

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

COMPETENCY BASED CURRICULUM

INFORMATION TECHNOLOGY

(Duration: Two Years)

CRAFTSMEN TRAINING SCHEME (CTS) NSQF LEVEL- 5



SECTOR – IT& ITES



INFORMATION TECHNOLOGY

(Engineering Trade)

(Revised in 2019)

Version: 1.2

CRAFTSMEN TRAINING SCHEME (CTS)

NSQF LEVEL-5

Developed By

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During the two-year duration of Information Technology trade a candidate is trained on professional skill, professional knowledge, and Engineering Drawing, Workshop Calculation & Science and Employability skill related to job role. In addition to this a candidate is entrusted to undertake project work and extracurricular activities to build up confidence. The broad components covered under Professional Skill subject are as below:-

<u>FIRST YEAR</u>: In this year the trainee learns about safety and environment, use of fire extinguishers and various safety measures involved in the industry. He gets the idea of trade tools. Gain basic knowledge of Electrical and Electronic components related to Computer and Networking system. They learn about assembling and servicing of Desktop computer and all its hardware components. Trainees are able to install Operating system and all others application software. They also learn to set up and configuring Networking System using various network devices.

The trainee learns to work on MS office package (word, excel, power point, outlook). They learn to design graphics using Adobe Page maker, Corel draw and Adobe Photoshop. Trainees are able to create email account, chat and browse through internet and Microsoft Outlook Express. They learn to design and develop web pages using HTML. They perform create and record various formats of multimedia audio and video files using digital audio and video editor tools. Trainees are able to create customized database files using Microsoft Access and Visual Basic.

SECOND YEAR: In this year the trainee learns Installing UNIX / LINUX operating system and Adding new users, software, material components, Identification of laptop sections and connectors. Assembling and disassembling a Laptop, troubleshooting Latest Tools & Gadgets for Desktop/Laptop Repairs. They learn to install and use different types of printer, Laser printer, Scanner & MFD Scanner. Trainees are able to install and configuration Monitor, display card and driver, front panel controls and settings, Practice on Backup Drives, Maintenance and Troubleshooting of PC. They can also assemble & disassemble of Tablet / Smart Devices. Trainees are able to configure Data communication equipments, Network Protection and troubleshooting, Server Installation, managing Server Network Security, Linux Server installation and configuration, Network Security.

The trainee learns about image editing and graphic design using Adobe Illustrator and Flash, video and audio editing using Adobe Premier. They learns to create graphics animation using Adobe after Effects and 3Ds Max. They learn to design webpage using Front Page, also use HTML and PHP embedding VBScript, JavaScript and publish in a local server. Trainees are also learn to use Dreamweaver and also on practice on Open Source Tools for Web Designing and Information Security Vulnerabilities.



2.1 GENERAL

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

Information Technology under Craftsman Training Scheme is delivered nationwide through network of ITIs. The course is of two-year duration. It mainly consists of Domain area and Core area. The Domain area (Trade Theory & Practical) impart professional skills and knowledge, while Core area (Workshop Calculation & science, Engineering Drawing and Employability Skills) impart requisite core skill, knowledge and life skills. After passing out the training program, the trainee is awarded National Trade Certificate (NTC) by DGT which is recognized worldwide.

Trainees broadly need to demonstrate that they are able to:

- Read and interpret technical parameters/ documents, 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 & employability skills while performing jobs.
- Document the technical parameters related to the task undertaken.

2.2 PROGRESSION PATHWAYS

- Can join industry as Technician and will progress further as Senior Technician, Supervisor and can rise up to the level of Manager.
- Can become Entrepreneur in the related field.
- Can join Apprenticeship programme in different types of industries leading to a National Apprenticeship certificate (NAC).
- Can join Crafts Instructor Training Scheme (CITS) in the trade for becoming instructor in ITIs.
- Can join advanced Diploma (Vocational) courses under DGT as applicable.



2.3 COURSE STRUCTURE

Table below depicts the distribution of training hours across various course elements during a period of two-years: -

C No	Course Element	Notional Training Hours	
S No.	Course Element	1 st Year	2 nd Year
1	Professional Skill (Trade Practical)	1000	1000
2	Professional Knowledge (Trade Theory)	280	360
3	Workshop Calculation & Science	80	80
4	Engineering Drawing	80	80
5	Employability Skills	160	80
	Total	1600	1600

2.4 ASSESSMENT & CERTIFICATION

The trainee will be tested for his skill, knowledge and attitude during the period of course through formative assessment and at the end of the training programme through summative assessment as notified by the DGT from time to time.

a) The **Continuous Assessment** (Internal) 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 formative assessment template provided on www.bharatskills.gov.in

b) The final assessment will be in the form of summative assessment. The All India Trade Test for awarding NTC will be conducted by Controller of examinations, DGT as per the guidelines. The pattern and marking structure is being notified by DGT 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

For the purposes of determining the overall result, weightage of 100% is applied for six months and one year duration courses and 50% weightage is applied to each examination for two years courses. The minimum pass percent for Trade Practical and Formative assessment is 60% & for all other subjects is 33%. There will be no Grace marks.



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 and records of internal (Formative) assessments are to be preserved until forthcoming 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 b	e 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. 60-70% accuracy 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	• Good skill levels in the use of hand tools,		



produce work which demonstrates attainment of a reasonable standard of craftsmanship, with little guidance, and regard for safety procedures and practices (c) Weightage in the range of more than 90	 machine tools and workshop equipment. 70-80% accuracy achieved while undertaking different work with those demanded by the component/job. A good level of neatness and consistency in the finish. Little support in completing the project/job. 0% 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% accuracy 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.



Junior Software Developer; is one of the many entry level roles in the software industry including support and help desk, testing, user interaction design, maintenance, enhancement, development and documentation. They are responsible for assisting in performing the key activities and tasks involved in the assigned role.

Programming Assistant/Junior Software Engineer; installs, maintains and updates computer programs by making minor changes and adjustments to them under the guidance of computing professionals. Maintains and updates documents of computer programs and installations. Applies knowledge of principles and practices in the area of programming and computing in order to identify and solve problems arising in the course of their work. They may receive guidance from managers or professionals. May supervise other workers also.

Domestic IT Helpdesk Attendant; is mainly responsible for the smooth running of computer systems and ensuring users get maximum benefits from them. Individual tasks vary depending on the size and structure of the organization, but may include installing and configuring computer hardware operating systems and applications; monitoring and maintaining computer systems and networks; talking staff/clients through a series of actions, either face to face or over the telephone to help set up systems or resolve issues; troubleshooting system and network problems and diagnosing and solving hardware/software faults etc.

Web Developer; is responsible for designing and maintaining web-based applications that include static and dynamic content. This includes the design, layout and coding of a website. They may work standalone or along with application/functional developers as part of the overall solution that includes a web based component.

Media Developer-Application Development; is responsible for designing and improving the look and feel, functionality and graphics appeal of the developed application. They may work standalone or along with application/functional developers to improve the aesthetics of the application being developed.

Data Communication Analyst/Network Administrator; researches, tests, evaluates, and recommends data communications hardware and software: Identifies areas of operation which need upgraded equipment, such as modems, fibre optic cables and telephone wires. Conducts survey to determine user needs. Reads technical manuals and brochures to determine equipment which meets establishment requirements. Visits vendors to learn about available products or services. Tests and evaluates hardware and software to determine efficiency, reliability, and compatibility with existing system, using equipment such as computer terminal



and modem. Analyses test data and recommends hardware or software for purchase. Develops and writes procedures for installation, use, and solving problems of communications hardware and software. Monitors system performance. Trains users in use of equipment. Assists users to identify and solve data communication problems. May write technical specifications to send to vendors for bid. May oversee or assist in the installation of communications hardware. May perform minor equipment repairs.

Reference NCO-2015:

- (i) 2512.0205 Junior Software Developer
- (ii) 3514.0300 Programming Assistant/Junior Software Engineer
- (iii) 3512.0101 Domestic IT Helpdesk Attendant
- (iv) 2513.0101 Web Developer
- (v) 2513.0302 Media Developer-Application Development
- (vi) 2523.0100 Data Communication Analyst/Network Administrator



Name of the Trade	INFORMATION TECHNOLOGY
Trade Code	DGT/1054
NCO - 2015	2512.0205, 3514.0300, 3512.0101, 2513.0101, 2513.0302, 2523.0100
NSQF Level	Level 5
Duration of Craftsmen Training	Two Years (3200 Hours)
Entry Qualification	Passed 10th class examination with Science and Mathematics or its equivalent.
Minimum Age	14 years as on first day of academic session.
Eligibility for PwD	LD, CP, LC, DW, LV, AA, LV
Unit Strength	24 (There is no separate provision of supernumerary seats)
Space Norms	70 Sq. m
Power Norms	3.45 KW
Instructors Qualification for	
(i) Information Technology Trade	B.Voc/Degree in Engineering/ Technology in Computer Science / IT from AICTE/UGC recognized Engineering College/ university with one-year experience in the relevant field. OR Computer Science /Computer Application / IT OR NIELIT "B" Level from AICTE/UGC recognised university with one year experience in the relevant field. OR Bachelor in Computer Science / Computer Application / IT OR PGDCA OR NIELIT "A" Level from AICTE/UGC recognised university with Two years experience in the relevant field. OR 03 years Diploma from recognized Board/ Institution in Computer Science / IT from AICTE/recognized board of technical education or relevant Advanced Diploma (Vocational) from DGT with two years' experience in the relevant field. OR

NTC/ NAC passed in the trade of IT/ICTSM with three years experience in the relevant field.

Essential Qualification:

Relevant National Craft Instructor Certificate (NCIC) in any of the variants under DGT.



	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. However, both of them must possess NCIC in any of its variants.
(ii) Workshop Calculation & Science	B.Voc/Degree in Engineering from AICTE/UGC recognized Engineering College/ university with one-year experience in the relevant field. OR 03 years Diploma in Engineering from AICTE / recognized board of technical education or relevant Advanced Diploma (Vocational) from DGT with two years' experience in the relevant field. OR NTC/ NAC in any one of the engineering trades with three years' experience. Essential Qualification: National Craft Instructor Certificate (NCIC) in relevant trade OR NCIC in RoDA or any of its variants under DGT
(iii) Engineering Drawing	B.Voc/Degree in Engineering from AICTE/UGC recognized Engineering College/ university with one-year experience in the relevant field. OR 03 years Diploma in Engineering from AICTE / recognized board of technical education or relevant Advanced Diploma (Vocational) from DGT with two years' experience in the relevant field. OR NTC/ NAC in any one of the Electrical groups (Gr-II) trades categorized under Engg. Drawing'/ D'man Mechanical / D'man Civil' with three years' experience. Essential Qualification: National Craft Instructor Certificate (NCIC) in relevant trade OR NCIC in RoDA / D'man (Mech /civil) or any of its variants under DGT.
(iv) Employability Skill	MBA/ BBA / Any Graduate/ Diploma in any discipline with Two years' experience with short term ToT Course in Employability Skills from DGT institutes. (Must have studied English/ Communication Skills and Basic Computer at 12th / Diploma level and above)



	OR
	Existing Social Studies Instructors in ITIs with short term ToT
	Course in Employability Skills from DGT institutes.
(v) Minimum Age for	21 Years
Instructor	
List of Tools & Equipment	As per Annexure-I

Distribution of training on Hourly basis: (Indicative only)

Year	Total Hrs /week	Trade Practical	Trade Theory	Workshop Cal. & Sc.	Engg. Drawing	Employability Skills
1 st	40 Hours	25 Hours	7 Hours	2 Hours	2 Hours	4 Hours
2 nd	40 Hours	25 Hours	9 Hours	2 Hours	2 Hours	2 Hours



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

5.1 LEARNING OUTCOME (TRADE SPECIFIC)

FIRST YEAR

- 1. Perform all the functions with Electrical and Electronic Components related to Computer and Networking system following safety precautions.
- 2. Installation and practice with Operating System and all other application software.
- 3. Assembling and servicing of Desktop Computer with all its hardware components.
- 4. Setting up and configuring Networking System using various network devices.
- 5. Sharing and controlling resource and connection through network.
- 6. Perform the operations of MS Office package (word, excel, power point, outlook).
- 7. Create Graphic design and work with Adobe Page maker, Corel draw and Adobe Photoshop.
- 8. Create email account, chat and browse through internet and Microsoft Outlook Express.
- 9. Design and develop web pages using HTML.
- 10. Create and record various formats of multimedia audio and video files using digital audio and video editor tools.
- 11. Create customized database files using Microsoft Access and Visual Basic.

SECOND YEAR

- 12. Install and practice LINUX operating system.
- 13. Assembling, troubleshooting all the hardware components of Laptop, Tablet/ Smart Devices.
- 14. Installation of Printer, Scanner and troubleshoot their faults.
- 15. Servicing and upgrading Desktop Computer with all its hardware components.
- 16. Perform Network Configuration, troubleshooting and Network Security.
- 17. Install and configure Windows Server and Linux server.
- 18. Configuration and managing Network server.
- 19. Image editing and graphic design using Adobe Illustrator and Flash.
- 20. Editing Video and Audio using Adobe Premier.
- 21. Creation of Graphics Animation using Adobe after Effects and 3Ds Max.
- 22. Designing Webpage using Front Page application.
- 23. Designing Webpage in HTML and PHP embedding VBScript, JavaScript.
- 24. Install and Configure MySQL.
- 25. Create and publish Web pages in Local web server.
- 26. Designing Website using Dreamweaver application and open source software.
- 27. Configure and secure network against threat, vulnerability and risk for information security.



6. ASSESSMENT CRITERIA

LEARNING OUTCOMES	ASSESSMENT CRITERIA
	FIRST YEAR
1. Perform all the functions	Measure DC voltage of a given battery-pack.
with Electrical and	Practice Domestic wiring using different components of wiring.
Electronic Components	Measure effective value of resistors in series, parallel and series-
related to Computer and	parallel.
Networking system	Solder a given circuit (consisting of resistors and semiconductor
following safety	diodes on a lug board.
precautions.	Measure capacitance using LCR meter.
	Testing a step-down transformer and finding transformation ratio.
	Refer to Diode handbook to get a diode for a given application and
	rating.
	Construct and test a Full wave rectifier.
	Find a required transistor referring to Transistor data book.
	Testing amplification of different configurations using pre wired
	kits.
	Test harmonic oscillators using pre wired circuits.
	Construct and test relaxation oscillators using pre wired circuit.
	Construct and test a Thyristor based power supply.
	Construct and test an IC variable output Voltage regulator.
	Test Dry cells. Identify of different types and sizes of button cells.
	Test button cells.
	Charge batteries. Connect batteries with UPS and test.
	Verify the truth table of NOT, AND, OR, NAND and NOR gates.
	Construct a logic circuit using basic gates for a given output logic.
	Construct a 1's compliment & 2's compliment circuit and verify.
2. Installation and practice	Identify the external I/O and memory devices connected to the PC.
with Operating System and	Disconnect the external I/O and memory devices connected to the
all other application	PC.
software.	Practice windows operating system.
	Identify system specifications. Use device manager to check status
	of installed devices. Identify and record IRQ. Make a start-
	up/emergency diskette.



