SKILL DEVELOPMENT PROGRAM

- **COORDINATOR DETAIL AND CONTACT:**

College Name: Sir Visvesvaraya Institute of Technology, Nasik **Skill Coordinator Name**: Prof.R.R.Bhambare **Mail Id:** bhambare.rajesh@gmail.com , **Mobile No: 9922921219**				
Sr. No	**Name of Course**	**Course Coordinator**	**Mobile No**	**Mail. Id**
1	COMPUTER NETWORK ASSISTANT	Prof.S.A.Gade	9404695433	shyam_gade2001@yahoo.co.in
		Prof. N.B.Vikhe	7720951777	aryanvikhe007@gmail.com
2	COMPUTER HARDWARE ASSISTANT	Prof. U.R.Patole	9960230022	uttam.patole@gmail.com
		Prof.R.S.Bhalerao	9561508626	rushibhalerao4u@gmail.com
3.	SOFT AND ENTREPRENEURSHIP SKILL	Prof.A.P Kare	9822875337	amolkare@gmail.com
		Prof.V.B. Parkhe	9422704516	virmba09@gmail.com
4	MECHANICAL OPERATION ATTENDANT IN CHEMICAL PLANT	Prof. Pulate A.B.	9850700492	anilpulate@gmail.com
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1.COMPUTER NETWORK ASSISTANT:

A. JOB ROLE:

The role of a **Computer Network Assistant** is to support and maintain computer network systems and its peripherals. This includes installing, diagnosing, repairing, maintaining, and upgrading basic network hardware and equipment while ensuring optimal network performance. The person will also troubleshoot problem areas in a timely and accurate fashion, and provide end user training and assistance where required. Install, maintain and setup LAN with Internet Connection and protection / security.

B. OBJECTIVES OF COMPUTER NETWORK ASSISTANT:

- Installing, maintaining and repairing network software or hardware
- Troubleshooting different computer network issues
- Determining and installing appropriate protection/security measures
- Installing& Configuring basic computer networks
- Providing technical support on-site or via phone or email
- Install, configure, and maintain common end user network application software. May train and provide assistance to end users.
- Troubleshoots software and hardware problems related to Internet applications.
- Install, maintain and setup network with computers, printers and other peripheral equipment as well as configure broadband equipment.

C. TERMINAL COMPETENCY:

After completion of the training, Participants would be able to:

- Plan and prepare for installation
- Install software/equipment/device/network system
- Plan and prepare for diagnosis of faults of computer network systems
- Diagnose faults of computer network systems
- Repair defects in computer systems and networks
- Test systems and networks
- Plan and prepare for network configuration
- Configure computer network systems
- Inspect and test configured computer network systems
- Plan and prepare for the maintenance of computer network systems
- Maintain network systems
- Plan and prepare for the security of computer network systems
- Maintain Network security
- Inspect and test configured/repaired computer network system

D. DETAIL OF COURSES:

Sr. No	Name of Course	Duration of Course	Qualification of Trainee
1	COMPUTER NETWORK ASSISTANT	500 Hours	10th Pass

