li> <li>• Company creation, Account Creation, Voucher Entry in Tally.</li> <li>• Report Generation (Creating statements like Invoice, Bill, Profit &amp; Loss account etc.).</li> </ul> <p><b>E Commerce</b></p> <ul style="list-style-type: none"> <li>• Familiarization with latest E commerce websites viz. E bay, Amazon, FlipCart, OLX, Quikr etc. and comparative study of the main features of these sites.</li> </ul>	<p>of Accounting, Voucher Entry, Ledger Posting, Final Accounts Preparation.</p> <ul style="list-style-type: none"> <li>• Cash Book. Ratio Analysis, Depreciation, Stock Management.</li> <li>• Analysis of VAT, Cash Flow, Fund Flow Accounting.</li> <li>• Introduction to Tally, features and Advantages.</li> <li>• Implementing accounts in Tally.</li> <li>• Double entry system of bookkeeping.</li> <li>• Budgeting Systems, Scenario management and Variance Analysis.</li> <li>• Costing Systems, Concepts of Ratios, Analysis of financial statements, Inventory Basics, POS Invoicing, TDS, TCS, FBT, VAT &amp; Service Tax Processing in Tally.</li> <li>• Tally Interface in Different Languages.</li> </ul> <p><b>E Commerce</b></p> <ul style="list-style-type: none"> <li>• Definition of E commerce, Types, scope and benefits of E commerce.</li> <li>• Difference between E commerce and traditional commerce.</li> <li>• Capabilities requirements and Technology issues for E commerce.</li> <li>• Types of E commerce web sites.</li> <li>• Building business on the net.</li> <li>• Concepts of on line Catalogues, Shopping carts, Checkout pages.</li> </ul>
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## Computer Operator and Programming Assistant

		<ul style="list-style-type: none"><li>• Payment and Order Processing, Authorization, Chargeback and other payment methods.</li><li>• Security issues and payment gateways.</li></ul> <p><b>Cyber Security:</b></p> <ul style="list-style-type: none"><li>• Overview of Information Security, Security threats, information Security vulnerability and Risk management</li><li>• Introduction to Directory Services, Access Control, Software Development Security, Privacy protection, Audit and Security. Introduction to I.T Act and penalties for cybercrimes.</li></ul>
13	<b>Assessment/Examination 03days</b>	

**NOTE:** - More emphasis to be given on video/real-life pictures during theoretical classes. Some real-life pictures/videos of related industry operations may be shown to the trainees to give a feel of Industry and their future assignment.

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9.1 EMPLOYABILITY SKILLS

(DURATION: - 110 HRS.)

<b>Block – I</b> (Duration – 55 hrs.)	
<b>1. English Literacy</b> Duration: 20 Hrs. <span style="float: right;">Marks : 09</span>	
<b>Pronunciation</b>	Accentuation (mode of pronunciation) on simple words, Diction (use of word and speech)
<b>Functional Grammar</b>	Transformation of sentences, Voice change, Change of tense, Spellings.
<b>Reading</b>	Reading and understanding simple sentences about self, work and environment
<b>Writing</b>	Construction of simple sentences Writing simple English
<b>Speaking / Spoken English</b>	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.
<b>2. I.T. Literacy</b> Duration: 20 Hrs. <span style="float: right;">Marks : 09</span>	
<b>Basics of Computer</b>	Introduction, Computer and its applications, Hardware and peripherals, Switching on-Starting and shutting down of computer.
<b>Computer Operating System</b>	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.
<b>Word processing and Worksheet</b>	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.
<b>Computer Networking and Internet</b>	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,