3.	Assembling and servicing	Remove SMPS from cabinet, test SMPS for good working condition
	of Desktop Computer with	and refit to cabinet.
	all its hardware	Identify the components of a motherboard.
	components.	Remove, identify and refit RAM, Processor.
		Assemble PC given all components. Check for working.
		Load maintenance utilities to check system performance.
4.	Setting up and	Identify different types of cables used for networking.
	configuring Networking	Identify the protocols installed in an existing LAN setup.
	System using various	Make UTP cross cable and testing using continuity tester.
	network devices.	Establish connection between two computers using a cross cable.
		Make a UTP straight patch cord and testing using continuity tester.
		Configure a router Add/ Delete entry in configuration task.
		Set IP address and subnet mask. Establish connection.
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5.	Sharing and controlling	Share resources in LAN.
	resource and connection	Fault find and troubleshoot network problems.
	through network.	Create users, allocate rights and testing. Implement security in LAN.
		Use Linux commands. Install and uninstall devices using Linux
		command.
6.	Perform the operations of	Opening, edit and save/ "save as" documents.
	MS Office package (word,	Add Bullets and numbering.
	excel, power point,	Work with Microsoft Excel for creating worksheets with Graphs
	outlook).	and Visuals.
		Work with Microsoft Powerpoint for creating multimedia
		presentations.
		Customize quick e-mail, calendar, and tasks.
		Create and store personal distribution lists along with contacts in
		your Contacts folder.
7.	Create Graphic design and	Create Pamphlets.
	work with Adobe Page	Work with reports.
	maker, Corel draw and	Create long book works.
	Adobe Photoshop.	Work with Corel draw.
		Practice use of palettes. Draw & edit with the pencil tools.
		Practice transforming selected objects.
		Practice using the pathfinder palette.



		Bractice changing vector Craphics into Bitman images
		Practice changing vector Graphics into Bitmap images.
	C	
8.	Create email account,	
	chat and browse through	Use Telnet to get connected to remote computer.
	internet and Microsoft Outlook Express.	Using features of OUTLOOK Express for sending and receiving Emails.
		Setup internet connection using ISP.
9.	Design and develop web	Develop Web pages using Forms (2 pages, 3 pages, Multi pages).
	pages using HTML.	Set different colors to different Headings. Change paragraph font
		size and color using styles.
		Register free website and upload pages.
10	. Create and record various formats of multimedia	Practice sound editing and giving special effects. Use various formats of sound files.
	audio and video files using	Practice distorting recorded audio using Effects.
	digital audio and video	Create different objects, using Standard Primitives and Extended
	editor tools.	Primitives.
		Practice application of Lathe Option for creating symmetrical
		objects.
		Practice modelling of real world objects through LPM using Editable
		Mesh and Editable Poly. Convert a model to an editable mesh and
		working with Extrude and bevel options.
11	Create customized	Opening an existing and creating a new database with MS-ACCESS.
	database files using	Creating table in Data sheet and design view.
	Microsoft Access and	Develop customized form for data entry.
	Visual Basic.	Generate reports for required output.
		Setting relationship between tables and queries or both.
		Create a simple application using Access and VB for a given
		specification.
		Database back up and retrieval in Access.
		SECOND YEAR
12	Install and practice LINUX	Installing UNIX / LINUX.
	operating system.	Adding new users, software, material components.
		Making back-up copies of the index and files and index.
13	. Assembling,	Assembling and disassembling a Laptop.
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troubleshooting all the	Upgrading RAM, HDD and other parts.
hardware components of	Flashing of various brands of tablets / smart devices.
Laptop, Tablet/ Smart	Working with iOS, Android, Icecream sandwich, Jellybeans.
Devices.	
14. Installation of Printer,	Installing a printer and carrying self- test.
Scanner and troubleshoot	Replacement of toner cartridge of laser printers.
their faults.	Tracing the control board circuit and identifying defective
	components. Servicing of control board of laser printers.
	Scanner - Installation, configuration, using Automatic Document
	Feeder (ADF), OCR.
	Multifunction Printer - Installation, Replacing supplies and spares,
	troubleshooting.
15. Servicing and upgrading	Replace the display driver card and re-install. (before practicing this
Desktop Computer with	skill set, the already installed driver should be removed from
all its hardware	device manager).
components.	Servicing of monitors, changing fuses, adjusting colors, brightness
	and contrast. Setting resolution, loading drivers. Checking and
	replacing components on the PCB.
	Upgrade Mother board, Memory, CPU, Graphic Card, BIOS,
	Additional features.
	Pen Drive U3 format, USB External Drive (HDD, CD/DVD writer),
	Types, capacity, interface connector, write protection, Trouble
	Shooting, Interface.
	Running diagnostics program to identify the health and defects of a
	PC. Check system performance using third party utilities. Use
	benchmarking utilities to benchmark systems.
	Trouble shooting defects related to Mouse and its related ports
	loose connections, replacing cable, replacing roller and sensing
	elements. (COM, PS/2,USB).
	Trouble shooting defects related to RAM memory modules.
16. Perform Network	Connecting computers with Network with Drop cable and using Wi-
Configuration,	Fi configuration.
troubleshooting and	IP Routing Process Verifying Configuration.
Network Security.	Setting up basic protection using public keys and MAC address
	filters.
	Connect Power over Ethernet(PoE) in network.



	Practice on firewall technologies to secure the network perimeter.
	Wi-Fi configuration to implement security considerations.
17 Install and configure	Install and configure Windows Conver
17. Install and configure	Install and configure Windows Server.
Windows Server and Linux	Install and Configure Active Directory.
server.	Implementing Backup and Recovery.
	Install Linux Server.
	Create new user and group.
18. Configuration and	Installing and Configuring DNS Services.
managing Network server.	DHCP Server Configuration, Setting up of DHCP.
	VPN implementation.
	Managing TCP/IP Routing.
	Implement User Authentication Strategy.
	Configuring User Environment.
	Monitoring and Troubleshoot Network protocol.
	Configuring Protocol Security.
19. Image editing and graphic	Using the basic selection tools, magic Wand and the Lasso tool,
design using Adobe	selecting objects by attribute, saving and reusing selections.
Illustrator and Flash.	Modifying graphic styles: appearance palette settings, copying
	appearance.
	Transformation and Positioning: Rotating and scaling objects,
	reflecting and skewing objects, using the free Transform panel,
	Aligning objects.
	Applying Filters and Live Effects: Minding your resolution settings,
	Mapping artwork to 3Dobjects, using the Transform effect.
	Practice on Creating and Importing Graphics Assets, Working with
	different graphic.
	Practice on Creation of Animations - Working with the timeline,
	using key frames, blanks key frames and frames, Creating motion
	tweens, Creating shape tweens, creating transition effects, using
	animation best practices.
	•
20. Editing Video and Audio	Managing Clips: The Project panel, Views, The preview area,
using Adobe Premier.	Organizing clips and bins, Duplicating and copying clips, Renaming
	clips, Finding clips(search function), Interpreting Footage, Unlinking



	Creating a Sequence Editing Methods, In And Out Points, Sub Clips, Source And Target Tracks, Overlay And Insert Edits, Adding Clips By Dragging, 3 And 4 Point Edits, Lift And Extract, Storyboard Editing, Multiple And Nested Sequences.	
	Practice with Transitions: The Effects Panel, Understanding Transitions, Applying A Transitions, Editing A Transitions.	
	Practice with Titles: Creating a title Text paths, Roll and crawl titles, Text configuration.	
21. Creation of Graphics	Practice on User interface.	
Animation using Adobe	Create the arrivals Bound Effects.	
after Effects and 3Ds Max.	Practice on Animate 3D transformations.	
	Rotoscoping, Chroma, 2D & 3D tracing, Green/ Blue screen	
	technique/ shooting. Colour Correction.	
	Practice on Transform tool basics, Pivot points, Grouping and	
	parenting, Modelling with primitives.	
	Practice on User Interface - Setting up project, Views/panels,	
	Hotbox, Viewing Geometry, Channel Box, Layer Box, Attributes	
	Editor, QWERTY Navigation.	
	Practice on Hyper shade, Materials, Apply Materials, Making Shader	
	Networks, Combining Ramps, Layered Textures, Intro to lights,	
	Making Bump Maps.	
22. Designing Webpage using	Creating Background Pictures Creating Tables - Adding and Deleting	
Front Page application.	Rows, Columns, and Cells Background Colors.	
	Practicing Hyperlinks - To 'Outside' /External Sites, Internal	
	Link, Bookmark, Email Addresses, Rollover Styles, Target Frames.	
	Practice on Sample Forms Page, Date and Time Stamp, Counter,	
	Page Transitions, Changing your Password.	
	Practice on - Themes, Banners, Buttons, Headings, Hyperlinks/	
	Bullets /HorizontalLines, Navigation Bars.	
23. Designing Webpage in	Practice on Embedding VBScript in HTML, VBScript to Display	
HTML and PHP	Information, Hiding VBScript from Older Browsers, Code	
embedding VBScript,	Documentation & Formatting, Declaring Variables, Naming	
JavaScript.	Variables, Variants & Subtypes, Assigning Values to Variables,	
	Determining Variant Subtype, Data Subtype Conversion, Numeric	
	& Literal Constants.	



	 The Document Object Model (DOM) -Properties, Methods, Events &Collections, Event Handlers -Top-Down & Event-Driven Programming, Mouse Events, Keyboard Events, Validation & Error Handling. Platform or Host dependence. Practice using Java Script in an HTML Document, Hiding Java Script from old Web Browsers. Basic Syntax Used in Java Script Commands, Variables - Assigning Values to Variables, Concatenating String Variables. Installation of Apache Web Server Practice simple PHP programs. Practicing on programming to test events. Practicing the Writing to the browser, Getting input from forms, Output buffering, Session handling, Regular expression, Common math, Random numbers, File upload, File download, Environment variables. Practice on Creating and deleting a file, Reading and writing text files. Working with directories in DUP. Checking for avistance of file. 		
	files, Working with directories in PHP, Checking for existence of file, Determining file size, Opening a file for writing, reading, or appending, Writing Data to the file Reading characters.		
	Working with Classes And Objects -Creating an object, Object properties, Object methods, Object constructors and destructors, Class constants Class inheritance, Abstract classes and methods, Object serialization, Checking for class and method, existence, Exceptions, Iterators.		
24. Install and Configure	Installation of MySQL.		
MySQL.	Practice on MySQL syntac and creating database design.		
	Importing and exporting formats.		
	Practice on Database repair and archival.		
25. Create and publish web pages in Local web server.	Create a Web page using HTML, CSS, VB Script and Java Script. By installing and configuring IIS convert your windows PC into web server.		
	Install any open source web server like Apache / Wamp. Publish / Host website in the local web server.		
26. Designing Website using	Create Web sites with hyperlinks and graphic images.		
Dreamweaver application	Use page layout tools such as tables, frames, and layouts.		
and open source	Incorporate Dreamweaver with related software such as Macromedia Fireworks and Flash.		



software.	Incorporate Dreamweaver with related PHP, VBScript, JavaScript,
	MySQL etc.
	WYSIWYG web page editor - KompoZer, source code editor -
	Notepad++, plugin for Firefox - Firebug, highly stable and feature
	rich web development environment - Quanta Plus.
	Work with graphics application - Krita, vector graphics editor –
	Inkscape.
27. Configure and secure	Demonstrate Video show on Information Security.
network against threat,	Demonstrate Video show on Security Threats.
vulnerability and risk for	Observe using Video show on Security Vulnerabilities.
information security.	Demonstrate Video show on Risk Management

SYLLABUS FOR INFORMATION TECHNOLOGY TRADE			
FIRST YEAR			
Duration	Reference Learning Outcome	Professional Skills (Trade Practical) With Indicative Hours Professional Knowledge (Trade Theory)	
Professional Skill 275 Hrs; Professional Knowledge 77 Hrs	Perform all the functions with Electrical and Electronic Components related to Computer and Networking system following safety precautions.	 Practice of safety while lifting and shifting fragile and heavy equipments. (5 hrs) Check earthing and identify the type of earthing. (5 hrs) Practice electrical safety while connecting, switching- on and switching-off of heavy electrical outlet points. (5 hrs) Practice first aid in case of physical injury. (5 hrs) Practice first aid in case of electrical hazard. (5 hrs) Safety of working personal and equipment. Safety while lifting and shifting of fragile and heavy equipments. Safety precautions. Earthing, need and importance of Earthing, Types of earthing, Electrical safety. Electrical safety precautions. First aid in case of physical injury. First aid in case of Electrical hazard (07 hrs) 	
		 6. Identify AC & DC voltmeters/ Multi meters. (2 hrs) 7. Measure DC voltage of a given battery-pack. (2 hrs) 8. Measure mains AC voltage. (2 hrs) 9. Identify different types of wires used for interconnections (Sing lest and multi strand, twisted pair) (2 hrs) 10. Test wires and cables. (3 hrs) 11. Wiring harness. And Skin wire ends and tinning. (3 hrs) 12. Terminate wire ends with Electricity, Potential difference, AC &DC voltage, Current, Waveform. Measuring devices (meter). Conductors, Insulators and semiconductors, examples and applications. Domestic electrical wiring – requirements. Testing continuity of wires. Skinning and tinning of wires and cable ends. (07 hrs) 	



	I
lugs and connectors.(3 hrs)	
13. Crimping practice with RJ	
connectors. (4 hrs)	
14. Practice Domestic wiring	
using different components	
of wiring. (4 hrs)	
15. Identify different types of	• Resistors, types,
resistors. (2 hrs)	specifications, applications,
16. Find value of resistors and its	identification using colour
tolerance using colour code.	code, Resistors in series,
(2 hrs)	parallel and series parallel.
17. Measure resistance-using	 Ohms law and its
multi meter. (2 hrs)	application.
18. Measure effective value of	KCL & KVL Solder joint.
resistors in series, parallel	Soldering requirement
and series-parallel. (2 hrs)	&practice, Common
19. Measure branch currents and	soldering defects.
node voltages of a series-	-
parallel circuit (Kirchoff's	
law). (2 hrs)	& practice.
20. Solder single strand wires on	Application of PCB's. Types of PCB- an activity list
to Lug board.(2 hrs)	of PCBs, specifications. List
21. Solder single and multiple	some Connectors used with
solder joints. (2 hrs)	PCB.(07 hrs)
22. Solder Resistors on to a lug	
board. Solder Semiconductor	
device on to a lug board.(2	
hrs)	
23. Solder a given circuit	
(consisting of resistors and	
semiconductor diodes on a	
lug board. (4 hrs)	
24. Solder a resistor, a semiconductor device and an	
IC on lug board.(3 hrs)	
25. Practice de-soldering of	
above soldered components.	
(2 hrs)	
26. Capacitor – measuring the	• Capacitor, types,



 value, colour code. (3 hrs) 27. Measure capacitance using LCR meter.(3 hrs) 28. Identify of different types of inductors.(3 hrs) 29. Measure inductance using LCR meter. (3 hrs) 30. Test a step-up transformer and finding transformation ratio.(4 hrs) 31. Testing a step-down transformer and finding transformer and finding transformation ratio.(4 hrs) 32. Construct Electro-magnetic effect using Electric Bell, Solenoid. (5 hrs) 	 specification, capacitors in series and parallel – applications Magnetism. Faradays Laws. Inductance, Inductor-types, specifications, applications. Measurement of inductance, Inductance in series and parallel. Inductive reactance. Self & mutual Inductance – properties, applications. Transformer, principle, construction, types, rating and applications. Testing a given transformer. (07 hrs)
 33. Identify different types of rectifiers and terminals. (3 hrs) 34. Refer to Diode handbook to get a diode for a given application and rating. (3 hrs) 35. Testing a given diode. (3 hrs) 36. Construct and test a Half wave rectifier. (3 hrs) 37. Construct and test a Full wave rectifier. (4 hrs) 38. Construct and test a Bridge rectifier. (4 hrs) 39. Test LED's. Use LED as output indicator in DC power supplies. (5 hrs) 	 Semiconductor device. Rectifier diodes, types, specifications and applications. Half wave rectifier, construction, working, output voltage, current rating and output ripple. Efficiency, limitations, applications. Full wave rectifier, construction, working, output voltage, current rating and output ripple. Efficiency, limitations, applications. Bridge rectifier, construction, working, output voltage, current rating and output ripple. Efficiency, limitations, applications. Bridge rectifier, construction, working, output voltage, current rating, output ripple. Efficiency, limitations,