E. SYLLABUS:

"COMPUTER NETWORK ASSISTANT"
Duration : 500 Hours. / 13 Weeks / 3 months

Week No.	Practical	Theory
1	***Components of the Computer Network, Crimping & Punching and Cabling*** Familiarization with various Network devices, Connectors and Cables. Understanding the Layout of network. Crimping practice with straight and cross CAT 5 cables. Punching practice in IO Box and patch panel. Crimping and making cables. Create cabling in a lab with HUB/Switch and IO Boxes and patch panel. Fitting Switch Rack.	Introduction to Computer Networks – Advantages of Networking, Peer-to-Peer and Client/Server Network. Network Topologies – Star, Ring, Bus, Tree, Mesh, Hybrid. Type of Networks – Local Area Networks (LAN), Metropolitan Area Networks (MAN), Wide Area Networks (WAN) and Internet, Ethernet, Wi-Fi, Bluetooth, Mobile Networking, Wire and wireless Networking. Difference between Intranet and Internet. Communication Media & Connectors – Unshielded twisted-pair (UTP), shielded twisted-pair (STP), Filber Optics and coaxial cable: RJ-45, RJ-11, BNC. Understanding color codes of CAT5 cable. 568A and 568B convention. Introduction to Data Communication – Analog and Digital Signals, Simplex, Half-Duplex and Full-Duplex transmission mode.
2	***Install & configure a Network,*** Installing & Configuring a Peer-to-Peer Network using Windows Software. Making cables by crimping. Connect computers using Bluetooth. Connecting computers using Wi-Fi configuration. Basic Programmable switch Configuration	OSI Model - The functions of different layers in OSI model Network Components – Modems, Firewall, Hubs, Bridges, Routers, Gateways, Repeaters, Transceivers, Switches, Access point, etc. – their functions, advantages and applications.
3	***IP Addressing & TCP/IP*** IP Addressing technique(IP4/IP6) and Subnetting and Supernetting the network.	Protocols, TCP/IP, FTP, Telnet etc., Theory on Setting IP Address(IP4/IP6) & Subnet Mask, Classes of IP Addressing.
4	***Other Network Protocols*** Working with SMTP, TELNET, FTP, HTTP, SNMP etc. Practice on configuring DHCP.	Simple Mail Transfer Protocol (SMTP), Telnet, File Transfer Protocol (FTP), Hyper Text Transfer Protocol (HTTP), Simple Network Management Protocol (SNMP). Network Security Concept of Dynamic Host Control Protocol
5	***Sharing Resource & Internet connection.*** Sharing Resource and Advance Sharing Setting. Installing Proxy Server. Exposure and using Internet. Setting E-mail	Concept of Internet. Architecture of Internet. DNS Server. Internet Access Techniques, ISPs and examples(Broadband/Dialup/Wifi). Concept of Social Networking Sites, Video

	accounts. Conferencing. Installing and Configuring Internet Connection on a PC using Broadband or Dongle.	Calling & Conferencing. Concept of VIRUS and its Protection using Anti Virus, UTM and Firewall.
6	***Network Protection and troubleshooting.*** Setting up basic protection using public keys and MAC address filters. Integrate wired with wireless network. Power over Ethernet(PoE). Troubleshooting wired and wireless network.	Collaborating using wired and wireless networks, Protecting a Network, Network performance study and enhancement.
7	***Control & monitoring of network devices.*** Setting up of basic collaboration tool like NetMeeting for activities like chat, application sharing, remote desktop access and control, VoIP. Setup IP camera for basic surveillance scenario, logging and monitoring of devices / locations.	Surveillance using network devices, collaboration on network for team optimization and support activities. Remote management of devices.
8-9	***Server Installation & Basic Configuration.*** Install and configure Windows Server Configure services like Active Directory, DNS and DHCP. Configuration of broadband modem and sharing internet connection. Linux Network Tools to Check / Maintain / Manage Network.	Server concepts, Installation steps, configuration of server. Concept of Active Directory and DNS. Setting up of DHCP, Routing and remote access.
10	***Network Security*** Practice on firewall technologies to secure the network perimeter. Practice LAN security considerations and implement endpoint and Layer 2 security features. Wi-fi configuration to implement security considerations.	***Network Security*** Modern Network Security Threats and the basics of securing a network. Secure Administrative Access, LAN security considerations. Cryptography. Wi-fi security considerations.
11	***Internet and Web Browser*** Practice web browsing using popular web browsing software,Configuring web browser. Search for content using popular search engines. Use favourite folder for browsing quickly. Downloading & Printing Webpages. Using e-mail – Opening & configuring email client, mailbox: inbox and outbox, Creating and sending e-mail, Replying to an e-mail message, Forwarding and e-mail message, Sorting and searching emails. Sending document/softcopy by email, activating spell checking, using address book, Handling SPAM, Removal of Cookies.	***Internet and Web Browser*** World wide web and website Web Browsing and popular web browsing software. Introduction to Search Engines, Popular Search engines. Concept of Favourites Folder. What is an Electronic Mail. Email Addressing, BCC and CC, Inbox, Outbox, Address book, SPAM.
12	**Project Work**	
13	**Examination**	