## Computer Operator and Programming Assistant

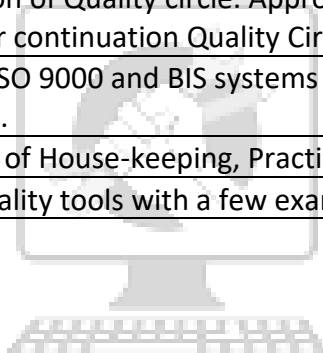
	Web page and Search Engines. Accessing the Internet using Web Browser, Downloading and Printing Web Pages, Opening an email account and use of email. Social media sites and its implication. Information Security and antivirus tools, Do's and Don'ts in Information Security, Awareness of IT - ACT, types of cybercrimes.
<b>2. Communication Skills</b>	
Duration: 15 Hrs. <span style="float: right;">Marks : 07</span>	
<b>Introduction to Communication Skills</b>	Communication and its importance Principles of Effective communication Types of communication - verbal, nonverbal, written, email, talking on phone. Nonverbal communication -characteristics, components-Para-language Body language Barriers to communication and dealing with barriers. Handling nervousness/ discomfort.
<b>Listening Skills</b>	Listening-hearing and listening, effective listening, barriers to effective listening guidelines for effective listening. Triple- A Listening - Attitude, Attention & Adjustment. Active Listening Skills.
<b>Motivational Training</b>	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.
<b>Facing Interviews</b>	Manners, Etiquettes, Dress code for an interview Do's & Don'ts for an interview.
<b>Behavioral Skills</b>	Problem Solving Confidence Building Attitude
<b>3. Entrepreneurship Skills</b>	
Duration: 15 Hrs. <span style="float: right;">Marks : 06</span>	
<b>Concept of Entrepreneurship</b>	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.
<b>Project Preparation &amp; Marketing analysis</b>	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.

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<b>Institutions Support</b>	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.
<b>Investment Procurement</b>	Project formation, Feasibility, Legal formalities i.e., Shop Act, Estimation & Costing, Investment procedure - Loan procurement - Banking Processes.
<b>4. Productivity</b>	
Duration: 10 Hrs.	Marks : 05
<b>Benefits</b>	Personal / Workman - Incentive, Production linked Bonus, Improvement in living standard.
<b>Affecting Factors</b>	Skills, Working Aids, Automation, Environment, Motivation - How improves or slows down.
<b>Comparison with developed countries</b>	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.
<b>Personal Finance Management</b>	Banking processes, Handling ATM, KYC registration, safe cash handling, Personal risk and Insurance.
<b>5. Occupational Safety, Health and Environment Education</b>	
Duration: 15 Hrs.	Marks : 06
<b>Safety &amp; Health</b>	Introduction to Occupational Safety and Health importance of safety and health at workplace.
<b>Occupational Hazards</b>	Basic Hazards, Chemical Hazards, Vibroacoustic Hazards, Mechanical Hazards, Electrical Hazards, Thermal Hazards. Occupational health, Occupational hygienic, Occupational Diseases/ Disorders & its prevention.
<b>Accident &amp; safety</b>	Basic principles for protective equipment. Accident Prevention techniques - control of accidents and safety measures.
<b>First Aid</b>	Care of injured & Sick at the workplaces, First-Aid & Transportation of sick person.
<b>Basic Provisions</b>	Idea of basic provision legislation of India. Safety, health, welfare under legislative of India.
<b>Ecosystem</b>	Introduction to Environment. Relationship between Society and Environment, Ecosystem and Factors causing imbalance.
<b>Pollution</b>	Pollution and pollutants including liquid, gaseous, solid and hazardous waste.
<b>Energy Conservation</b>	Conservation of Energy, re-use and recycle.
<b>Global warming</b>	Global warming, climate change and Ozone layer depletion.
<b>Ground Water</b>	Hydrological cycle, ground and surface water, Conservation and Harvesting of water.
<b>Environment</b>	Right attitude towards environment, Maintenance of in -house

## Computer Operator and Programming Assistant

	environment.
<b>6. Labour Welfare Legislation</b>	
Duration: 05 Hrs. <span style="float: right;">Marks : 03</span>	
<b>Welfare Acts</b>	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.
<b>7. Quality Tools</b>	
Duration: 10 Hrs. <span style="float: right;">Marks : 05</span>	
<b>Quality Consciousness</b>	Meaning of quality, Quality characteristic.
<b>Quality Circles</b>	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.
<b>Quality Management System</b>	Idea of ISO 9000 and BIS systems and its importance in maintaining qualities.
<b>House Keeping</b>	Purpose of House-keeping, Practice of good Housekeeping.
<b>Quality Tools</b>	Basic quality tools with a few examples.