	 applications. LED's, types, specification and applications. Using LED as indicator lamps. (07 hrs)
 40. Identify different types and packages of transistors. (3 hrs) 41. Identify transistors leads/ terminals. (3 hrs) 42. Testing of transistors.(4 hrs) 43. Find a required transistor referring to Transistor data book. (5 hrs) 44. Testing amplification of different configurations using pre wired kits. (5 hrs) 45. Test cascaded amplifiers using pre wired kits. (5 hrs) 	 Principle of working of a transistor. PNP and NPN transistors. Specification of transistors. Identification of transistors, terminals. Referring to Data book for selecting a transistor. Biasing of transistors -types, advantages, and applications. Types of amplifiers, working and applications. Cascaded amplifiers, types and
 46. Familiarization and using CRO & function generator. (10 hrs) 47. Test harmonic oscillators using pre wired circuits. (5 hrs) 48. Construct and test relaxation oscillators using pre wired circuit. (5 hrs) 49. Measure parameters of Pulses using oscilloscope. (5 hrs) 	 applications. (07 hrs) Oscillators, types, Harmonic-LC, RC, Crystal and relaxation-UJT. Pulse, pulse parameters, implications. Pulse circuits, multi vibrators, applications. (07 hrs)
 50. Construct and test a Thyristor based power supply. (3 hrs) 51. Testing op-amp, testing and analyzing results of an OP- Amp. (3 hrs) 52. Wire and test a Multistage IC amplifier. (3 hrs) 53. Construct and test a 3-pin 	 DIAC, SCR, TRIAC-principle of working, specifications, circuits and application. Differential amplifiers, OP- Amps, principle, characteristics, advantages, applications. List a few



Voltage regulator. (3 hrs) 54. Construct and test an IC variable output Voltage regulator. (3 hrs) 55. Trace circuit of PC SMPS. Fault finding of SMPS used in PC. (3 hrs) 56. Troubleshoot SMPS used in PC's. Trace circuit, Fault finding and troubleshoot Power supplies used in PC I/O devices. (7 hrs)	 commonly used op-amps, Amplifiers in integrated circuit forms. IC oscillators -IC 5550ther types of linear IC's and applications. Voltage regulator -zener diode, principle, application, limitations. Shunt and series regulators, applications, limitation. IC voltage regulators- fixed/variable, specifications, testing. Multiple output regulators, package details of somecommon IC regulator. Comparison of linear and Switch mode power supplies. Working of SMPS. Types, specifications. Circuit tracing of SMPS. Fault finding and Troubleshooting approach of SMPS with emphasis on power supplies used in PC'sand its I/O devices. (07 hrs)
 57. Test Dry cells. Identify of different types and sizes of button cells. Test button cells. (3 hrs) 58. Check the specific gravity of electrolyte. (4 hrs) 59. Checking battery using discharge tester. Top-up secondary batteries.(4 hrs) 	 Primary and secondary batteries. Dry cells, specification. Button cells, types and applications - testing. Secondary battery types, specification, construction, Routine maintenance,



		 60. Connecting secondary batteries in series/series parallel. (4 hrs) 61. Identify a dead/ defective battery in a chain of batteries.(4 hrs) 62. Charge batteries. Connect batteries with UPS and test. (6 hrs) 	•	Electrolyte- specific gravity, charging batteries. Maintenance free batteries. Use of batteries with UPS. Safety precautions. (07 hrs)
		 63. Convert Decimal to Binary and reverse. Convert of Binary to octal and reverse. Convert of Binary to Hexadecimal and reverse. (4 hrs) 64. Identify given IC's using digital IC handbook. (4 hrs) 65. Verify the truth table of NOT, AND, OR, NAND and NOR gates. (6 hrs) 66. Construct a logic circuit using basic gates for a given output logic. (4 hrs) 67. Construct a 1's compliment &2's compliment circuit and verify. (6 hrs) 68. Construct and verify the truth table of flip-flop. (6 hrs) 69. Construct and test a serial and parallel shift register. (10 hrs) 70. Construct and test a 4-bit binary counter. (10 hrs) 	•	Comparing Analog and Digital signal. Application of Digital electronics. Number system, Binary, octal and hexadecimal. Boolean algebra, D'Morgans theorem. Simplification of logic circuit. Identification of Digital IC's, Types of packages, applications. Basic digital gates and truth tables. 1's & 2's compliment Flip- flop, register & counter. Making a logic circuit for any custom requirement. (14 hrs)
Professional Skill 50 Hrs; Professional Knowledge 14 Hrs	Installation and practice with Operating System and all other application software.	 71. Identify the external I/O and memory devices connected to the PC. (3 hrs) 72. Identify the controls of each of these devices including the system (CPU) unit. (5 hrs) 	•	Basic blocks of a digital computer. Function of each block. Personal computer organization. Introduction to various generations of PC's.



			T
		 73. Disconnect the external I/O and memory devices connected to the PC. (7 hrs) 74. Re-connect external I/O and memory devices connected to the PC. (10 hrs) 75. Practice windows operating system. (5 hrs) 	 Brief working and usage of I/O and memory devices used in a PC. (07 hrs) Working with computer using windows operating
		 76. Practice using notepad and paint. (5 hrs) 77. Identify system specifications. Use device manager to check status of installed devices. Identify and record IRQ. Make a start-up/emergency diskette. (5 hrs) 78. Uninstall, Reinstall and make settings for the following devices using Device manager: Keyboard, Mouse, Display, Multimedia, Printer, Modem, Web camera 	driver. IRQ and DMA. Making startup/emergency diskette.
		and other such external devices. (10 hrs)	
Professional Skill 75 Hrs; Professional Knowledge 21 Hrs	Assembling and servicing of Desktop Computer with all its hardware components.	 79. Remove SMPS from cabinet, test SMPS for good working condition and refit to cabinet. (2 hrs) 80. Identify the internal parts of a PC. (2 hrs) 81. Identify cable connections inside a PC. (2 hrs) 82. Identify the specifications of motherboard. (1 hr) 83. Identify the components of a motherboard. (1 hr) 84. Remove, identify and refit add-in cards. (2 hrs) 	 Memory Types and uses. Computer main memory, specifications, compatibility, expandability, types, manufacturers. SMPS used in PC, Specifications, types of connectors, testing. Mother board, types, specifications, components on the motherboard and its functions. BIOS, CMOS setup. FDD/



			·
		 85. Remove, identify and refit RAM, Processor. (1 hr) 86. Practice CMOS setting. (2 hrs) 87. Remove and refit FDD/HDD. (2 hrs) 88. Remove and refit CD/DVD ROM drive. (2 hrs) 89. Partition HDD, Format HDD, Load operating system. (3 hrs) 90. Load multiple Operating system (Windows & Linux). Test working. (5 hrs) 	 HDD, principle of working, types, capacity, manufacturers, connecting to motherboard. Jumper setting. Partitioning, formatting. Non DOS partitions. Loading operating system. Loading multiple OS. Loading application packages. (07 hrs)
		 91. Assemble PC given all components. Check for working. (10 hrs) 92. Identify defect (Hardware/software). Rectify defect. (5 hrs) 93. Identify possibility of upgrading a given PC to given specification. Collect and upgrade PC. Check working of upgraded PC. (10 hrs) 	working, types, specifications, manufacturers, connecting, jumper setting. COMBO drives.
		94. Load maintenance utilities to check system performance. (10 hrs)95. Test and report system performance. (15 hrs)	 Identifying and Troubles hooting hardware related problems. Disassembling precautions and procedure. Assembling of PC for a given requirement. Upgrading of PC in respect of main memory, HDD, ZIP, DAT and other special devices. (07 hrs)
Professional Skill 100 Hrs; Professional	Setting up and configuring Networking System using various network	96. Identify components of a simple LAN environment. (5 hrs)97. Identify different types of	 Serial data communication, principle, standards/ protocols and devices



Knowledge 28 Hrs 	devices.	cables used for networking. (5 hrs) 98. Identify the protocols installed in an existing LAN setup. (5 hrs) 99. Draw LAN diagram. (10 hrs)	 /applications. Parallel data communication, principle, standards/protocols and devices/ applications. Features of Networked computers. (07 hrs)
		 100. Identify the NIC installed & MAC address (5 hrs) 101. Install of NIC card. (5 hrs) 102. Make UTP cross cable and testing using continuity tester. (5 hrs) 103. Establish connection between two computers using a cross cable. (10 hrs) 	 Components required for networking. Network Topologies. Comparison. Network Protocols, applications. Physical components planning for a small LAN. Network operating systems
	 104. Make a UTP straight patch cord and testing using continuity tester. (10 hrs) 105. Connect and test a straight cable using a N-port switch and computers. Establish a peer-to-peer connection. (15 hrs) 	 and features. (07 hrs) Network cables, types, specifications, standards, application. Peer - to peer connection. Client server connection, comparison, applications (07 hrs) 	
	1	 106. Configure a router Add/ Delete entry in configuration task. (5 hrs) 107. Create work groups. (5 hrs) 108. Set IP address and subnet mask. Establish connection. (5 hrs) 109. Use of Ping command. (5 hrs) 110. Establish sub networks using subnet mask. (5 hrs) 	 What is router, its function, configuration table? Concept of work groups and uses. UTP Cross cable for testing connection between two computers. UTP straight cable and connecting through N-port Switch. Allocation of IP address and



			Subnet (07 hrs)
Professional Skill 50Hrs; Professional Knowledge 14 Hrs	Sharing and Controlling resource and connection through network.	 111. Share resources in LAN. (2 hrs) 112. Fault find and troubleshoot network problems. (5 hrs) 113. Trace a network route. (3 hrs) 114. Create users, allocate rights and testing. Implement security in LAN. (15 hrs) 115. Use Linux commands. Install and uninstall devices using Linux command. (10 hrs) 116. Set-up LAN under Linux. (15 hrs) 	 Cabling procedures and introduction to structured cabling. Creating users in Widows server. Resource sharing and Security. Sharing a single internet connection in LAN, with or without the use of Proxy. (10 hrs) Multi user OS. Linux Operating system, OS commands. Installing devices. Setting up LAN in Linux environment. (14 hrs)
Drofossional	Dorform the	Microsoft WORD	(14hrs)
Professional Skill 100Hrs; Professional Knowledge 28Hrs	Perform the operations of MS Office package (word, excel, power point, outlook).	 Microsoft WORD 117. Open, resize and close MS Word. (1 hr) 118. Opening, edit and save/ "save as" documents. (1 hr) 119. Use all menu bar features. (2 hrs) 120. Use all Standard tool bar features. (2 hrs) 121. Create Document, non- documents files. (2 hrs) 122. Create templates. (2 hrs) 123. Create tables. (1 hr) 124. Insert pictures and videos. (2 hrs) 125. Mail merge documents. (1 hr) 126. Creating Bookmarks. (1 hr) 127. Add Bullets and numbering. (1 hr) 128. Create Hyperlinks. (3 hrs) 129. Create broachers. (3 hrs) 	 Microsoft WORD Text editing software's. Introduction to MSOffice. Features and application of Microsoft word. Concept of word processing. Menu bar features. Standard toolbar features. Editing the text, use of different tools, formatting the text. Creating, Document, non- documents files. Creating templates. Creating tables. Inserting pictures and videos. Mail merge. Book marks. Bullets and numbering. Hyperlinks. Creating broachers. Creating



	130. Create bookwork. (3 hrs)	bookwork (07 hrs)
Microsoft EXCEL		Microsoft EXCEL
	131. Work with Microsoft Excel for creating worksheets with Graphs and Visuals. (25 hrs)	 Use of Microsoft Excel features for creating worksheets with mathematical formulae and graphs. (07 hrs)
	Microsoft POWERPOINT	Microsoft POWERPOINT
	 132. Work with Microsoft Power point in for creating multimedia presentations. (15 hrs) 133. Work with custom animation and effects. (10 hrs) 	 Use of Microsoft Power point features for creating multimedia presentations. (07 hrs)
	Microsoft OUTLOOK	Microsoft OUTLOOK
	 134. Customize quick e-mail, calendar, and tasks. (3 hrs) 135. Create a shortcut in the Outlook Bar to any file, folder or Web page. (3 hrs) 136. Send and receive e-mail in HTML format. (3 hrs) 137. Use 'Find' tool to quickly find messages, appointments or tasks using a Web-style search to specify the desired information. (3 hrs) 138. Set up rules and even filter out junk e-mail. (3 hrs) 139. Publish personal or team calendar as a Web page using a single command. (3 hrs) 140. Create and store personal distribution lists along with contacts in your Contacts folder. (3 hrs) 141. Manage mass mailings with 	 Customizable quick e-mail, calendar, and tasks. Create a short cut in the Outlook Bar to any file, folder or Webpage. Send and receive-mail in HTML format. Find tool to quickly find messages, appointments or tasks using a Web-style search to specify the desired information. Publish personal or team calendar as a Web page using a single command. Create and store personal distribution lists along with contacts in your Contacts folder. Manage mass mailings with Mail Merge for e-mail, fax or print distribution to select or all contacts based on any set



		print distribution to select or all contacts based on any set of contact fields. (4 hrs)	of contact fields. • Use the Activities tab on a contact item to dynamically track and view all activity related to a contact such as e-mail, appointments and tasks. (07 hrs)
Professional	Create Graphic design	Adobe PageMaker	Adobe PageMaker
Skill 50Hrs;	and work with Adobe Page maker, Corel	142. Work with PageMaker. (5hrs)	 Use of Page Maker features for creating Pamphlets,
Professional Knowledge 14 Hrs	draw and Adobe Photoshop.	 143. Create Pamphlets. (4hrs) 144. Create broachers. (5hrs) 145. Work with reports. (3hrs) 146. Create illustrative works. (4hrs) 147. Create long book works. (4hrs) 	broachers, reports, illustrative works and long book works. (07 hrs)
		Corel Draw	Corel draw
		 148. Work with Corel draw. (10 hrs) 149. Create artistic characters and shapes for use with page maker. (15 hrs) 	 Use of features of Corel draw Create artistic characters and shapes for use with page maker. (07 hrs)
Professional	Create email account,	Internet	Internet
Professional Skill 50Hrs; Professional Knowledge 14 Hrs	create email account, chat and browse through internet and Microsoft Outlook Express.	 Internet 150. Open web pages using URL and domain name. (1 hr) 151. Save web pages. (1 hr) 152. Store web pages as favorites. (2 hrs) 153. Use search engines to find sites offering free Email services. (2 hrs) 154. Create Email account. (1 hr) 155. Send Email. (1 hr) 156. Copy received Email. Copy/Print received mail. (1 hr) 157. Send Email with attachment. 	 Networking of Computers. LAN, MAN, WAN. Intranet. Interconnected computers. LAN, MAN, WAN. Intranet. Internet, Websites, WWW, URL. Internet protocols, HTTP, FTP, Client end software - Browsers. Requirements for Internet access, browser, modem, ISP. Getting internet count and