F. GOVT LINKS

1. https://mahakaushalya.com/

2. https://www.mahakaushalya.com/Site/Training

3. dget.nic.in/upload/uploadfiles/files/MES-CNA_2014.pdf

4.http://www.mssds.in/

5.http://www.sdi.gov.in/

G. PHOTOS FROM THE RESPECTIVE SECTOR.

2.COMPUTER HARDWARE ASSISTANT:

A. JOB ROLE:

The role of a Computer Hardware Assistant is to support and maintain computer systems, desktops, and peripherals. This includes installing, diagnosing, repairing, maintaining, and upgrading all hardware and equipment while ensuring optimal workstation performance. The person will also troubleshoot problem areas in a timely and accurate fashion, and provide end user training and assistance where required.

B. OBJECTIVES COMPUTER HARDWARE ASSISTANT:

- Installing, maintaining and repairing software or hardware
- Troubleshooting different computer issues
- Determining and installing appropriate protection/security measures
- Providing technical support on-site or via phone or email
- Install, configure, and maintain common end user application software. May train and
- provide assistance to end users.
- Troubleshoots software and hardware problems related to Internet applications.

C. TERMINAL COMPETENCY:

After completion of the training, Participants would be able to:

- Plan and prepare for installation
- Install software/equipment/device system
- Plan and prepare for diagnosis of faults of computer systems
- Diagnose faults of computer systems
- Repair defects in computer systems
- Test systems
- Plan and prepare for configuration
- Configure computer systems
- Inspect and test configured computer systems
- Plan and prepare for the maintenance of computer systems
- Maintain computer systems
- Inspect and test configured/repaired computer system

D. DETAIL OF COURSES

Sr. No	Name of Course	Duration of Course	Qualification of Trainee
1	COMPUTER HARDWARE ASSISTANT	500 Hours	10th Pass

E. SYLLABUS OF COURSES

"COMPUTER HARDWARE ASSISTANT"

Duration : 500 Hours. / 13 Weeks / 3 months

Week No.	Practical	Theory
1	***Familiarization with the Institute and Safety*** a) Visits to workshops, labs, office, stores etc., of the institute. b) Demonstration of safety precaution. c) Demo of first aid practice. d) Demo of artificial respiration and practice. e) Demo of electrical safety precautions. **Basic concepts of Electricity –** a)Identify specification of types of fuses. Identification and specification of type of switches. b) Identification of meter types and measuring range. c) Measure voltage and current using Multi-meter (analog-digital). d) Measure DC and AC power using V-I method and using power meter.	a) Punctuality and Discipline expected of trainees. Course duration, methodology and structure of the training program. b) About the institute and infrastructure. c) Safety in moving and shifting heavy and delicate equipments. d) First aid. e) Artificial respiration. f) Electrical safety. g) Concept of current and voltage. AC, DC Supply indicating lamps. Different types of Fuses and their applications. Different types of connectors used in electrical and electronic applications. Different types of switches used in electrical and electronic applications. h) Measuring instruments, MC, MI type, Ammeter, Voltmeter, Multimeter for measuring voltage and current. Construction, characteristics/ features and specification. Digital Multimeter i) Meaning of resistance, continuity and continuity testers. Multimeter for checking continuity. j) Concept of Power and measurement using V&I meter and Power meter.
2	***Resistors, Inductance, Capacitance and Soldering & De-soldering.*** a) Identify different types of resistors from physical appearance. b) Identify resistor value and tolerance using colour code. c) Measuring resistance using Multi meter.	a) Classification, characteristics and application of different types of resistors.- carbon film, metal film, wire wound, cermets and surface mounted. b) Colour coding of resistors. Calculating Imeasuring resistance value and its tolerance value. Wattage of resistors, specific resistance and their importance. c) Resistors in series and parallel. d) Soft soldering and precautions

