Syllabus for the Trade of "COMPUTER OPERATOR AND PROGRAMMING ASSISTANT" Under Craftsmen training Scheme.

First Semester: Code no. COPA – 01

Duration:6 months (26 weeks)

Week No.	Trade Practical	Trade Theory
1-2	**Computer components and Windows Operating System** • Disassembling,Identification of components and Reassembling a Desktop computer. • Familiarization with Windows O.S desktop, using icons,buttons and customizing the desktop. • Managing files and folders, using removable drives. • Viewing system properties and control panel details.Viewing and setting environmental variables. • Working with MS Paint.	**Introduction to Computers and Windows Operating System** • History,Generations, Types, Advantages and Applications of Computers. • Concepts of Hardware and Software. Computer Hardware basics. • Introduction to various processors. • Introduction to the functions of an Operating System, Popular Operating Systems in Use. • Main features of Windows O.S • Various Input/ Output devices in use and their features. • Using Scanner, Printer and Webcam.
3	**Computer Hardware basics and Software Installation** • Viewing the BIOS and changing the Boot order. • Identify and rectify common hardware and software issues. • Formatting the hard disk and loading O.S and necessary application software. • Installation of DVD, using different types of hard disks. • Bluetooth Configuration, DVD write techniques.	**Computer Hardware basics and Software Installation** • Introduction to the booting process, BIOS settings and their modification. • Introduction to various types of memories and their features. • Basic Hardware and software issues and their solutions. • Formatting and Loading O.S and Application software and Antivirus.

4-5	**Familiarization with DOS CLI & Linux Operating Systems.** ● Using basic DOS commands for directory listing, file and folder management etc. ● Using Basic Linux commands for directory listing, file and folder management, password etc. ● Using the Linux graphical user interface for file and folder management, exploring the system etc.	**Introduction to DOS Command Line Interface & Linux Operating System.** ● Introduction to basic DOS Internal and External Commands. ● Introduction to Open Source Software. ● Introduction to Linux Operating System features, structure, files and processes. ● Introduction to various Linux Shells. ● Basic Linux commands.
6-8	**Using Word Processing Software** ● Familiarization with the Word window components. ● Creating, saving and editingdocuments using Word. ● Inserting and formatting tables and other objects. ● Using templates,autocorrect tools, macrosand the mail merge tool. ● Working with Page layout settings and printing documents. ● Typing practice using open source typing tutor tools. ● Practice of using shortcut keys.	**Word Processing** ● Introduction to the various applications in office. ● Introduction to Word features, Office button, toolbars. ● Creating, saving and formatting and printing documentsusing Word. ● Working with inserting objects, macro, mail merge, templates and other tools in Word. ● Page setup and Printing Documents using word.
9-11	**Using Spread Sheet Application** ● Creating, Saving and Formatting Excel Spreadsheets. ● Using Absolute and Relative referencing, linking sheets, Conditional formatting etc. ● Using Excel functions of all major categories. ● Using various data types in Excel, Sorting, filtering and validating data.	**Spread Sheet Application** ● Introduction to Excel features and Data Types. ● Cell referencing. Use of functions of various categories, linking Sheets. ● Introduction to various functions in all categories of Excel. ● Concepts of Sorting, Filtering and Validating Data. ● Analyzing data using charts, data tables, pivot tables, goal

	• Creating and formatting charts. • Importing &Exporting Excel Data. • Performing data analysis using "what if" tools. • Modifying Excel Page setup and printing. • Simple projects using Excel & Word.	seekingand scenarios. • Introduction to Reporting.
12	**Image editing, Creating presentations & Using Open Office** • Use of windows and open source image editing software like Open Office Draw, GIMP, Irfan View or a similar tool. • Creating Slide shows, Inserting objects. • Animating Slide transitions and Objects. • Creating a simple presentation project using Open Office. • Working with Open Office for word processing and spreadsheet application.	**Image editing, Creating presentations & Using Open Office** • Introduction to Open Office. • Introduction to the properties and editing of images. • Introduction to Power Point and its advantages. • Creating Slide Shows. • Fine tuning the presentation and good presentation techniques.
13-15	**Database Management** • Creating database and designing a simple tables in Access. • Enforcing Integrity Constraints and modifying the properties of tables and fields. • Creating Relationships and joining tables. • Creating Forms. • Creating simple select queries with various criteria and calculations. • Creating Simple update, append, make table, delete and crosstab	**Database Management Systems** • Concepts of Data, Information and Databases. Overview of popular databases, RDBMS, OODB and NOSQL. • Rules for designing good tables. Integrity rules and constraints in a table. • Relationships in tables. • Introduction to various types of Queries and their uses. • Designing Access Reports and Forms. • Introduction to macros, designer objects controls, their properties