150 Onen/Deverland	
158. Open/Download	settings.
attachments. (2 hrs)	
159. Set-up for Chat. (1 h	
160. Practice chatting. (1	hr) browser features, security
161. Practice chatting wit	th Video. levels.
(1 hr)	 Getting connected to a
162. Join Newsgroup. (2 h	nrs) website- site name & its URL,
163. Getting connected	d using Domain name server. Saving
FTP. (2 hrs)	websites, favorites, printing
164. Downloading so	ftware's. web pages/sites.
(2hrs)	• Meaning and use of Search
165. Upgrading Browser	_
(2 hrs)	Webmail account, Email,
166. Use Telnet to get co	
to remote computer	
	,
	sending and receiving Email.
	Sending and receiving
	attachments using Email.
	 Chatting over Web. News
	groups.
	 Down loading of software's –
	FTP
	 Getting connected to a
	distant computer and Telnet.
	(07 hrs)
MS Outlook Express	MS Outlook Express
167. Using features of C	
Express for sendi	U 1
receiving Emails. (3 h	с <u> </u>
168. Setting multi plea o	
outlook expres	
send/receive mails.	
169. Maintaining Addres	
(10 hrs)	
Connecting to Internet	m in
170. Installing model	
	Installing
Web Browsers. (5 hr	
171. Setup internet co	



		using ISP. (2 hrs)	
		172. Setup browser settings. (2	
		hrs)	
Professional	Design and develop	HTML	HTML
Skill 25 Hrs;	web pages using	173. Working with HTML tags. (1	• Source code of Web pages,
	HTML.	hr)	meaning of HTML, its
Professional		174. Working with Fonts, colors.	features and advantages.
Knowledge		(1 hr)	 Programming using HTML.
07 Hrs		175. Working with Hyper text	Using Scripts for active web
		Links. (1 hr)	pages.
		176. Develop Unordered Lists. (1	• Use of Java scripts.(Simple
		hr)	scripts only)
		177. Develop Ordered Lists. (1 hr)	• Use of VB script for
		178. Develop Definition Lists. (1	interactive pages.(Simple
		hr)	scripts only)
		179. Practice with different types	• Picture formats, animated
		of Marquee effects. (1 hr)	files and its usage in web
		180. Develop HTML Pages using	pages.
		Tables. (1 hr)	• Web page design using Front
		181. Develop User registration	page.
		forms. (1 hr)	• Procedure for Hosting of
		182. Develop Web pages using	web sites.(07hrs)
		Forms(2 pages, 3pages,	
		Multi pages). (1 hr)	
		183. Open pages in parent	
		windows. Use Embed tag to	
		insert Media. (1 hr)	
		184. Insert flash file safe mode.	
		(1 hr) 185. Auto plays Videos and Audio	
		files. (1 hr)	
		186. Play Audio and Video files	
		from specific time. (1 hr)	
		187. Hide controls on web page.	
		(1 hr)	
		188. Set different colors to	
		different Headings. Change	
		paragraph font size and	
		color using styles. (1 hr)	



		 189. Print "Hello World" on web page using Jscript. (1 hr) 190. Validate Password given by the user. (1 hr) 191. Validate User input date. (2 hrs) 192. Validate E-Mail Address. (2 hrs) 193. Register free website and upload pages. (2 hrs) 194. Setting up the work area. (1 hr) 	
Professional Skill 50 Hrs; Professional Knowledge 14 Hrs	Create Graphic design and work with Adobe Page maker, Corel draw and Adobe Photoshop.	 Adobe Photoshop 195. Practice use of Photoshop tools. (2hrs) 196. Practice use of palettes. Draw &edit with the pencil tools. (2hrs) 197. Smoothen the path with smooth tool. Draw with the Paint tool. (3hrs) 198. Draw curve segments. Use reshape tool. (3hrs) 199. Draw & edit brushed paths. Practice managing brushes. (3hrs) 200. Create brushes. Create a pattern brush. Practice using the brush libraries. (3hrs) 201. Use rulers, guides & grids. (3hrs) 202. Practice use of selection tools. (2hrs) 203. Practice moving, copying and deleting objects. (2hrs) 204. Practice grouping &ungrouping objects. (2hrs) 205. Practice transforming selected objects. (3hrs) 	 Adobe Photoshop Different composition of colors. The colors of the visual spectrum. Evidence of color theory implementation from existing graphics found in print media. Picture formats, Color use and implementation on the web. Introduction to some of the most common graphics and image file formats, and its restrictions to particular hardware/operating system platforms. Image formats and incorporation of compression technique for large storage size of Image files. Creating Vector Graphics. Using tools for publishing artwork on the Web & in print. Exploring new creative options and producinghigh



		 206. Practice distorting with free transform tool. (3hrs) 207. Practice Punking & Bloating. Create blends. (3hrs) 208. Practice using the pathfinder palette. (3hrs) 209. Practice working with clipping masks. (3hrs) 210. Practice changing vector Graphics into Bitmap images. (5 hrs) 211. Practice linking objects to URLS for Internet packages. (5 hrs) 	 quality images for print &web. Creating exceptional imagery with easier access to file. Streamlined web design. Photo re-touching, colorful image collages, (14hrs)
Professional	Create and record	MULTIMEDIA -Audio	MULTIMEDIA -Audio
Skill 75 Hrs; Professional Knowledge 21 Hrs	various formats of multimedia audio and video files using digital audio and video editor tools.	 212. Practice sound Recording in different channels - Monostereo. (5 hrs) 213. Practice sound editing and giving special effects. Use various formats of sound files. (5 hrs) 214. Carryout conversion of analog audio to digital audio. (5 hrs) 215. Practice Frequency management. (5 hrs) 216. Practice distorting recorded audio using Effects. (5 hrs) 	 Sound recording basics, various formats of sound files, Converting analog audio to digital audio. Digital audio editors that include powerful audio processing tools, effects for recording and manipulating audio. Edit files nondestructively down to the sample level with extreme speed and accuracy. (07 hrs)
		Multimedia -Video	Multimedia -Video
		 217. Get acquainted with the arrangement of different Tool Bars, Panels, Tools and View Ports. (4 hrs) 218. Draw and visualize simple objects in terms of Top View, Front View and Side View. Create simple objects. (4 hrs) 219. Practice Moving, Rotating 	 Introduction to the concept of 3D.Orthographic and Perspective views. Creating basic objects in 3D. Introduction to command panel. Working with "Properties" of 3Dobjects. Editing 3D objects using



		and Scaling objects. (6 hrs)	modifiers.
		220. Practice changing	• Elements of View Port
		dimensions of objects using	controller.
		modifiers. (6hrs)	 Creating objects with
		221. Create different objects,	Standard Primitives and
		using Standard Primitives	Extended Primitives.
		and Extended Primitives. (6	Creating objects using
		hrs)	"Shapes" panel. Re-shaping
		222. Make shapes render able	of objects using Compound
		and create splines, Practice	Objects like Boolean, Terrain
		manipulation of the shape of	and Loft.
		the model using Compound Objects. (6 hrs)	 Creating symmetrical objects using Lathe option.
		223. Practice application of Lathe	• Simple Animation of basic
		Option for creating	objects. Introduction to
		symmetrical objects. (6 hrs)	Particle Systems.
		224. Apply animation to the	• Low Polygon Modelling. (14
		models created so far. (6	hrs)
		hrs)	
		225. Practice modelling of real	
		world objects through LPM	
		using Editable Mesh and	
		Editable Poly. Convert a	
		model to an editable mesh	
		and working with Extrude	
		and bevel options. (6 hrs)	
Professional	Create customized	226. Opening an existing and	• Database concepts -data,
Skill 100 Hrs;	database files using	creating a new database	object and properties:
Desferies	Microsoft Access and	with MS-ACCESS. (15 hrs)	Definition.
Professional Knowledge	Visual Basic.	227. Identifying the objects	• Elements of database in
28 Hrs		supported MS-ACCESS (10	Access: table, form, query,
		hrs)	report.
		228. Creating table in Data sheet	• Creating tables in
		and design view. (5 hrs)	Datasheet and design view,
		229. Enter data and edit data.	setting field properties.
		(10 hrs)	• Editing data in table (14 hrs)
		230. Data validation and	
		verification in Access. (10	
		hrs)	



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231. Develop customized form for	1 0
data entry. (07 hrs)	for data entry and editing.
232. Develop queries. (03hrs)	Data validation and
233. Generate reports for	verification.
required output. (02 hrs)	• Developing and generate
234. Generate customized	queries.
reports. (07 hrs)	 Developing and generating
235. Setting relationship between	reports.
tables. (03 hrs)	Relational Database systems.
236. Setting relationship between	Its advantages and
tables and queries or both.	applications Using Multiple
(03 hrs)	table, data entry, and
	generating reports (07 hrs)
237. Practice use of Visual basic	Concept of Front end for
with MS Access as front end.	database.
(10 hrs)	• Software's used as Front-
238. Create a simple	end.
application using Access and	• Use of Visual basic as front
VB for a given specification.	end with access.
(08 hrs)	• Development cycle.
239. Database back up and	• Steps for developing simple
retrieval in Access. (07 hrs)	software using Access and
	VB for a given application.
	S
	retrieval. (07 hrs)

Industrial Visit/ Project Work

Broad Areas:

- a) Graphics designing project using Adobe PageMaker and Corel Draw.
- b) Image editing project using Adobe Photoshop.
- c) Create a simple web site using HTML of at least 5 web pages which will include Images, tables, charts, lists and hyperlink on any topic like Student Information System, Book Store, and organizations etc.
- d) Create a customized database using MS Access for an organization.



SYLLABUS FOR INFORMATION TECHNOLOGY TRADE				
	SECOND YEAR			
Duration	Reference Learning Outcome	Professional Skills (Trade Practical) With Indicative Hours	Professional Knowledge (Trade Theory)	
Professional Skill 25 Hrs; Professional Knowledge 09 Hrs	Install and practice LINUX operating system.	 Linux operating system 240. Installing UNIX / LINUX. (05hrs) 241. Preparing functional system UNIX/LINUX. (08hrs) 242. Adding new users, software, material components. (04hrs) 243. Making back-up copies of the index and files and index. (08hrs) 	 Linux operating system Basic Linux commands. Linux file system, The Shell, Users and file permissions, vi editor, X window system, Filter commands, Processes, Shell Scripting.(09hrs) 	
Professional Skill 25 Hrs; Professional Knowledge 09 Hrs	Assembling, troubleshooting all the hardware components of Laptop, Tablet/ Smart Devices.	Laptop PCs	 Laptop PCs Introduction of laptop and comparison of various Laptops. Block diagram of laptop & description of all its sections. Study of parts of a laptop. Input system: Touchpad, Trackball, Track point, Docking station, Upgrade memory, hard disk, replacing battery, Configure wireless internet in a laptop, Latest Tools & Gadgets for Desktop/Laptop Repairs.(09hrs) 	



Professional	Installation of	SATA technology. Installation of OS using SATA technology drivers. (2 hrs) 253. Laptop troubleshooting. (3hrs) 254. Latest Tools & Gadgets For Desktop/Laptop Repairs (4hrs) Printers & Plotters	Printers & Plotters
Skill 75 Hrs;	Printer, Scanner	255. Testing front panel controls.	• Types of printers, Laser
Professional Knowledge	and troubleshoot their faults.	Interface pins, cables, measurement of voltages	printer, Ink jet printer, line printer.
27 Hrs		and waveforms. (1 hr) 256. Installing a printer and	 Block diagram and function of each unit head
		carrying self-test. (2 hrs) 257. Replacement of toner cartridge of laser printers. (2 hrs)	 assembly, carriage, and paper feed mechanism. Front panel controls and interfaces. Pin details of
		258. Refilling toner cartridge of laser printers. (2 hrs)	
		259. Drum cleaning and replacement in of laser printers. (2 hrs)	 Installation of a printer driver. And self test. Working principle of LASER printer.
		260. Testing and servicing Printer power supply of laser printers. (1 hr)	•
		261. Changing mechanical parts of laser printers. (2 hrs)	equipment available for refilling and procedure.
		262. Tracing the control board circuit and identifying defective components. Servicing of control board of	 Printer drum, function, cleaning and replacing procedure.
		laser printers. (2 hrs)263. Replacement of inkcartridge of desk jet/inkjet	 Power supply in laser printers, circuit, defects, servicing. Mechanical parts and
		printers. (2 hrs) 264. Refilling ink cartridge of desk jet/inkjet printers. (2	sensors on laser printer, function, replacement



 hrs) 265. Drum cleaning and replacement in desk jet/inkjet printers. (2 hrs) 266. Testing and servicing Printer power supply of desk jet/inkjet printers. (2 hrs) 267. Changing mechanical parts of desk jet/inkjet printers. (4 hrs) 268. Tracing the control board and identifying defective components. Servicing of control board of desk jet/inkjet printers. (6 hrs) 269. Connecting and using high speed line printers. (6 hrs) 270. Replacing spares of line printers. (6 hrs) 271. Self test procedures in printers. Use of diagnostics software for serving printers. (6 hrs) 	 procedure. Control board(s) in laser printer, circuit diagram, defects and servicing procedure. Working principle of INK JET/Desk jet printers. Type of ink used and replacement of ink cartridge. Refilling of ink, equipment available, quality of refilled cartridges. Printer drum, function, cleaning and replacing procedure. Power supply in inkjet printers, circuit, defects, servicing. Mechanical parts and sensors on inkjet printer function. Working principle of Plotter and its common
 Scanner & MFD	faults.(18 hrs) Scanner & MFD
 272. Scanner - Installation, configuration, using Automatic Document Feeder(ADF), OCR. (3hrs) 273. Barcode Scanner - Installation and configuration. (3 hrs) 274. Network Scanner - Installation and configuration. (3 hrs) 275. Troubleshooting of Scanner. (3 hrs) 	 Working principles of Scanner, Barcode Scanner, Network Scanner. Working principles of Multifunction Printer, Passbook printer, High Speed Printer, Line Printer, Network Printer. Print Server.(09 hrs)