	d) Soldering and disordering techniques, practice using hook-up wires. Soldering resistors on Tag board. e) Verification of Ohms Law and Kirchhoff's Laws. f)Soldering resistors on PCB. g)De-soldering practice. h) Experiment using P.T.C and NTC resistors. i) Experiment to check VDR's. j) Experiment to check LDR's. k) Test Pots, Presets. l) Identification of different types of inductors and its specifications. m) Measure inductance using LCR meter. Calculate inductive reactance at different input signal frequencies. n) Demo on self and mutual induction. o) Check step down transformers. p) Rewind a transformer to given specification using winging machine. q) Finding losses and efficiency of given transformers. r) Identifying and testing high frequency transformers used in electronic circuits. s) Identify of different types of capacitors from colour code and typographic code. t) Test working condition of capacitor. Measure capacitance using RLC meter. u) Measure capacitive reactance at different frequencies. v) Measure capacitance and capacitive reactance of, capacitors in series and capacitors in parallel. w) Find the resonance frequency of a given Series and parallel resonance circuit.	to be taken for making a good solder joint. Types of solder and need of soldering paste. e) Ohms law and Kirchooff's Laws. f) Printed circuit boards and its application. g) De-soldering tools. h) Temperature dependent resistors and their applications.(PTC and NTC) . i) Voltage dependent resistors (VDR). j) Photoelectric effect, Light Dependent resistors. k) Variable resistors, pots, presets, types and application. Log and Linear resistors. l) Definition of inductance. Properties. Types of inductors and their application. m) Inductive reactance, measuring inductance and inductive reactance. Meaning of lead, lag. Effect of inductor on power factor. Frequency dependence of inductive reactance. n) Self and Mutual inductance. Coefficient of coupling. o) Transformers. Turns ratio. Transformer winding. Winding machines. p) Transformer losses and efficiency. q) Uses, losses, efficiency type of cores and uses for LF, HF, VHF transformer. r) Transformers used in high frequency applications. s) Working principle of capacitors. Electrostatic action, dielectric constant. Unit of capacitance and capacitive reactance. Types of Capacitors-electrolytic, ceramic, polyester, tantalum, mica, surface mounted. Colour coding, and tolerance. t) Measuring capacitance and capacitive reactance. u) Behavior of capacitance at different frequencies. v) Capacitors in series and parallel. w) Meaning of Resonance. Application of resonance. Series and parallel resonance circuits