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## **10. DETAILS OF COMPETENCIES (ON-JOB TRAINING)**

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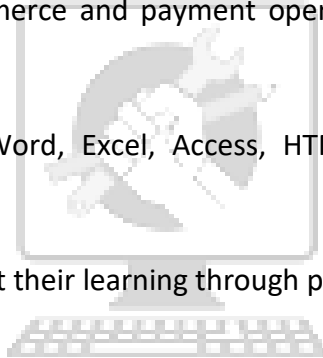
The **competencies/ specific outcomes** on completion of On-Job Training are detailed below: -

### **Block – I**

1. Formatting the hard disk and loading O.S and necessary application software. Practice of using shortcut keys of Word Processing Software. Creating a simple presentation project using Open Office. Working with Open Office for word processing and spreadsheet application.
2. In Ms-Access - Creating Simple update, append, make table, delete and crosstab queries. Modifying form design with controls, macros and events. Importing and exporting data to and from Access. Compressing and Encrypting databases.
3. Configuring Hub and Switch. Setting up and configuring LAN in a Computer Lab as peer to peer network. Setting up a proxy server/ DHCP Server with firewall. Setting up video conferencing.
4. Designing Web Pages with Forms and Form Controls using HTML tags. Creating Web Pages using CSS. Using WYSIWYG web design tools to design and edit web pages with various styles.
5. Java Script - Working with Arrays, Control statements and Loops in JavaScript. Writing functions in JavaScript. Working with String, Math and Date functions in JavaScript. Switch, Loops, Breaks and Errors.
6. Using Java Script Objects. Working with JavaScript Libraries. Using simple Open source web server (like XAMPP) and FTP software (For ex. Filezilla).
7. Programming with VBA - Writing programs involving Mathematical, Conversion, Date and String Functions in VBA. Writing programs involving Loops. Using VBA built in functions in programs. Using VBA built in functions in programs.
8. Creating and editing macros. Writing code to work with Excel VBA forms and form controls like buttons, Checkboxes, Labels, ComboBox, GroupBox, ListBox, Option Button, Scroll Bar and Spin button. Modification of object properties.

## ***Computer Operator and Programming Assistant***

9. Using ActiveX controls. Programming with methods and events. Debugging, Stepping Through Code, Breakpoints, Finding and Fixing Errors.
10. Performing Cost Centre & Cost Category management. Managing Budgeting Systems. Scenario management and Variance Analysis. Using Tally for Costing, Ratio Analysis, Cash Flow, Funds Flow Statements. Analysing and Managing Inventory. Performing Point of Sales and Taxation.
11. Performing Systems Administration and using other Utilities, User creation, Backup & Restore of Company. Using the Multilingual Functionality. Using E Commerce Simulator Software for Marketplace Business Simulation. Identifying and solving security issues in E-commerce and payment operations. Typing Practice in Regional Languages.
12. A Simple project using Word, Excel, Access, HTML, CSS, JavaScript, VBA, Tally or Networking.
13. A Simple project to present their learning through power point presentation.



### **Note:**

1. Industry must ensure that above mentioned competencies are achieved by the trainees during their on job training.
2. In addition to above competencies/ outcomes industry may impart additional training relevant to the specific industry.

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**INFRASTRUCTURE FOR PROFESSIONAL SKILL & PROFESSIONAL KNOWLEDGE**

<b>COMPUTER OPERATOR AND PROGRAMMING ASSISTANT</b>			
<b>LIST OF EQUIPMENTS, SOFTWARES &amp; TOOLS for Basic Training (For 20 Apprentices)</b>			
<b>A. Tools and Equipment</b>			
<b>Sl. no.</b>	<b>Name of the Tool &amp; Equipments</b>	<b>Specification</b>	<b>Quantity</b>
1	Desktop Computers of the 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:- 8 GB DDR-III or Higher. Hard Disk Drive: 500GB or Higher, 7200 rpm (minimum) or Higher, Wi-Fi 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
2	Laptop	4 <sup>th</sup> Gen Ci5 Processor, 4GB RAM, 1TB Hard Disk, Win8 Preloaded Licensed OS, 2GB Graphics Card, DVD Writer, Standard Ports And Connectors.	1
3	Wi-Fi Router / Switch With Wireless Connectivity option	24 Port	1
4	Lab should have Structured cabling (to enable working with Wired Networks too for Practical)		As required
5	Internet or Intranet Connectivity		As required
6	Laser Printer Mochrome	A4 Size	1
7	Network Mochrome Laser Printer	A4 Size	1