	queries. • Modifying form design with controls, macros and events. • Importing and exporting data to and from Access. • Compressing and Encrypting databases.	and behavior.
16-17	**Configuring and Using Networks** • Viewing Network connections. • Connecting a computer to a network and sharing of Devices, files and Folders. • Familiarization with various Network devices, Connectors and Cables. • IP Addressing and Subnetfor IPV4 / IPV6,Masking, pinging to test networks. • Configuring Hub and Switch. • Setting up and configuring LAN in a Computer Lab as peer to peer network. • Setting up a proxy server/ DHCP Server with firewall. • Setting up video conferencing. • Using various tools for computer maintenance, Network security.	**Networking Concepts** • Introduction to Computer Networks, Necessity and Advantages. • Client Server and peer to Peer networking concepts. • Concept of Proxy Server and proxy firewall server. • Network topologies. Introduction to LAN, WAN and MAN. • Network components, viz. Modem, Hub, Switch, Router, Bridge, Gateway etc. • Network Cables,Wireless networks and Blue Tooth technology. • Concept of ISO - OSI 7 Layer Model. • Overview of various Network protocols Viz. TCP/IP, FTP, Telnet etc. • Logical and Physical Addresses, Classes of Networks. • Network Security &firewall concepts. • Concept of DHCP Server.
18	**Internet Concepts** • Browsing the Internet for information. • Creating and using e – mail for communication. • Communication using text, video chatting and social networking sites. • Identifying various threats to the system connected to the net.	**Internet Concepts** • Introduction to WWW, Concept of Internet, Web Browsers, internet servers and search engines. • Concepts of Domain naming Systems and E mail communication. • Introduction to video chatting

	• Protecting the computer against various internet threats. • Configure Outlook, mail service in mobile phones. Using tools like Skype, Google+ etc.	tools, VOIP and Social Networking concepts. • Concept of Cloud storage and Open Web Server. • Introduction to Internet Security, Threats and attacks, Malicious Software types, Internet security products and their advantages.
19-21	**Designing Static Web Pages** • Designing simple web pages with text, pictures, tables,lists, hyperlinks, frames, marquees etc. using HTML tags. • Designing Web Pages with Forms and Form Controls using HTML tags. • Creating Web Pages using CSS. • Using WYSIWYG web design tools to design and edit web pages with various styles.	**Web Design Concepts** • Concepts of Static and Dynamic Web pages. • Introduction to HTML and various tags in HTML. • Creating Forms with controls using HTML. • Concepts of CSS and applying CSS to HTML • Introduction to open source CMS viz,. Joomla, Wordpress etc. and Web authoring tools viz. Kompozer,FrontPageetc.
22-23	Project Work	
24-25	Examinations	
26	Admissions for the next session	

SecondSemester : Code no. COPA – 02

Duration:6 months (26 weeks)

Week No.	Trade Practical	Trade Theory
1-7	**Java Script** • Familiarization with JavaScript elements. • Embedding JavaScript in HTML to display information in web pages. Documentation and Formatting. • Using JavaScript Variables, Data types, Constantsand Operators. • Working with Arrays, Control statements and Loops in JavaScript. • Writing functions in JavaScript. • Working with String, Math and Date functions in JavaScript. • Switch, Loops, Breaks and Errors. • Using Java Script Objects. • Working with JavaScript Libraries. • Using simple Open source web server (like XAMPP) and FTP software (For ex. Filezilla). • A simple project using JavaScript.	**Java Script** • Algorithms and flowcharts. • Introduction to Web Servers and their features. • Introduction to Programming and Scripting Languages. • Introduction to JavaScript and its application for the web. • JavaScript Basics – Data types, Variables, Constants.Conversion between data types. • The Arithmetic,Comparison, Logical and String Operators in JavaScript. Operator precedence. • Arrays in JavaScript – concepts, types and usage. • Program Control Statements and loops in JavaScript. • Introduction to Functions in JavaScript. • Built in JavaScript functions overview. • The String data type in JavaScript. Introduction to String, Math and Date Functions. • Concepts of Pop Up boxes in JavaScript. • Introduction to the Document Object Model.
8– 15	**Programming with VBA** • Familiarization with the VBA Editor. • Writing simple programs involving VBA Data types,Variables, Operators andConstants. • Working with string variables in	**Introduction to VBA, Features and Applications.** • Introduction to VBA features and applications. • VBA Data types,Variables and Constants. • Operators in VBA and operator