		276. Multifunction Printer	-
		Installation, Replacing	
		supplies and spares	,
		troubleshooting. (3 hrs)	
		277. Passbook Printer	-
		Installation, calibration	,
		configuration 8	ι I
		troubleshooting.	
		Replacement of Supplies	5
		and maintenance. (3 hrs)	
		278. Network Printer	-
		Installation and	1
		configuration,	
		troubleshooting. (3 hrs)	
		279. How to update the flash o	F
		Motherboard, printer	,
		scanner and modem etc. (4	L I I I I I I I I I I I I I I I I I I I
		hrs)	
Professional	Servicing and	Monitor, Display card and Driver	Monitor, Display card and
Skill 100 Hrs;	upgrading Desktop	280. Identify the type of monito	
	Computer with all	connected to PC	
Professional	-		//···· · ··· /
Knowledge	its hardware	specifications, front pane	l Monochrome
	-	specifications, front pane controls and settings. (2 hrs	Monochrome And colour, CGA, EGA,
Knowledge	its hardware	specifications, front pane controls and settings. (2 hrs 281. Identify the specifications o	 Monochrome And colour, CGA, EGA, VGA, SVGA, Digital and
Knowledge	its hardware	specifications, front pane controls and settings. (2 hrs 281. Identify the specifications o the display driver care	 Monochrome And colour, CGA, EGA, VGA, SVGA, Digital and Analogue, interlaced
Knowledge	its hardware	specifications, front pane controls and settings. (2 hrs 281. Identify the specifications o the display driver card installed in the PC. (2 hrs)	 Monochrome And colour, CGA, EGA, VGA, SVGA, Digital and Analogue, interlaced none interlaced.
Knowledge	its hardware	specifications, front pane controls and settings. (2 hrs 281. Identify the specifications o the display driver card installed in the PC. (2 hrs) 282. Remove the display drive	 Monochrome And colour, CGA, EGA, VGA, SVGA, Digital and Analogue, interlaced none interlaced. Specifications and
Knowledge	its hardware	specifications, front pane controls and settings. (2 hrs 281. Identify the specifications o the display driver card installed in the PC. (2 hrs) 282. Remove the display drive card	 Monochrome And colour, CGA, EGA, VGA, SVGA, Digital and Analogue, interlaced none interlaced. Specifications and comparison
Knowledge	its hardware	specifications, front pane controls and settings. (2 hrs 281. Identify the specifications o the display driver card installed in the PC. (2 hrs) 282. Remove the display drive card and identify the main	 Monochrome And colour, CGA, EGA, VGA, SVGA, Digital and Analogue, interlaced none interlaced. Specifications and comparison Of Monitors. Front
Knowledge	its hardware	 specifications, front pane controls and settings. (2 hrs 281. Identify the specifications o the display driver card installed in the PC. (2 hrs) 282. Remove the display drive card and identify the main components and connectors 	 Monochrome And colour, CGA, EGA, VGA, SVGA, Digital and Analogue, interlaced none interlaced. Specifications and comparison Of Monitors. Front panel controls, brightness,
Knowledge	its hardware	specifications, front pane controls and settings. (2 hrs 281. Identify the specifications o the display driver card installed in the PC. (2 hrs) 282. Remove the display drive card and identify the main components and connectors on the display driver card	 Monochrome And colour, CGA, EGA, VGA, SVGA, Digital and Analogue, interlaced none interlaced. Specifications and comparison Of Monitors. Front panel controls, brightness, contrast, horizontal and
Knowledge	its hardware	specifications, front pane controls and settings. (2 hrs 281. Identify the specifications o the display driver card installed in the PC. (2 hrs) 282. Remove the display drive card and identify the main components and connectors on the display driver card (2 hrs)	 Monochrome And colour, CGA, EGA, VGA, SVGA, Digital and Analogue, interlaced none interlaced. Specifications and comparison Of Monitors. Front panel controls, brightness, contrast, horizontal and vertical height settings.
Knowledge	its hardware	 specifications, front pane controls and settings. (2 hrs 281. Identify the specifications o the display driver card installed in the PC. (2 hrs) 282. Remove the display drive card and identify the main components and connectors on the display driver card (2 hrs) 283. Replace the display drive 	 Monochrome And colour, CGA, EGA, VGA, SVGA, Digital and Analogue, interlaced none interlaced. Specifications and comparison Of Monitors. Front panel controls, brightness, contrast, horizontal and vertical height settings. Display cards, bus
Knowledge	its hardware	 specifications, front pane controls and settings. (2 hrs 281. Identify the specifications o the display driver card installed in the PC. (2 hrs) 282. Remove the display drive card and identify the main components and connectors on the display driver card (2 hrs) 283. Replace the display drive card and re-install. (Before 	 Monochrome And colour, CGA, EGA, VGA, SVGA, Digital and Analogue, interlaced none interlaced. Specifications and comparison Of Monitors. Front panel controls, brightness, contrast, horizontal and vertical height settings. Display cards, bus standards, types CGA, EGA
Knowledge	its hardware	 specifications, front pane controls and settings. (2 hrs 281. Identify the specifications of the display driver card installed in the PC. (2 hrs) 282. Remove the display drive card and identify the main components and connectors on the display driver card (2 hrs) 283. Replace the display drive card and re-install. (Before practicing this skill set, the 	 Monochrome And colour, CGA, EGA, VGA, SVGA, Digital and Analogue, interlaced none interlaced. Specifications and comparison Of Monitors. Front panel controls, brightness, contrast, horizontal and vertical height settings. Display cards, bus standards, types CGA, EGA VGA, SVGA, AGP, memory
Knowledge	its hardware	 specifications, front pane controls and settings. (2 hrs 281. Identify the specifications o the display driver card installed in the PC. (2 hrs) 282. Remove the display drive card and identify the main components and connectors on the display driver card (2 hrs) 283. Replace the display drive card and re-install. (Before practicing this skill set, the already installed drive 	 Monochrome And colour, CGA, EGA, VGA, SVGA, Digital and Analogue, interlaced none interlaced. Specifications and comparison Of Monitors. Front panel controls, brightness, contrast, horizontal and vertical height settings. Display cards, bus standards, types CGA, EGA VGA, SVGA, AGP, memory and drivers.
Knowledge	its hardware	 specifications, front pane controls and settings. (2 hrs 281. Identify the specifications o the display driver card installed in the PC. (2 hrs) 282. Remove the display drive card and identify the main components and connectors on the display driver card (2 hrs) 283. Replace the display drive card and re-install. (Before practicing this skill set, the already installed drive should be removed from 	 Monochrome And colour, CGA, EGA, VGA, SVGA, Digital and Analogue, interlaced none interlaced. Specifications and comparison Of Monitors. Front panel controls, brightness, contrast, horizontal and vertical height settings. Display cards, bus standards, types CGA, EGA VGA, SVGA, AGP, memory and drivers. Main components and
Knowledge	its hardware	 specifications, front pane controls and settings. (2 hrs 281. Identify the specifications o the display driver card installed in the PC. (2 hrs) 282. Remove the display drive card and identify the main components and connectors on the display driver card (2 hrs) 283. Replace the display drive card and re-install. (Before practicing this skill set, the already installed drive 	 Monochrome And colour, CGA, EGA, VGA, SVGA, Digital and Analogue, interlaced none interlaced. Specifications and comparison Of Monitors. Front panel controls, brightness, contrast, horizontal and vertical height settings. Display cards, bus standards, types CGA, EGA VGA, SVGA, AGP, memory and drivers. Main components and connectors on display



 card with a different card given and install. (2 hrs) 285. Servicing of monitors, changing fuses, adjusting colors, brightness and contrast. Setting resolution, loading drivers. Checking and replacing components on the PCB. (3 hrs) 286. Checking and adjusting LCD Monitors. (3 hrs) 287. Install, configure and operate LCD projector. (4 hrs) 288. Install and Configure Touch Pad. (5 hrs) 	 RAM chips and dual port feature principle of working and use of display memory. Installing display drivers, setting features. Information required before changing the display driver card and precautions to be taken while installing a display driver card. LCD and TFT Monitors. Understanding the difference between flat screens and CRT display systems Understanding the displays memory and its effect on quality and performance. Working principle of LCD Projector, its specification, configuration and common faults. Working Principle of Touch
	Pad.(09 hrs)
 Upgrading of System 289. Upgrade Mother board, Memory, CPU, Graphic Card, BIOS, Additional features. (05 hrs) 290. Updating of System Software & Application Software (Requirement & How to update). (07 hrs) Practice on Backup Drives 291. Pen Drive U3 format, USB External Drive (HDD, 	 Upgrading of System Understand the limitation of a PC and scope for upgrading. Understand technical specifications for PC upgrading. Practice on Backup Drives Introduction to removable storage devices, Bulk data storage devices-



capacity, interface	magnetic, optical,
connector, write protection,	magneto optical drives,
Trouble Shooting, Interface.	WORM drives.
(05 hrs)	• Minor repairs and
292. Installation, casing for	maintenance of CDROM
external drive. (08 hrs)	drives.
	 Important parts and
	functions of DVD ROM
	drive.
	• Minor repair works on a
	DVD ROM drive.
	Minor repair works on a
	CD/DVD WRITER.
	• Technology, working
	principle, capacity, media
	of Magneto- Optical Disk
	(MOD) drives.
	Applications.
	 Important parts and
	functions of MOD drive.
	Minor repair works on
	MOD.
	• Latest trends in backup
	devices/media.(09 hrs)
Maintenance and	Maintenance and
Troubleshooting of PC	Troubleshooting of PC
293. Running diagnostics	-
program to identify the	, ,
health and defects of a PC.	assemblies and
Check system performance	components,
using third party utilities.	•
Use benchmarking utilities	1 1
to benchmark systems. (4	purchasing and replacing
hrs)	components.
294. Identify the defect in PC	•
from the audible and	corrective maintenance.
observable symptoms such	• Tools required, Active &
as beep sounds, post	Passive Maintenance,



manage have a	Maintananaa askaslultus
messages. hanged	-
keyboard, erratic display	5
etc., and corrective action.	
(4 hrs)	limitations. Examples of
295. Tracing the circuit of a	commonly used diagnostic
Keyboard. (4 hrs)	programs.
296. Trouble shooting defects	• Probable defects in PC.
related to Keyboard and its	Localizing faults through its
related ports, ports loose	observable visual or audio
connections, replacing	symptoms and possible
cable, replacing keys (DIN,	methods for
PS/2, USB). (4 hrs)	rectification/servicing.
297. Trouble shooting defects	Understanding
related to Mouse and its	•
related ports loose	
connections, replacing	
cable, replacing roller	
and sensing elements.	, ,
(COM, PS/2, USB). (4 hrs)	driver Sample circuit.
298. Study of interface cable	-
connector, replacing	Keyboard and its related
of	ports (DIN,PS/2,USB)
subassemblies of Light pen,	• • • • • •
scanner, digitizer. (4 hrs)	
299. Trouble shooting defects	bad keys. Servicing
related to HDD, (practice of	P
replacing motor, head, PCB	
among faulty drives) cable	
and connector. (4 hrs)	servicing procedure.
300. Trouble shooting defects	
related to CD ROM Drive,	incentation circuits of Light
Attempting for replacement	pen seanner and algreizer.
and adjustments) cable and	• Defects and symptoms
connector. (4 hrs)	related to HDD and its
301. Trouble shooting defects	cable, connector and
related Ports to Jumper	servicing procedure.
setting. (4 hrs)	• Defects related to CD ROM
302. Trouble shooting defects	Drive jamming of
related to Processor. (4 hrs)	



		 303. Trouble shooting defects related to RAM memory modules. (4 hrs) 304. Trouble shooting defects related BIOS. (2 hrs) 305. Trouble shooting defects related to CMOS setup. (2 hrs) 306. Trouble shooting defects related to Battery. (2 hrs) 	 mechanical assembly malfunction of control circuit. and its cable, connector and servicing procedure. Defects related to Ports jumper setting on motherboard and servicing procedure. Defects related to processor, its socket, cooling and servicing
			 procedure Defects related to RAM memory module connector and servicing procedure. Defects related to BIOS, upgrading and servicing procedure. Defects related to CMOS, COMS setup and servicing procedure. Defects related to battery and servicing
Professional Skill 25 Hrs; Professional Knowledge 09 Hrs	Assembling, troubleshooting all the hardware components of Laptop, Tablet/ Smart Devices.	 Tablet / Smart Devices 307. Assembling & disassembling of different types of tablets / Smart Devices. (2 hrs) 308. Testing of various parts with multimeter. (2 hrs) 309. Replacing of faulty parts. (2 hrs) 310. Fault finding &troubleshooting. (2 hrs) 311. Practice Advanced troubleshooting techniques. (2 hrs) 312. Flashing of various brands 	 procedure.(18 hrs) Tablet / Smart Devices Motherboard Introduction. Study of parts of a tablet PC / smart devices. Testing of various parts with multimeter. Steps of repairing various hardware problems. Advanced troubleshooting techniques. Introduction of various software faults. Flashing of various brands



Professional	Perform Network	of tablets / smart devices. (2 hrs) 313. Upgrading operating systems. (2 hrs) 314. Formatting of virus affected devices. (2 hrs) 315. Unlocking of handsets through codes and software. (2 hrs) 316. Troubleshooting settings faults. (2 hrs) 317. Working with iOS, Android, Ice-cream sandwich, Jellybeans. (3 hrs) 318. Installation of PhoneGap framework. (2 hrs)	 of tablets / smart devices. Upgrading operating systems. Locking &unlocking of handsets. Concept of iOS, Android, Ice-cream sandwich, jellybeans. Concept of PhoneGap.(09hrs)
Skill 50 Hrs;	Configuration,	communication equipments	communication equipments
Professional Knowledge 18 Hrs	troubleshooting and Network Security.	 319. Connecting computers with Network with Drop cable and using WiFi configuration. (5 hrs) 320. Basic Programmable switch Configuration. (5 hrs) 321. Spanning Tree Protocol (STP). (5 hrs) 322. Command Line Interface. (5 hrs) 323. IP Routing Process Verifying Configuration. (5 hrs) 	 Network Components - Modems, Firewall, Hubs, Bridges, Routers, Gateways, Repeaters, Transceivers, Switches, Access point, etc their types, functions, advantages and applications. IP Routing in Network RIP, IGRP(09 hrs)
		Network Protection and	Network Protection and
		 troubleshooting 324. Setting up basic protection using public keys and MAC address filters. (6 hrs) 325. Integrate wired with wireless network. (6 hrs) 326. Connect Power over Ethernet (PoE) in network. 	 troubleshooting Collaborating using wired and wireless networks. Protecting a Network. Network performance study and enhancement. (09 hrs)



		(6 brs)	
		(6 hrs)	
		327. Troubleshooting wired and	
		wireless network. (7 hrs)	
Professional	Install and	Server Installation,	Server Installation,
Skill 50 Hrs;	configure Windows	Configuration& Backup	Configuration & Backup
Professional	Server and Linux	328. Identify Server Hardware. (5	• Server concepts,
Knowledge	server.	hrs)	Server Hardware,
18 Hrs		329. Install and configure	Installation steps,
		Windows Server. (5 hrs)	configuration of server.
		330. Install and Configure Active	Concept of Active
		Directory. (5 hrs)	Directory. ADS
		331. Implementing AD Services.	• Overview, ADS
		(5 hrs)	Database, Active Directory
		332. Configuration of broadband	Namespace, Logical &
		modem and sharing	Physical Elements of AD.
		internet connection. (5 hrs)	Introduction to Web
		333. Configure a server as web	Server
		server. (10 hrs)	• Introduction to Messaging
		334. Configuring Mailbox	Services
		Servers. (5 hrs)	 Concept of Backup and
		335. Implementing Backup and	Recovery of Server.(18hrs)
		Recovery. (10 hrs)	
Professional	Configuration and	Install & configure DNS	Install & configure DNS
Skill 100 Hrs;	managing Network	336. Installing and	Concept of DNS.
	server.	Configuring DNS Services. (3	Name resolution - Host
Professional		hrs)	names, NetBIOS names.
Knowledge		337. Setup Name resolution -	DNS Overview.
36 Hrs		Host names, NetBIOS	DHCP Overview.
		names. (3 hrs)	DHCP Clients and
		338. Installing DNS Server. (3 hrs)	Leases.(09 hrs)
		339. Configuring DNS Zones, DNS	Leases. (09 ms)
		Clients, Delegating Zones. (3	
		hrs)	
		340. Testing DNS with nslookup,	
		dnscmd and dnslint. (3 hrs)	
		341. Installing and Configuring	
		DHCP Services. (5 hrs)	
		342. DHCP Server Configuration,	
		Setting up of DHCP. (5 hrs)	