3	**Electronic Components** – a) Identify terminals of different types of diodes. Record its specifications referring to diode data sheet. b) Plot forward and reverse characteristics of diode Testing working condition of diodes. c) Construct and test a half wave and full wave diode rectifiers. d) Construct and test a Bridge rectifier with and without filter e) Construct a bridge rectifier with capacitance input filter. f) Draw Zener diode characteristics, Simple voltage regulator using zener diode. g) Identify types transistors based on their physical appearance. Identify the leads of the given assorted types of transistors. h) Quick test given transistors using Multimeter. Identify opens, shorted junctions . i) Wire and find the gain of amplifiers in - CB, CE, CC configurations. j) Practice on identifying and using the controls on a regulated power supply. k) Assemble and test a series regulated power supply. l) Assemble and test a shunt regulated power supply. m) Assemble and test a fixed voltage regulator using 3pin IC. n) Assemble and test a variable voltage regulator using IC. o) Assemble a simple inverter and converter for use with emergency lamp. p) Identify the parts and controls of a UPS. Practice switch-on and switch-off procedures.	a) Semiconductor, intrinsic and extrinsic semi conductors, P and N type semiconductor. Development of P.N. junction barrier potential. Effect of temperature. Breakdown voltage. b) Different types of Diodes. Diode terminals. Diode specifications using data book. c) Forward and reverse characteristics of diode. Testing diodes using Multimeter. d) Half wave and Full wave rectifiers using diodes. Transformer requirements. Calculating output DC, ripple factor. e) Bridge rectifier. Calculating output DC, ripple factor. f) Filters for rectifiers. Calculating output DC, ripple factor. g) Zener diode-Its characteristics and application for voltage regulation. Calculating the series resistor for required current rating. h) Specifications of a regulated power supply and testing a power supply for its specifications. i) Working principle of PNP, Bipolar transistors. Types of transistors and applications. Leads of transistors and their identification. j) Forward and reverse bias of transistor Junction. General values of junction resistances. Quick testing a transistor-using Multimeter. k) Transistor configuration - CB, CE, CC, alpha, beta. Types of Biasing of transistor amplifiers, comparison and applications. Thermal runaway. Steady and Dynamic characteristics. Testing- get frequency response, gain bandwidth product, signal to noise ratio. l) Unregulated, regulated DC Power supply specifications. Application of different types of power supply for specific application types. m) Series regulator using transistor. Short circuit protection. Overload protection. n) Shunt regulators using transistors. o) Fixed Voltage regulators using IC's. p) Variable voltage regulators using IC's.

		q) Mains voltage stabilizers. r) Inverters and converters. s) Un-interrupted power supply, types and applications.
4	***DIGITAL ELECTRONICS*** a)Identify the specifications of given digital IC's referring to data books. b) Verify the truth table of two input OR, NOR, AND, NAND, NOT gates. c) Verify of truth table of multiple input logic gates. d) Verify the truth table of XOR and XNOR Gates. e) Realization of different gate type using NAND gates. f) verification of Boolean laws. g) Realization of half adder & full adder using NAND gates. Realization half subtractor and full subtractor using NAND gates. h) Verification of truth table of 7483- 4bit adder. i) Verifying encoder/ decoder/ multiplexer/ demultplexer IC truth tables. j) Realization and verification of truth table of RS, JK and MS- JK flip-flop. k) Realization and verification of D- flip flop. l) Realization and verficiation of up & down (sync/async) counter. m) Verification of A/D & D/A converter. n) Realization of shift registers using FF. o) Verification of Right-shift, Left- shift registers. p) Verification of Serial-in-parallel out and parallel in serial out of data.	a) Number systems and conversions. Classification of digital IC's. Use of data book for identification of digital IC's. b) Basic LOGIC GATES and truth table. Boolean algebra. c) Logic families, logic levels, propagation delay. Multiple input gates. d) XOR, XNOR gates and application. e) Simplification of Boolean equations. f) Combinational logic circuits. g) Half adder, full adder, parallel binary adder, half subtractor, full subtractor. h) Commercially available adders/subtractors. i) Comparator, decoders, encoders, multiplexer, demultiplexer. j) Parity generators/checkers. RS Flip - Flop, JK flip-flop, Master- Slave flip-flops. k) Types of triggering and applications. D flip-flops. l) Counters, ripple, synchronous, up-down, scale-n counters. m) Principles of A/D & D/A converter. Commercially available A/D & D/A converters. Applications. n) Shift registers. Types, applications. o) Commercially available shift registers and applications. p) Conversion of serial data into parallel and vice-versa.