### ***Computer Operator and Programming Assistant***

8	Optical Scanner (Flatbed A4)		1
9	Digital Web Cam (High Resolution)		4
10	DVD or Blu-Ray Writer		2
11	LCD Projector with matte(antiglare) screen		1
12	Online UPS	2KVA	2
13	Cable crimping tool		1
14	Standalone Hard Disks	500 GB or Higher	4
15	Network Rack		1
16	Barcode Scanner		1
17	Digital Multimeters, handheld type.	3.5 digit	8
18	Standard Screw Driver Set		10 Sets
19	USB Mini Dongle for Bluetooth devices Connection		6
20	Bluetooth headphone &mic set		6
21	External Solid State Hard Disk	1 TB	2
22	LAN Setup		As required
<b>B : SOFTWARE PER UNIT</b>			
1	MS Office 2010 (professional) or the latest version available at the time of procurement		11 Licenses
2	Antivirus for – clients / workstations in profile with validity of an year or more which should be renewed upon expiry		11 Licenses
3	Open Office or equivalent.		Open source software
4	GIMP / Irfan View Image editor or equivalent		Open source software
5	LINUX OS		Open source

## *Computer Operator and Programming Assistant*

			software
6	WYSIWYG Web Authoring tool- Dreamweaver or Opensource tools like KompoZer, FrontPage or similar tools along with FTP tools for ex. Filezilla etc.		Proprietary /Open source software
7	Tally ERP 9 or Latest		11 Licenses
8	E Commerce Simulation Software		Open source software
9	Web Server : Any HTTP Web server / XAMPP or any other similar server		Open source software
<b>C : LIST OF OTHER ITEMS/ FURNITURE</b>			
1	Hand Held Vacuum cleaner		1
2	Pigeon hole cabinet	20 compartments	1
3	Chair and table for the instructor		1 each (for class room & laboratory)
4	Dual Desk or Chair and Tables for Trainees		10 / 20
5	Computer table laminated top with sliding tray for key board and one shelf of storage	150X650X750 mm	10
6	Operators chair (without arms mounted on castor wheels, adjustable height)		20
7	Printer table can be varied as per local specifications	650X500X750mm	3
8	Split type Air conditioners	1.5 tons	3
9	Storage cabinet	60X700X450mm	1
10	White Board.		1
11	Steel Almirah		1

## *Computer Operator and Programming Assistant*

<b>TOOLS &amp; EQUIPMENTS FOR EMPLOYABILITY SKILLS</b>		
<b>Sl. No.</b>	<b>Name of the Equipment</b>	<b>Quantity</b>
1.	Computer (PC) with latest configurations and Internet connection with standard operating system and standard word processor and worksheet software	10
2.	UPS - 500VA	10
3.	Scanner cum Printer	1
4.	Computer Tables	10
5.	Computer Chairs	20
6.	LCD Projector	1
7.	White Board 1200mm x 900mm	1

*Note: - Above Tools & Equipments not required, if Computer LAB is available in the institute.*

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## 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:															
Sl. No	Maximum Marks (Total 100 Marks)		15	5	10	5	10	10	5	10	15	15	Total internal assessment Marks	Result (Y/N)	
	Candidate Name	Father's/Mother's Name	Safety consciousness	Workplace hygiene	Attendance/ Punctuality	Ability to follow Manuals/ Written instructions	Application of Knowledge	Skills to handle tools & equipment	Economical use of materials	Speed in doing work	Quality in workmanship	VIVA			
1															
2															