R	outing and Remote Access	Routing and Remote Access
	43. Configuring RRAS. (3 hrs)	Remote Access Overview
	44. VPN implementation. (5 hrs)	• Remote Access Overview VPN Concepts.
	45. Configuring Remote	Remote Access
	Access Authentication	Authentication Protocol
	Protocol. (5 hrs)	RRAS Policies
3,	46. Configuring RRAS Policies.	IAS
	(4 hrs)	 TCP/IP Routing(09 hrs)
34	47. Configuring IAS. (3 hrs)	
	48. Managing TCP/IP Routing.	
	(5 hrs)	
P	lanning and Implementing User	Planning and Implementing
	nd Group Strategies	User and Group Strategies
	49. Adding Account. (3 hrs)	 Concept of User and
	50. Implement AGDLP Process.	Group.
	(3 hrs)	 Planning Security Group
3!	51. Implement User	Strategy
	Authentication Strategy. (4	AGDLP Process
	hrs)	 Planning User
31	52. Planning and	Authentication Strategy
	Implementing OU Structure.	 Planning OU Structure
	(4 hrs)	 Planning a Group Policy
3	53. Planning and Maintaining	Strategy
	Group Policies. (4 hrs)	 Deploying Software
3	54. Configuring User	Through GPO(09 hrs)
	Environment. (3 hrs)	
3	55. Configuring Computer	
	Security. (4 hrs)	
N	Aanaging Server Network &	Managing Server Network &
Ir	nfrastructure	Infrastructure
3!	56. Security Baseline Settings	 Security Baseline and
	and Templates. (2 hrs)	Templates
31	57. Configuring Audit Policy. (2	Audit Policy
	hrs)	 Understanding IPSec
3!	58. Monitoring and	Protocol Security
	Troubleshoot Network	 Planning security for
	protocol. (3 hrs)	Wireless Network
3!	59. Configuring Protocol	Managing Network Traffic
	Security. (3 hrs)	



Professional	Install and	 360. Planning security for Wireless Network. (3 hrs) 361. Monitor Network Traffic. (3 hrs) 362. Troubleshoot Internet Connectivity. (3 hrs) 363. Troubleshoot Server Services. (3 hrs) 364. Use Linux Network Tools to check / maintain / Manage Network. (3 hrs) Linux Server installation and 	 Types of Problems of Internet Connectivity Types and working of Server Services.(09 hrs) Linux Server installation and
Skill 25 Hrs;	configure Windows	configuration	configuration
	Server and Linux	365. Install Linux Server. (3 hrs)	Configuration Plan
Professional Knowledge	server.	366. Create new user and group.	Public and data directory
09 Hrs		(3 hrs)	Host file
		367. Create public and data	• SWAT
		directory. (3 hrs) 368. Create an Imlhosts file. (3	Password Authentication
		hrs)	 Telnet(09hrs)
		369. Check host file. (3 hrs)	
		370. Secure and run SWAT. (3	
		hrs)	
		371. Filter ports. (3 hrs)	
		<i>372.</i> Telnet installation and configuration. (4 hrs)	
Professional	Perform Network	Network Security	Network Security
Skill 25 Hrs;	Configuration,	373. Practice on firewall	Modern Network Security
Professional	troubleshooting	technologies to secure the	Threats and the basics of
Knowledge	and Network	network perimeter. (5 hrs)	securing a network.
09 Hrs	Security.	374. Practice LAN security	Secure Administrative
		considerations and implement endpoint and	Access, LAN security
		implement endpoint and Layer 2 security features.	considerations.Network Security Devices.
		(10 hrs)	 Retwork Security Devices. Cryptography.
		375. Wi-Fi configuration to	• Wi-Fi security
		implement security	considerations.(09hrs)
		considerations. (10 hrs)	
Professional	Image editing and	Raster & Vector Graphics	Raster & Vector Graphics



Skill 100 Hrs; Professional Knowledge 36 Hrs	graphic design using Adobe Illustrator and Flash.	 376. Fundamental techniques of drawing in pencil, charcoal and ink. Emphasis is on realistic representation and visual observation. (2 hrs) 377. Advanced drawing giving emphasis on design and composition and experimental techniques in different media: creating area text, applying basic character settings, paragraph settings, creating text threads, creating text threads, creating text threads, creating text threads, creating text to outlines. (3 hrs) 378. Using the basic selection tools, magic Wand and the Lasso tool, selecting objects by attribute, saving and reusing selections. (2 hrs) 379. Appearances-Targeting objects attributes: adding multiple attributes, applying live effects, expanding appearances, creating graphic styles. (3 hrs) 380. Modifying graphic styles: appearance palette settings, copying appearance. (2 hrs) 381. Working with Groups and Layers: defining and editing groups, working with Layers, Layers and object hierarchy, creating template layers, object, group, and layer attributes. (3 hrs) 382. Advanced Drawing and Editing Path: creating Live 	 Traditional Design concepts Traditional and digital applications of color, concept and composition. Making Selections Understanding Appearances Working with Groups and Layers Advanced Drawing and Path Editing Working with Color Object Transformation and Positioning Use of Brushes Use of Masks Use of Symbols Application of Filters and Live Effects Advanced Text Editing Designing for the Web Creation of Blends Working with Images Performing Specialized Tasks Saving and printing Working with Other programs(18 hrs)
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Paint groups, detecting gaps	
in Live Paint groups, path	
editing with Live Paint, using	
Offset Path, dividing an	
object into a grid, cleaning	
up errant paths. (4 hrs)	
383. Working with Color: defining	
swatches, creating swatch	
groups and libraries, working	
with gradients, patterns,	
using the Color Guide,	
experimenting with color,	
finding colors with kuler,	
modifying color in artwork.	
(2 hrs)	
384. Transformation and	
Positioning: Rotating and	
scaling objects, reflecting	
and skewing objects, using	
the free Transform panel,	
Aligning objects. (2 hrs)	
385. Distributing objects-Using	
Brushes: Creating a	
calligraphic brush, creating a	
scatter brush, creating an art	
brush, creating a pattern	
brush. (3 hrs)	
386. Working with Masks:	
Understanding clipping	
masks, using layer clipping	
masks, creating opacity	
masks. (3 hrs)	
387. Using Symbols: Defining and	
editing symbols, using the	
symbolism toolset. (2 hrs)	
388. Applying Filters and Live	
Effects: Minding your	
resolution settings, Mapping	
artwork to 3Dobjects, using	



the Transform effect. (3 hrs)	
389. Using the pathfinder effects:	
Using the Stylize effect,	
Scribble effect, Warp effect.	
(2 hrs)	
390. Advanced Text Editing:	
taking advantage of Open	
type fonts, using the Glyphs	
panel, wrapping text around	
objects, checking spelling,	
using the change cash	
function, Setting tabs and	
leaders, managing fonts,	
dealing with legacy text. (3	
hrs) 201 Web Decision wing minel	
391. Web Designing using pixel	
preview, specifying web	
slicing, Optimizing web	
graphics, creating simple	
animations. (2 hrs)	
392. Creating a basic Blends,	
using a blend to create an	
airbrush Effect, using a blend	
to create an animation,	
using a blend to evenly	
distribute. (2 hrs)	
393. Working with Images:	
Placing images, using the	
Links panel, The Edit Original	
workflow, Live Trace,	
Rasterizing artwork, Object	
mosaic creating graphs,	
creating a lens flare, using	
gradient Mesh, Envelope	
Warps, Liquefy distortion	
tools, saving your Graphics	
Editing Tool Document,	
Printing your Graphics	
Editing Tool Document,	



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Using the Crop Area tools,	
setting up page tiling. (4 hrs)	
394. Adding XMP metadata	
Exporting programs:	
Exporting files for use in	
QuarkXPress, In Design,	
Word /excel /PowerPoint,	
image Editing Tool,	
Authoring Tool, Special	
effects Tool, Effects (Ps-Ai),	
Preferences. (3 hrs)	
Introduction to Flash	Introduction to Flash
395. Practice on Tool Features,	
User interface, Image Editing	
Tool and Graphics, Editing	
Tool integration, Authoring	, , ,
Tool Video Technology, UI	5
components. (5 hrs)	с , , , , , , , , , , , , , , , , , , ,
396. Practice on Creating and	frames, working with time
-	line.
Importing Graphics Assets,	0,
Working with different	layer, to create a layer
graphic. (7 hrs)	folder, to show or hide a
397. Practice on formats -	layer or folder, to view the
Importing bitmap graphics,	
working with layers and	outlines, to change the
layer folder. (7 hrs)	layer height in the
398. Use the drawing tools, Using	timeline, to change the
object and merge drawing,	order of the layers or
Working with the colour	folders. Using Guide layers.
panels, Creating and using	• Drawing in Flash - to raw
Graphic symbols, using the	with a pencil tool, to paint
Library panel. (8 hrs)	with a brush tool, to draw
399. Practice on Text Effectively-	with pen tool.
Text tool, Adding and	• Using colours in Flash, to
formatting static text,	use a gradient fill.
Changing font rendering	Importing Artwork, Video
methods, Adding input text	and Audio. Different file
fields, Embedding fonts in	formats in Video & Audio.
input text fields, Using for	Flash Compatible Audio &
	LIASH COMPACINE AUUIO &



		best practices. (7 hrs) 400. Practice on Creation of Animations - Working with the timeline, using key frames, blanks key frames and frames, Creating motion tweens, Creating shape tweens, creating transition effects, using animation best practices. (8 hrs) 401. Practice on Basic Action Script - Using Script Assist, Adding actions to a frame, Creating and using Button symbols. (8 hrs)	Video file formats(18 hrs)
Professional Skill 50 Hrs; Professional Knowledge 18 Hrs	Editing Video and Audio using Adobe Premier.	 Video Editing: Tools to be Used Adobe Premier 402. Practice to change Project settings, Preference settings, Asset Management, Sequences & Clips, Offline On-line Clips. (4hrs) 403. Managing Clips: The Project panel, Views, The preview area, Organizing clips and bins, Duplicating and copying clips, Renaming clips, Finding clips(search function), Interpreting Footage, Unlinking and Re- linking Media, The Project Manager. (5hrs) 404. Working with Monitor Panels: Viewing Clips, Playback Controls, Audio Clips, Cuing Clips, Time Ruler Controls, Safe Zones, Display Mode, Wave form and Vector scope Options, The 	 Introduction to Adobe Premier Project Creating a Sequence Editing in the Timeline Refining the sequence Transitions Audio Tiles Effects Output(18hrs)



Reference Monitor, Ganging	
source and Program	
Monitor. (4hrs)	
405. Creating a Sequence Editing	
Methods, In And Out Points,	
Sub Clips, Source And Target	
Tracks, Overlay And Insert	
Edits, Adding Clips By	
Dragging, 3 And 4 Point	
Edits, Lift And Extract,	
Storyboard Editing, Multiple	
And Nested Sequences.	
(5hrs)	
406. Editing in the Timeline: The	
Time Ruler, Adding, Deleting	
and Renaming Tracks,	
Markers, Selecting, Splitting	
Clips, Speed, Duration and	
Reverse, Multicam Editing,	
Synchronizing Clips, Replace	
Clips. (5hrs)	
407. Refining the sequence:	
Snapping, Trimming	
Methods, Trimming Clips,	
Ripple, Roll, Slip and Slide	
Edits, the Trim Panel, Split	
Edits (L and J Cuts). (4hrs)	
408. Practice with Transitions:	
The Effects Panel,	
Understanding Transitions,	
Applying A Transitions,	
Editing A Transitions. (5hrs)	
409. Working with Audio: The	
audio mixer, recording with	
the audio mixer, fading	
panning and balancing	
Effects, Corrective measures	
and Routing tracks. (5hrs)	
410. Practice with Titles: Creating	



Drofossional	Creation	a title Text paths, Roll and crawl titles, Text configuration. (4hrs) 411. Working with Effects: Effect Types, Effect Properties, The Effects Control Panel, Key framing, Motion Effects, Opacity and Volume, Lighting Effects, Time warp (pixel motion Blending), Special effect Tool and Premiere. (5hrs) 412. Making Output: Creating DVDs, Blu-Ray, SWF, MP4 and FLV Files, Media Encoder for DVD Makers using Clip Notes. (4hrs)	
Professional	Creation of	Applying Adobe After Effects	Introduction to Adobe
Skill 100 Hrs;	Graphics	413. Practice on User interface.	After Effects
Professional	Animation using Adobe After	(3 hrs)	Special effect Techniques
Knowledge	Effects and 3Ds	414. Creating and using compositions. (3 hrs)	 Introduction to User interface
36 Hrs	Max.	415. Practice on Key framing	
		and using time line. (4 hrs)	Key framing, Looping
		416. Practice on Looping	animation, motion path
		animation. (3 hrs)	 Introduction to Bound
		417. Practice on Editing motion	Effects, Authoring Tool &
		path. (4 hrs)	Special effects Tool, filter
		418. Create the arrivals Bound	effects and mask to
		Effects. (3 hrs)	components
		419. Simulation between	
		Authoring Tool & Special	transformations, use of
		effects Tool. (3 hrs) 420. Apply filter effects and	common loop sound,
		mask to components. (3	simple scripting in special
		hrs)	effect ToolRotoscoping, Chroma, 2D
		421. Practice on Animate 3D	& 3D tracing, Green/Blue
		transformations. (6 hrs)	screen
		422. Include a common loop	technique/shooting.



sound. (5 hrs) 423. Practice on simple scripting in special effect Tool. (5 hrs) 424. Rotoscoping, Chroma, 2D & 3D tracing, Green/Blue screen technique/shooting. Colour Correction. (8 hrs)	Colour Correction(18 hrs)
 Working with 3Ds MAX 425. Practice on creating projects and Scenes. (4 hrs) 426. Practice on Transform tool basics, Pivot points, Grouping and parenting, modelling with primitives. (4 hrs) 427. Practice on User Interface - Setting up project, Views/panels, Hotbox, Viewing Geometry, Channel Box, Layer Box, Attributes Editor, And QWERTY Navigation. (5 hrs) 428. Working with the camera, over view of MEL, Outliner/ Hyper graph, Grouping /parenting Shelf Marking Menus. (6 hrs) 429. Practice on Modelling – Curve Tools /snapping, Revolving, History, Duplicating, Working with NURBS, Detaching surfaces, Grouping /Duplicating. (7 hrs) 430. Working with polygons, Sub- divisional surfaces, Split polygon Tool, Lofting, Extruding. (5 hrs) 	 Introduction to 3Ds Max Fundamentals & concepts of Animation 3D Animation Techniques User Interface Modelling Lighting /Rending Character Setup & Animation Dynamics(18 hrs)