5	***Other Mechanical, Electrical & Electronics Accessories.*** Working with Gears, Belts, Stepper Motor, Drive. Identification and Testing of Sensors. Working with Relays. Identification of different advanced Intel microprocessor chips. Identification of different advanced microprocessor chips other than from Intel. *DeskTop :* *PC Repair Safety:* • *Important Safety Basics* • *Identification, specification and application of basic hand tools.* • *How to handle components to ensure their longevity* • *What one shouldn't wear while working inside a computer* • *The danger of static electricity* • *How to protect a PC from lightning strikes and power outages*	Basics of gears, Belts, Stepper Motor, Drive. Sensors, its types and working principles. Relays, types and its working principles. Introduction to Microprocessor, Pentium processor architecture basics. Timing Circuits, Electronic Display (7 segment, LED, LCD, Plasma, LED matrix. *a) Introduction to computers, classification, generations, applications. Basic blocks of a digital computer.* *b) Hand Tools Basics and Specifications.* a) Types of cabinets, relation with mother board form factor. Precautions to be taken while opening and closing PC cabinet. b) Main devices, components, cards, boards inside a PC(to card or device level only). c) Types and specifications of the cables and connectors used for interconnecting the devices, boards, cards, components inside a PC. d) Precautions to be taken while removing and/or re-connecting cables inside a PC.
6	*Hardware Identification* • *Identify the front and rear panel controls and ports on a PC* • *Cases* • *Cooling* • *Power Supplies* • *Power Supply Connections* • *Motherboard Connections* • *Motherboard Components* • *CPU (Processor)* • *RAM (Memory)* • *Hard Drive Connections* • *Mechanical vs. Solid State Drives* • *ROM Drives* • *Video Cards* • *Sound Cards*	*(a) Types of I/O devices and ports on a standard PC for connecting I/O devices.* *b) Function of keyboard, brief principle, types, interfaces, connectors, cable.* *c) Function of Mouse, brief principle, types, interfaces, connectors, cable.* *d) Function of monitor, brief principle, resolution, size, types, interfaces, connectors, cable.* *e) Function of Speakers and Mic, brief principle, types, interfaces, connectors, cable.* *f) Function of serial port, parallel port, brief principle of communication through these ports, types of devices that can be connected, interface standards, connectors, cable.* *g) Precaution to be taken while connecting/removing connectors from PC ports. Method of ensuring firm connection.*
7-8	**Hardware** Remove-Test-Replace/ Install	*Types of Processors and their specifications (Intel: Celeron, P4 family, Xeon, and AMD).* a) Memory devices, types,

	• Removing RAM • Installing RAM • Removing a ROM Drive • Installing a ROM Drive • Removing a Hard Drive • Installing a Hard Drive • Defects related to SMPS, its cable, connector and servicing procedure. • Removing a Power Supply • Installing a Power Supply • Removing a Video Card • Installing a Video Card • Install Expansion Cards • Removing Fans • Installing Fans • Removing the Motherboard • Installing the Motherboard • Removing the Processor • Installing the Processor • Installing a CPU Cooler • Troubleshooting • Checking the Power Switch • Removing the CMOS Battery • Seating Expansion Cards	principle of storing. Data organization 4 bit, 8 bit, word. b) Semiconductor memories, RAM, ROM, PROM, EMPROM, EEPROM, Static and dynamic. c) Example of memory chips, pin diagram, pin function of b) Concept of track, sector, cylinder. FD Drive components- read write head, head actuator, spindle motor, sensors, PCB. c) Precaution and care to be taken while dismantling Drives. d) Drive bay, sizes, types of drives that can be fitted. Precautions to be taken while removing drive bay from PC. f) HDD, advantages, Principle of working of Hard disk drive, cylinder and clusture, types, capacity, popular brands, standards, interface, jumper setting. Drive components- hard disk platens, and recording media, ,air filter, read write head, head actuator, spindle motor, circuit board, sensor, features like head parking, head positioning, reliability, performances, shock mounting capacity. HDD interface IDE, SCSI-I/2/3 comparative study. Latest trends in interface technology in PC and server HDD interface. g) Precautions to be taken while fitting drives into bays and bay inside PC cabinet. h) CMOS setting.(restrict to drive settings only). i) Meaning and need for using Scan disk and defrag. h) Basic blocks of SMPS, description of sample circuit.