	VBA. • Creating and Manipulating Arrays in VBA. • Writing programs involving Mathematical,Conversion, Date andString Functions in VBA. • Working with conditional statements like If. Elseif, Select … Case statements in VBA. • Writing programs in involving Loops. • Creating Message boxes and Input boxes in VBA. • Creating Functions and Procedures. Passing Parameters and Using Returned Data. • Using VBA built in functions in programs**.** • Creating and editing macros. • Writing code to work with Excel VBA forms and form controls like buttons, Checkboxes, Labels, ComboBox, GroupBox, ListBox, Option Button, Scroll Bar and Spin button. Modification of object properties. • Using ActiveX controls. • Programming with methods and events. • Debugging, Stepping Through Code, Breakpoints, Finding and Fixing Errors. • A simple project involving MS excel and VBA.	precedence. • Mathematical Expressions in VBA. • Introduction to Strings in VBA. • Introduction to Arrays in VBA. • Conditional processing in VBA, using the IF, Elseif, Select… Case Statements. • Loops in VBA Introduction to VBA. • VBA message boxes and input boxes. • Introduction to Creating functions and Procedures in VBA. • Using the built in functions. • Creating and editing macros. • Introduction to Object Oriented Programming Concepts. Concepts of Classes, Objects, Properties and Methods. • Events and Event driven programming concepts. • The user forms and control in Excel VBA. • Properties,events and methods associated with the Button, Check Box, Label, ComboBox, Group Box, Option Button, List Box, Scroll Bar and Spin button controls. • Overview of ActiveX Data objects. • Debugging Techniques.
16-19	**Using Accounting Software** • Basic accounting practice. • Familiarization with the Tally interface. • Company creation,Account Creation, Voucher Entry in Tally. • Report Generation (Creating	**Smart Accounting** • Basics of Accounting, Golden Rules of Accounting, Voucher Entry, Ledger Posting, Final Accounts Preparation. • Cash Book. Ratio Analysis, Depreciation, Stock Management. • Analysis of VAT,Cash Flow, Fund

	statements like Invoice, Bill, Profit & Loss account etc.). • Performing Cost Centre & Cost Category management. • Managing Budgeting Systems. • Scenario management and Variance Analysis. • Using Tally for Costing, Ratio Analysis,Cash Flow, Funds Flow Statements. • Analyzing and Managing Inventory. • Performing Point of Sales and Taxation. Performing Systems Administration and using other Utilities, User creation, Backup &Restore of Company. • Using the Multilingual Functionality	FlowAccounting. • Introduction to Tally, features and Advantages. • Implementing accounts in Tally. • Double entry system of bookkeeping. • Budgeting Systems, Scenario management and Variance Analysis. • Costing Systems, Concepts of Ratios, Analysis of financial statements,Inventory Basics, POS Invoicing, TDS, TCS, FBT, VAT & Service Tax Processing in Tally. • Tally Interface in Different Languages.
20	**E Commerce** • Familiarization with latest E commerce websites viz. E bay, Amazon, FlipCart, OLX, Quikr etc. and comparative study of the main features of these sites. • Using E Commerce Simulator Software for Marketplace Business Simulation. • Identifying and solving security issues inE- commerce and payment operations.	**E Commerce** • Definition of E commerce, Types, scope and benefits of E commerce. • Difference between E commerce and traditional commerce. • Capabilities requirements and Technology issues for E commerce. • Types of E commerce web sites. • Building business on the net. • Concepts of on line Catalogues, Shopping carts, Checkout pages. • Payment and Order Processing, Authorization, Chargeback and other payment methods. • Security issues and payment gateways.
21	**Typing practice** • Typing Practice in Regional Language	**Cyber Security:** • Overview of Information Security, Security threats, information Security

		vulnerability and Risk management • Introduction to Directory Services, Access Control, Software Development Security, Privacy protection, Audit and Security. • Introduction to I.T Act and penalties for cybercrimes.
22-23	Project Work	
24-25	Examinations	
26	Admissions for CITS	

Note: Syllabus for the subject of Employability Skills is common for all the trades