		 431. Practice on MODELLING, POLYGON TOOLS, with PROXY, NORMALS, Lighting /Rendering. (5 hrs) 432. Practice on Hyper shade, Materials, Apply Materials, Making Shader Networks, Combining Ramps, Layered Textures, Intro to lights, Making Bump Maps. (7 hrs) 433. Working with Shadows, UV Mapping, Specular Maps, Paints FX, Render View, Camera Settings, Render Globals, TOON SHADER. (7 hrs) 	
Professional	Designing Webpage	Introduction to Front Page	Introduction to Front Page
Skill 25 Hrs;	using Front Page	434. Creating Background	• Background Pictures,
Professional Knowledge 09 Hrs	application.	 Pictures Creating Tables - Adding and Deleting Rows, Columns, and Cells Background Colors. (3 hrs) 435. Practicing Picture Manipulation -Transparent, Alt Representation Text Tags, Rotating, Thumbnails, Picture Gallery. (3 hrs) 436. Practicing Hyperlinks - To 'Outside'/External Sites, Internal Link, Bookmark, Email Addresses, Rollover Styles, Target Frames. (3 hrs) 437. Practice on Marquees Practice on Forms - Search Page, Inserting a Form, One Line Text Box, Option Button, Check Box, TextArea, Drop Down Box, 	 Deleting Rows, Columns, and Cells Background Colors, Picture Manipulation - Transparent, Alt Representation Text Tags, Rotating, Thumbnails, Picture Gallery Hyperlinks - To 'Outside'/ External Sites, Internal Link, Bookmark, Email Addresses, Rollover Styles, Target Frames



		Confirmation Pages. (3 hrs)	• Sample Forms Page, Date
		438. Practice on Sample Forms	and Time Stamp,
		Page, Date and Time	Counter, Page
		Stamp, Counter, Page	Transitions, Changing your
		Transitions, Changing your	Password
		Password. (3 hrs)	• Themes, Banners,
		439. Practice on - Themes,	Buttons, Headings,
		Banners, Buttons, Headings,	Hyperlinks/ Bullets/
		Hyperlinks/	,
		Bullets/Horizontal Lines,	Navigation Bars,
		Navigation Bars. (3 hrs)	Frames, Shared Borders, Scheduling a Wah Dage on
		440. Practice on creating Frames,	Scheduling a Web Page or
		Shared Borders. (3 hrs)	Picture to Appear(09hrs)
		441. Practice on Scheduling a	
		Web Page or Picture to	
		Appear. (4 hrs)	
Professional	Designing Webpage	VBScript and Java Script	Programming Language Basics
Skill 100 Hrs;	in HTML and PHP	<u>VBScript</u> -	-
Professional	embedding	442. Practice on Embedding	Introduction to computer
Knowledge	VBScript,	VBScript in HTML, VBScript	programming language,
36 Hrs	JavaScript.	to Display Information,	Generations of
		Hiding VBScript from Older	Programming Languages,
		Browsers, Code	Procedural & non-
		Documentation &	procedural programming
		Formatting, Declaring	Language, Structured &
		Variables, Naming Variables,	Object Oriented
		Variants & Subtypes,	Programming Language,
		Assigning Values to	Algorithm, Flowchart.
		Variables, Determining	Introduction to Scripting
		Variant Subtype, Data	Language, difference
		Subtype Conversion,	between programming
		Numeric & Literal Constants.	and scripting languages,
		(4 hrs)	working principle of
		443. One-Dimensional Arrays,	Scripting language.
		Multi-Dimensional Arrays,	• VbScrpt- Embedding
		VBScript Operators,	VBScript in HTML ,
		Arithmetic Operator	VBScript to Display
		Precedence, Comparison	Information, Hiding
		Operators, Logic Operators,	VBScript from Older



String Concatenation,	Browsers, Code
Procedures, Subroutine	Documentation &
Procedures, Scope of	Formatting, Variables,
Variables, Function	subtypes & Constants,
Procedures, Randomize &	Arrays, VBScript Operators,
RND. (4 hrs)	VBScript Procedures,
444. Control Statements, Four	Program Control &
Control Structures, Using	Structure, Strings &
Loops, Topic title, Strings,	Numbers, Message & Input
Formatting Numbers,	Boxes, Dates & Times,
Message & Input Boxes,	Explorer 5.x DOM, Event
Dates & Times, Splitting Up	Handlers - Top-Down vs.
Dates & Times, Page	Event-Driven
Updates. (4 hrs)	Programming, Mouse
445. The Document Object	
Model(DOM) -Properties,	Validation & Error
Methods, Events &	Handling. VBScript & the
Collections, Event Handlers -	Web - Platform or Host
Top-Down & Event-Driven	dependence.
Programming, Mouse	 JAVA Script Introduction
Events, Keyboard Events,	to Java Script, Where does
Validation & Error Handling.	
•	•
Platform or Host	Comparing Java Script to
dependence. (4 hrs)	VBScript, Comparing Java
JAVA Script-	Script to Java, The Purpose
446. Practice using Java Script in	of Java Script,
an HTML Document, Hiding	Prerequisites, Using Java
Java Script from old Web	Script in an HTML
Browsers. (3 hrs)	Document, Hiding Java
447. Basic Syntax Used in Java	Script from old Web
Script Commands, Variables	Browsers.
- Assigning Values to	Basic Syntax Used in Java
Variables, Concatenating	Script Commands,
String Variables. (3 hrs)	Variables, Functions, Flow
448. Functions- Creating & Calling	Control Structures,
Functions, Sending	Operators, String
Parameters to a Function,	Processing, Objects,
Receiving Parameters out of	History Object, Date
a function, Variable scope &	Object, Using Objects like



Creating an Array, For Loop, Events -Time Status,	
455. Using Objects like Arrays -	
Object Functions. (4 hrs)	
Method, Set Time, Non-Data	
Extracting the Hrs, Set Date	
Extracting the Date,	
Date & Time, Time Zones,	
Commas, Displaying the	
Separating Variables with	
Time by a Single String,	
Object, Setting the Date &	
454. Date Object -Creating a Date	
Method. (4 hrs)	
Buttons, History Go	
the History Object, Creating	
453. History Object - Accessing	
an Object type. (4 hrs)	
Object, Multiple Instances of	
Adding Functions to an	
hrs) 452. Objects -Creating an Object,	
Index of, Char At, Substr. (3	
Lower Case, Index of, Last	
Converting to all Upper or	
451. String Processing - Length,	
Operators. (3 hrs)	
Operators, Logical	
Operators, Numeric	
450. Operators - Unary	
Structure. (3 hrs)	
For Loop, While Loop, For/in	
Structure, If Else Structure,	
449. Flow Control Structures - If	
Events. (3 hrs)	





string, Starting a session,	
Working with session,	
variables, Destroying session,	
Passing session IDs, Encoding	
and decoding session	
variables. (6 hrs)	
461. Practice on Creating and	
deleting a file, Reading and	
writing text files, Working	
with directories in PHP,	
Checking for existence of file,	
Determining file size, Opening	
a file for writing, reading, or	
appending, Writing Data to	
the file Reading characters. (6	
hrs)	
462. Working With Forms -	
Super global variables The	
server array A script to	
acquire user input, Importing	
user input Accessing user	
input , Combine HTML and	
PHP code., sing hidden fields,	
Redirecting the user, File	
upload and scripts. (5 hrs)	
463. Working With Regular	
Expressions - The basic	
regular expressions, PCRE,	
Matching patterns, Finding	
matches, Replace patterns,	
Modifiers, Breakup Strings.	
(5 hrs)	
464. Working with Classes	
And Objects - Creating an	
object, Object properties,	
Object methods, Object	
constructors and destructors,	
Class constants Class	
inheritance, Abstract classes	
1	



Professional	Install and	and methods, Object serialization, checking for class and method, existence, Exceptions, Iterators. (6 hrs)	Mu SQI
	Install and	My SQL	My SQL
Skill 50 Hrs; Professional Knowledge 18 Hrs	Configure MySQL.	 465. Installation of MySQL. (4 hrs) 466. Configuration of MySql. (4 hrs) 467. Server Client architecture. (4 hrs) 468. Practice on Table Creation Rules. (4 hrs) 469. Practice on MySQL syntac and creating database design. (5 hrs) 470. Practice on data migration. (4 hrs) 471. Importing and exporting formats. (5 hrs) 472. Practice on data tunneling. (5 hrs) 473. Practice on Database repair and archival. (5 hrs) 474. Practice on cross database syntax equivalents.(5 hrs) 475. Preparation of Database Project in any Industry/organization. (5 	 The SQL Create Command Table Creation Rules Dropping a Table The SQL-INSERT Command Inserting NULL Viewing data (SQL-SELECT) Updating Data in a table (The SQL-UPDATE command) Deleting rows of data (The SQL-DELETE command) Viewing the structure of an already existing table (SQL-DESCRIBE command): MySQL Scripting.(18hrs)
		hrs)	
Professional	Create and publish	Web Page Design and Publishing	Web Page Design and
Skill 25 Hrs;	Web pages in Local	in a local server / local web	Publishing
Professional Knowledge 09 Hrs	web server.	server 476. Create a Web page using HTML, CSS, VB Script and Java Script. By installing and configuring IIS convert your windows PC into web server.	 Design issues, URL, Home Page, Web Browser, Network Server, IIS, Web Server, Publishing / hosting website in a network server / web server. Web



		 (08hrs) 477. Install any open source web server like Apache / Wamp. Publish / Host website in the local web server. (07hrs) 478. Blog Creation - Create a blog in free blogging service like blogspot.com, www.blogger.com, wordpress etc., add themes. Maintaining Blog.(10hrs) 	 Auditing, VPN Account, Remote updating. Blog Creation Define Blog, History, Blog Taxonomy, What to Blog about? How to Blog - Self hosted or free blogging service, Difference between a blog and a website.(09hrs)
Professional	Designing Website	Dreamweaver	Overview of Information
Skill 50 Hrs;	using Dreamweaver	479. Create Web sites with	Security
Skill SO Hrs; Professional Knowledge 18 Hrs	using Dreamweaver application and open source software. Configure and secure network against threat, vulnerability and risk for information security.	 479. Create Web sites with hyperlinks and graphic images.(4 hrs) 480. Use page layout tools such as tables, frames, and layouts.(4 hrs) 481. Utilize Cascading Style Sheets (CSS), HTML, rollovers, behaviors, and forms.(4 hrs) 482. Incorporate Dreamweaver with related software such as Macromedia Fireworks and Flash.(4 hrs) 483. Incorporate Dreamweaver with related PHP, VBScript, JavaScript, My SQL etc. (4 hrs) 484. Manage Web sites with directories and different types of computer files.(5 hrs) 	 Understanding Information Security - Need of the Information security, Basics of IS (CIA), History and evolution of IS, Dimensions of Information Security, Intranet/Internet, Information Security and Cyber Security relationship



	codes, Espionage, etc
	Identification of Threats -
	Probing of threats,
	Scanning of threats,
	Modus Operandi, Sources
	of Threats,
	• External threats, Internal
	threats, Best Practices or
	Guidelines used to Identify
	, Threats -Conduct regular
	education and awareness
	trainings for employees
	and third parties, Best
	Practices or Guidelines
	used in mitigation of
	threats, Deploying up to
	date technology.
	 Maintaining Systems and
	Procedures, Educating
	Users, Conducting regular
	education and awareness
	trainings for employees
	and third parties
	Collaborate with peers
	and experts through
	different forums to
	understand contemporary
	issues and solutions.(09
	hrs)
Open Source Tools for Web	Information Security
Designing	Vulnerabilities
485. Practice on open source	• Why do Information
tools for web designing and	Security Vulnerabilities
its related work like: Text	exists - Types of Technical
Editor - Aptana Studio. (3	Vulnerabilities, Types
hrs)	of Native Vulnerabilities,
486. WYSIWYG web page editor –	Understanding Security
KompoZer, source code	Vulnerabilities, Flaws in
editor - Notepad++, plugin	Software or Protocol



for Firefox - Firebug, highly	Designs, Weaknesses in
stable and feature rich web	How Protocols and
development environment -	Software Are
Quanta Plus. (3 hrs)	Implemented, Weaknesses
487. Cross platform text editor – j	in System and Network
Edit, versatile graphics	Configurations,
manipulation package-GIMP,	Weaknesses in Web or
cross operating system	Cloud applications,
diagram creation application	Weaknesses in Online
–Dia. (3 hrs)	e-transactions, Browser
488. Work with graphics	Security and Role of
application - Krita, vector	cookies and pop-ups,
graphics editor –Inkscape. (3	Security holes in Browser,
hrs)	Web Applications, OS, and
489. Install & work with ftp	Smart phones, Identifying
application –File Zilla, SFTP	role of Social sites and
client and FTP client – Win	media in cyber security
SCP. (2 hrs)	and vulnerability
Overview of Information	Understanding
Security	Vulnerability Assessment
490. Demonstrate Video show on	Tools and Techniques ,
Information Security. (2 hrs)	Techniques to Exploit
Overview of Security threats	Vulnerabilities,
491. Demonstrate Video show on	• Techniques to Fix security
Security Threats, Mock test	Vulnerabilities
on security threats. (2 hrs)	Risk Management
Information Security	• What is Risk?, Relationship
Vulnerabilities	between Threat,
492. Observe using Video show	Vulnerability, and Risk
on Security Vulnerabilities.	What Is the Value of an
(3 hrs)	Asset? What Is a Threat
Risk Management	Source/Agent? Examples
493. Demonstrate Video show on	of Some Vulnerabilities
Risk Management Mock test	that are Not Always
on Risk Management the	Obvious
Vulnerabilities, Identify	• What Is a Control?, What
security vulnerabilities on a	Is Risk Likelihood and
regular basis using requisite	consequences? What Is
tools and processes. How to	Impact?, Control



fix the security gaps and		Effectiveness
holes, Identifying liabilities	•	Risk Management,
of service providers,		Purpose of Risk
software vendors,		Management, Risk
Software authors, system		Assessment (Phases), Why
owners, and third parties,		Is Risk Assessment
Best Practices and		Difficult?, Types of Risk
Guidelines to mitigate. (4		Assessment, Different
hrs)		Approaches to Risk
		Analysis, Best Practices
		and Guidelines in
		Assessing and Calculating
		Risks
	•	Develop and implement
		policies and procedures to
		mitigate risks arising from
		ICT supply chain and
		outsourcing.
	•	Best Practices and
		Guidelines in Mitigating
		Risk.(09 hrs)
Industrial Visit /Project Work		

Broad Areas:

- a) Graphics designing project using Adobe Illustrator and Flash.
- b) Create a multimedia project using Adobe after Effects and 3Ds Max.
- c) Preparation of Database Project in any Industry /organization using My SQL.
- d) Create a Website using Dreamweaver and host it in a local server.



SYLLABUS FOR CORE SKILLS

- 1. Workshop Calculation & Science (Common for two year course) (80 hrs + 80 hrs)
- 2. Engineering Drawing (Common for Group-II (Electrical, Electronics & IT Trade Group)) (80 hrs + 80 hrs)
- 3. Employability Skills (Common for all CTS trades) (160 hrs + 80 hrs)

Learning outcomes, assessment criteria, syllabus and Tool List of Core Skills subjects which is common for a group of trades, provided separately in www.bharatskills.gov.in



	LIST OF TOOLS & EQUIPMENT			
	INFORMATION TECHNO	LOGY (For batch of 24 trainees)		
S No.	Name of the Tools and Equipment	Specification	Quantity	
A. TRA	INEES TOOL KIT		-	
1.	Basic Analogue Electronics Trainer		5 Nos.	
2.	SMPS Trainer		4 Nos.	
3.	Insulated Screw Driver (different types)		25(24+1) Nos.	
4.	Knife double bladed electrician		25 (24+1) Nos.	
5.	Insulated handle thin connector screw driver		25 (24+1) Nos.	
6.	Line tester		25 (24+1) Nos.	
7.	Heavy duty screw driver		25 (24+1) Nos.	
8.	Combination plier		25 (24+1) Nos.	
9.	Long nose plier		25 (24+1) Nos.	
10.	Tweezer		25 (24+1) Nos.	
11.	Phillips type screw driver set		25 (24+1) Nos.	
12.	Wire stripper		25 (24+1) Nos.	
13.	Soldering iron	20/25watts	25 (24+1) Nos.	
14.	Desoldering pump		25 (24+1) Nos.	
15.	Digital Multimeter-hand held		25 (24+1) Nos.	
16.	Temperature controlled soldering/ desoldering station		7 Nos.	
17.	SMD soldering/desoldering station		7 Nos.	
18.	Wire gauge set		7 Nos.	
19.	Permanent magnet bar		12 Nos.	
20.	Solenoid with core		12 Nos.	
21.	Electric bell		12 Nos.	
22.	Battery storage lead acid	6V & 12 V	7 each	
23.	Maintenance Free Battery		5 Nos.	
24.	Hydrometer		8 Nos.	
25.	Battery charger		5 Nos.	
26.	Rheostat variable values		8 Nos.	
27.	Variable resistance /potentiometer		7 Nos.	



28.	DC& AC ammeter (table model for lab experiments)	0-50 mA	7 Nos.
29.	DC & AC ammeter (table model for lab experiments)	0-500 mA	7 Nos.
30.	DC & AC ammeter (table model for lab experiments)	0-1mA	7 Nos.
31.	DC & AC ammeter (table model for lab experiments)	0-1 A	7 Nos.
32.	Analog Multimeter		7 Nos.
33.	LCR meter		7 Nos.
34.	Dual Trace Oscilloscope	20 MHz	5 Nos.
35.	Function Generator		5 Nos.
36.	Pulse Generator		5 Nos.
37.	Bread board for connecting various components i.e. diode, resistances, capacitors etc of different dimensions		48 Nos.
38.	Lug boards for circuit wiring		48 Nos.
39.	Regulated DC Power Supply	0-30 V, 2 Amp	25 (24+1) Nos.
40.	SMPS of PC		12 Nos.
41.	PC Pentium IV or latest configuration (for testing with SMPS)		5 Nos.
42.	UPS		As required
43.	Printer laser (B& W)		1 No.
44.	Transformer	0-12 V, 6-0-6 V, 1 Amp	05 each
45.	Rubber gloves		12 Nos.
46.	PCB, solder flux etc& electronic components		As required
47.	Wires, cables Plug sockets switches of various types and other consumables		As required
48.	Resistors, Capacitors, Inductors, Diodes, Transistors, Thyristors, ICs etc.		As required
49.	Spare Transformers and power devices required for servicing SMPS		As required
50.	Various types of Button Cells		As required
51.	Connecting screwdriver 100 mm		25 (24+1) Nos.
52.	Neon tester.	500 V	25 (24+1) Nos.
53.	Screw driver set	(set of 5)	25 (24+1) Nos.
54.	Insulated combination pliers	150 mm	25 (24+1) Nos.



55.	Insulated side cutting pliers	150 mm	25 (24+1) Nos.
56.	Long nose pliers	150 mm	25 (24+1) Nos.
57.	Soldering iron	25 W. 240 V.	25 (24+1) Nos.
58.	Electrician knife		25 (24+1) Nos.
59.	Tweezers 100mm		25 (24+1) Nos.
60.	Soldering Iron Changeable bits	15W	25 (24+1) Nos.
61.	Crimping tool (pliers)		2 Nos.
62.	Magneto spanner set		2 Nos.
63.	Screw driver	150mm	5 Nos.
64.	Steel rule	150mm	2 Nos.
65.	Scriber straight	150mm	2 Nos.
66.	Soldering Iron	240W	1 Nos.
67.	Allen key set	(set of 9)	2 Nos.
68.	Tubular box spanner	(set of 6nos)	1 No.
69.	Magnifying lenses	75mm	3 Nos.
70.	Continuity tester		7 Nos.
71.	Soldering iron	10W	7 Nos.
72.	Cold chisel	20mm	1 No.
73.	Scissors	200mm	1 No.
74.	Handsaw	450mm	1 No.
B. WC	ORKSHOP FURNITURE		
75.	Instructor table & chair		01 each
76.	Suitable Table Teak Wood fitted with Back Panel complete with different types of meters/switches, AC/DC supplies etc. required for testing of electronic circuits. Insulation mats to cover below the table.		As required
77.	Stool cum chair		20 Nos.
78.	Computer Table, Printer Table, Stools		As required
79.	Green Glass Board		1 No.
80.	Metal Rack		As required
81.	Locker with 10 drawers (standard size) for 20 trainees		2 Nos.
82.	Storage Almirah		As required
83.	Book shelf (Glass panel)		1 No.
05.	book shell (Class panel)		± 110.



	etc.		
85.	Computer Maintenance Tables of Suitable sizes		As required
86.	Screwdriver Set of	min. 5 bits (Combination of star & minus) + 1 ext. rod	1 Set
87.	Crimping Tool for BNC and RJ-45 connectors		1 No. Each
88.	Punching Tool		1 No.
C. HAR	RDWARE		
89.	Desktop Computer	CPU: 32/64 Bit i3/i5/i7 or latest processor, Speed: 3 GHz or Higher. RAM:-4 GB DDR-III or Higher, Wi-Fi Enabled. Network Card: Integrated Gigabit Ethernet, with USB Mouse, USB Keyboard and Monitor (Min. 17 Inch. Licensed Operating System and Antivirus compatible with trade related software.	25 (13 nos. connected in LAN, 12 for Assy & Maint. Practice)
90.	Desktop Computer (Server)	CPU: 32/64 Bit i3/i5/i7 or latest processor, 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. 17 Inch), Standard Ports and connectors. DVD Writer, Speakers And Mic. Licensed Windows Operating System / OEM Pack (Preloaded), Antivirus / Total Security	1 No.
91.	ISDN/Broad Band Internet Connection		1 No.
92.	Dual Trace Oscilloscope	20 MHz	2 Nos.
93.	Digital trainer kit		4 Nos.



94.	Logic Probes/Logic Pulser		4 Nos.
95.	Digital IC tester		4 Nos.
96.	Function Generator		4 Nos.
97.	Pulse Generator		4 Nos.
98.	Digital ICs		As required
99.	DC regulated power supply	5 volts and 12 volts	12 Nos.
100.	Digital Multimeter		12 Nos.
101.	Analog Multimeter		8 Nos.
102.	Digital LCR Meter		3 Nos.
103.	Bread Boards for circuit wiring and testing		20 Nos.
104.	Meggar	500V	2 Nos.
105.	Ammeter	(0-10 mA), (0-50mA), (0-100mA) (table model)	02 each
106.	Voltmeter	(0-1V), (0-10V), (0-30V) (table model)	02 each
107.	Different types and makes of Motherboards		10 Nos.
108.	CD Writers		4 Nos.
109.	DVD writer		4 Nos.
110.	External HDD		12 Nos.
111.	Floppy Disk Drive		12 Nos.
112.	CD ROM Drive		12 Nos.
113.	Display card		12 Nos.
114.	Ethernet card		12 Nos.
115.	Computer monitor of different types	15"/17"	4 Nos.
116.	Cabinet with SMPS		12 Nos.
117.	Keyboard and mouse		12 each
118.	Thumb drive	latest specification	12 Nos.
119.	Internal PCI modems of at least four different makes and types		1 each
120.	External modems of at least two different makes and types		1 each
121.	COMBO drives at least four different makes and types		1 each
122.	Dot matrix printer		2 Nos.
123.	Inkjet printer		2 Nos.
124.	Laser printer	B&W	2 Nos.



125.	Scanner		1 No.
126.	UPS		Asrequired
127.	Soldering iron		25 (24+1) Nos.
128.	De-soldering pump/gun		25 (24+1) Nos.
129.	Temperature controlled soldering/ desoldering station		4 Nos.
130.	Computer Tool kit for students		25 (24+1) Nos.
131.	Screw Driver Set - Star/Flat of different sizes		4 each
132.	Long Nose Plier		12 Nos.
133.	Combination Plier		5 Nos.
134.	Tweezer		25 (24+1) Nos.
135.	Wire Stripper		10 Nos.
136.	IC Puller		25 (24+1) Nos.
137.	Vacuum Cleaner		1 No.
138.	Hand blower		1 No.
139.	Hand Brush		As required
140.	Silicon grease		As required
141.	Heat sink agent		As required
142.	RAM	512 MB	As required
143.	CPU different types		As required
144.	HUB/Switch	8/16 port	4 Nos.
145.	ISDN Line (for Internet)/Cable broadband connection		1 No.
146.	Network Interface Card		12 Nos.
147.	Modem (Internal & External)		1 each
148.	Switch		1 No.
149.	Router		1 No.
150.	Crimping tools for network cable		4 Nos.
151.	UTP cable		As required
152.	RJ 45 connectors		As required
153.	Outlet points / Wall outlets		As required
154.	Vacuum cleaner		1 No.
155.	Laptop, Notebook		01 each
156.	Intel Mobile Desktop based PC with LCD monitor	CPU: 32/64 Bit i3/i5/i7 or latest processor, Speed: 3 GHz or Higher. RAM:-4 GB DDR-III or Higher, Wi-Fi Enabled. Network	01 no



		Card: Integrated Gigabit Ethernet,	
		with USB Mouse, USB Keyboard	
		and Monitor (Min. 17 Inch.	
		Licensed Operating System and	
		Antivirus compatible with trade	
157.	Tablet	related software.	04 Nos.
157.	Printers: Laserjet, deskjet, passbook,		01 each
158.	mfd		UT Each
159.	Network Printer		01 No.
160.	online UPS		As required
161.	LAN Cards, Wi-fi LAN Cards		06 Nos. each.
162.	LCD/DLP Projector		01 No.
163.	Power Meter		02 Nos.
164.	Crimping Tools		06 Nos.
165.	Computer Toolkits		06 Nos.
166.	Computer Spares:		As required
167.	Motherboards (of different make)		4 Nos.
168.	Cabinets		4 Nos.
169.	Processors (of different make)		4 Nos.
170.	Hard Disk different types	500 GB or better	4 Nos.
171.	Optical Drives		4 Nos.
172.	LCD/LED/TFT Monitors		2 Nos.
173.	Pen Drives		4 Nos.
174.	External Hard disk		2 Nos.
175.	External DVD Writer		2 Nos.
176.	Keyboards		4 Nos.
177.	Mouse		4 Nos.
178.	Anti static pads		4 Nos.
179.	SMPS		4 Nos.
180.	Digital Multimeters		12Nos.
181.	Blu-Ray drive and player		2 Nos.
182.	External Hard Disk		2 Nos.
183.	Digital Camera		2 Nos.
184.	HD Display		2 Nos.
185.	Network storage		2 Nos.
186.	Card Reader		2 Nos.
187.	Game video card		2 Nos.
188.	Web Cam		2 Nos.



189.	Surround sound speakers		2 Nos.
190.	Different types of memory cards		2 Nos. each
191.	Laptop kits		12Nos.
	Laptop spares: Cabinet with display,		As required
192.	memory, hard disk, battery pack,		
	keyboard membrane, chargers		
193.	SMPS Trainer kit		2 Nos.
194.	UPS Trainer kit		As required
195.	Power electronics Trainer kit		2 Nos.
196.	Post error debugging card		4 Nos.
197.	SMPS Tester		4 Nos.
198.	PCI slot Testing tool		4 Nos.
199.	Wireless Network Adapter		6 Nos.
200.	Wireless Access Point		4 Nos.
201.	Router		4 Nos.
202.	Managed Layer 2 Ethernet Switch	8/16/24 port	2 Nos.
203.	Managed Layer 3 Ethernet Switch	8/16/24 port	2 Nos.
204.	Network Training System		2 Nos.
205.	LAN Protocol Simulation and Analyser		2 Nos.
205.	Software		
206.	Network and Internet security trainer		2 Nos.
207.	LAN cable tester		2 Nos.
208.	Network cables - UTP		As required
209.	Network Cables - coaxial, flat, ribbon		As required
210.	LAN Cards, wi-fi LAN Card		05 Nos. each
211.	Connectors for cables		As required
212.	Power Meter		2 Nos.
213.	Media Convertor		4 each
214.	UTP jack panel	8/16/24 port	2 Nos.
215.	SC Couplers		12Nos.
216.	SC Pigtails		12Nos.
217.	Fluke Meter		2 Nos.
218.	Crimping Tools		6 Nos.
219.	Switch with POE ports		2 Nos.
220.	POE adapters		2 Nos.
221.	Network Camera (Outdoor / Indoor)		2 No. each
222.	Fibre Optics cable with LC connector		As required
223.	LC connector module		As required.



224.	Workstation for multimedia	i700 (i7) PROCESSOR or Quad core or Higher, 8 GB RAM, 1 Terabyte HDD, 22" TFT Monitor101 DVD OR BLU-RAY WRITER, KEYBORD/INTERNET, USB Optical	2 Nos.
		Mouse, USB Keyboard with latest license of OS	
225.	Colour Laser Printer		1 No.
226.	Optical Scanner (Desk Top Type)		1 No.
227.	Web Cam (Digital Camera)		1 No.
228.	DVD or Blu-ray writer		2 Nos.
229.	UPS for NODES and server		As required.
230.	Room temperature thermometer		1 No.
231.	Digital Still SLR Camera		1 No.
232.	Digital Video Camera		1 No.
D. SOF	TWARE (Licensed Version)		
233.	Microsoft Window	latest version	01 + 10 licenses
234.	MS Office	latest version	01 + 10 licenses
235.	Anti virus	latest version	11 Nos.
236.	Network troubleshooting utilities	latest version	4 Nos.
237.	Linux Server	latest version	1 No.
238.	Adobe PageMaker	latest version	11 licenses
239.	Corel Draw	latest version	11 licenses
240.	Adobe Photoshop	latest version	11 licenses
241.	Adobe Premiere	latest version	11 licenses
242.	Sound Forge	latest version	11 licenses
243.	3D STUDIO Max	latest version	11 licenses
244.	Visual Basic	latest version	11 licenses
245.	Network Management Software	latest version	01 No.
246.	Data recovery software	latest version	2 Nos.
247.	LINUX Server Operating System (Samba / Su-se)	latest version	01 No.
248.	Open source Pc Utility / Tweak Software	latest version	As available
249.	Adobe Photoshop (academic edition with 10 user license)	latest version	1 No.
250.	3D STUDIO Max (academic edition with 10 user license)	latest version	1 No.



251.	Adobe Flash (academic edition with 10	latest version	1 No.
	user license)		
252.	Adobe Dreamweaver (academic edition	latest version	1 No.
252.	with 10 user license)		
252	Adobe premier Suite (academic edition	latest version	1 No.
253.	with 10 user license)		
254.	Front Page Editor (Academic edition	latest version	1 No.
	with 10 user license)		
Note: -			·

1. All the tools and equipment are to be procured as per BIS specification.



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ABBREVIATIONS

CTS	Craftsmen Training Scheme
ATS	Apprenticeship Training Scheme
CITS	Craft Instructor Training Scheme
DGT	Directorate General of Training
MSDE	Ministry of Skill Development and Entrepreneurship
NTC	National Trade Certificate
NAC	National Apprenticeship Certificate
NCIC	National Craft Instructor Certificate
LD	Locomotor Disability
СР	Cerebral Palsy
MD	Multiple Disabilities
LV	Low Vision
HH	Hard of Hearing
ID	Intellectual Disabilities
LC	Leprosy Cured
SLD	Specific Learning Disabilities
DW	Dwarfism
MI	Mental Illness
AA	Acid Attack
PwD	Person with disabilities