9	***Windows Installation*** A walkthrough of installing Windows 7 / 8 A walkthrough of installing Windows XP Imaging: create a Windows system image How to Backup/Restore your Windows partition with the bootable image disk Duplicating a partition (creating a multiboot system) A multiboot system: the Windows bootmanager vs. an alternative bootmanager Setting up a multiboot/dualboot system Dual Boot Ubuntu and Windows Windows XP registry tweaks ***Hardware Troubleshooting*** • The danger in not diagnosing problems first • Learn how to test your RAM • Check your hard drive for errors ***PC Cleaning*** • The best cleaning supplies to use • How to increase airflow and increase your computer's lifespan • How to clean your computer	Types of software. System software-OS, Compiler. Application software-like MS office. Functions of an operating system. Disk operating system. a) Concept of GUI, Modes of starting on different occasions. b) Desktop, Icon, selecting, choosing, drag and drop. c) My computer, network neighbourhood / network places. d) Recycle bin, briefcase, task bar, start menu, tool bar, and menus. e)Windows Explorer. f) Properties of files and folders. g) Executing application programs. h) Properties of connected devices. i) Applications under windows accessories. j) Windows Help. k) Finding files, folders, computers. l) Control panel. Installed devices and properties. Utilities for recovering data from defective/bad hard disks. m) Introduction to removable storage devices, Bulk data storage devices-magnetic,optical,magneto optical drives, WORM drives. n) CD ROM drives- Technology, Types of CD drives, working principle application. o) Minor repairs and maintenance of CD ROM drives. p) Technology, working principle, capacity, media of DVD ROM drive . q) Important parts and functions of DVD ROM drive. r) Minor repair works on a DVD ROM drive. s) Technology, working principle, capacity, media of CD WRITER and use different modes of writing on a CD. Using of utility for CD writing. t) Minor repair works on a CD WRITER. u) Latest trends in backup devices/media.
10	***Hard Drives*** • Partitioning hard disk (primary and extended partitions) • Hard Drive Failures	• What's Inside a Hard Drive? • How Hard Disks Work • Inside: Hard Drive Motherboard • Desktop Hard Drive Buyer's Guide • What is RAID? Using Multiple Hard

	• How To Troubleshoot a Noisy Hard Drive • How to Format a Hard Drive • How to Completely Erase a Hard Disk Drive • How to check to see if your hard drive has bad sectors • Fix the master boot record • Installation and configuration of storage devices. Integration of PATA and SATA drivers. • Recover emails, files, and data from a crashed hard drive or computer ***<u>Virus Removal</u>*** • How to run a full system scan • How to fix your browser from redirecting to other websites (browser hijack) • Using a modern anti-virus utility • When utilities don't fix everything, how to manually remove a virus • 2 specific things to disable when trying to get rid of a nasty virus • 2 special utilities that work wonders	Drives for Performance and Reliability • Partitioning hard disk (primary and extended partitions) • Bad Sectors in Hard disk, Master Boot Record, in-place installation, Registry fixing, performance level check, Shortcut fixing, Fixing Startup process, log, etc. • Learn how to prevent your PC from getting malware • All the different types of malware and how they attack your PC The difference between Anti-Virus and Anti-Spyware software

11	***Windows Update & Device Driver*** • How to find your system version in Windows, Linux • Installing a service pack • How to perform a Windows Update ***Software Installation*** • Installing a software program in windows • How to run a file from MS-DOS • Extracting or uncompressing a compressed file • How to compress or make files into one file • Extracting files from the Windows cabinets • Uninstalling Windows software • Unable to remove a program from Windows Add/Remove programs ***Installing Hardware Drivers*** • How To Update Drivers in Windows • How To Roll Back a Driver in Windows • Familiarization with Device manager. • Interfacing with cellphone, tablet PC, synchronization of contacts. ***Windows Utilities*** • How to Repair Corrupted Files Problems • How to check for corrupted files • Restore your machine back to normal • Hard disk is filling up, what should one do? • Where's the disk space ? • Top 15 Ways to Speed Up the Computer • How to Automatically Clean and Organize the Desktop, Downloads, and Other Folders • 5 Simple Rules To Keep Files Organized • 5 Reasons - Computer Is Running Slow	Version of a software, Service pack, Updating of OS, Different configurations of Computer system and its peripherals, Compatible with different hardware/software. Software Installation – Pre-installation - Prerequisites, Install procedure, Rollback or Un-install procedure, Tests. Post-installation – Backup procedure & specifications, Restore procedure, Periodical view check. Awareness of legal aspects of using computers such as copyright, patent etc. • What is a Driver? • What hardware device drivers should be updated • What is a Device manager? • Computer Maintenance Tips and Tricks to Backup, Scan and Clean Power on self test, Peripheral diagnostics, general purpose diagnostics, Operating system diagnostics. Hardware boot process, Windows boot process.
12	Project Work	
13	Examination	

F. GOVT LINKS:

1. https://**mahakaushalya**.com/

2. https://www.**mahakaushalya**.com/Site/Training

3.dget.nic.in/upload/uploadfiles/files/MES-CHA_2014.pdf

4.http://www.mssds.in/

5.http://www.sdi.gov.in/

G. PHOTOS :

N·S·D·C
National
Skill Development
Corporation

3.SOFT AND ENTREPRENEURSHIP SKIL

A.DETAILS:

Sr. No.	Topics	Allotted Time in Hours
01	Development Competency / Proficiency in English /Vernacular	15
02.	Effective Communication	10
03.	Self &Time Management	10
04.	Motivation Techniques	05
05.	Interpersonal Skill Development	05
06.	Computer Literacy	20
07.	Life Skills	05
08.	Entrepreneurship	20
09.	Occupational safety , Health and Environment Education	10
	TOTAL	100

B. PHOTOS:

4.SAFETY & GENERAL AWARENESS IN CHEMICAL INDUSTRY

A.DETAILS:

Name of Sector	Chemical
Name of Module	Safety & General Awareness in Chemical Industry
MES Code	CH-SG-I
Duration of Course	90 hours
Entry Qualification of Trainee	Qualification – VIIIth Standard.

B.SYLLABUS:

Practical Competencies	Underpinning Knowledge (Theory)
• To study the importance of personal protective equipments such as Gumboot, Helmet, Gloves, Aprons, Ear plugs, nose mask etc. in chemical plant • To study the different types of fire extinguisher. • Selection of fire extinguisher to put off different types of fires in chemical plant. • To study fire detection system, alarms, smoke detector, heat detector and flame detector. • Identification of hazardous and toxic chemicals. • Study of materials/chemicals safety data sheet of handling of various chemicals. • Study of flow sheets of	• Role of process attendant in the chemical plant. • Importance of safety and general precautions to be observed in the chemical plant. • Personal safety and use of personal protective equipments. • Good housekeeping. • Fire prevention and fire fighting equipments. • Cause and prevention of accidents, first aid. • Properties of hazardous and toxic chemicals and safe handling procedures, materials safety data sheets (MSDs), material handling. • Basic knowledge of filling log sheet of

manufacturing of chemicals by using audio-visual aids for familiarization with pumps, valves, pipes, heat exchanger, etc. and plant utilities. • General Awareness about length, width, height, area, volume, pressure, flow, temperature, level, pH density, viscosity, current, specific gravity, Elements, formula of chemicals, atom, molecule, compounds, mixture, types of reactions & metals, non metals, metalloids, alloys	workplace. • Classification, sources and harmful effects of air, water and noise pollution. • General introduction of Chemical Plant, raw materials, intermediates and final products • Introduction of different pumps, pipes, valves, vessels, heat exchanges, dryers, evaporator, filtration unit etc. in chemical plant. • Familiarization with plant utilities and service lines such as – steam, water, vacuum, compressed air, fuel line, refrigeration and air conditioning. • To assess quality of raw material and product by color, odor, pH, density and viscosity

C. PHOTO: