

Detailed Syllabus

For

IT Skills

To

Improve the employability of the rural youth belonging
to SC/ST & Minority communities



डी ओ ई ए सी सी

DOEACC Society

**An Autonomous Scientific Society of Department of Information Technology
Ministry of Communications and Information Technology
New Delhi**

Index

Sl No	Subject Name	Page Number
1	Certificate Course in Multimedia	
2	Certificate Course in Web page design	
3	Certificate Course in Networking with Windows 2000 and Red Hat Linux and Administration	
4	Certificate Course in PC Hardware & Networking	
5	Certificate Course in Linux Programming	
6	Certificate Course in Computer Applications	
7	Certificate Course in Financial Accounting	
8	Certification in Programming languages in C/C++	
9	Certification in Programming languages in JAVA	
10	Certification in Programming languages in .NET	

1 Certificate Course in Multimedia

**Total (Theory & Practical) =
72**

1. Introduction to Multimedia

08Hrs.

What is multimedia, Components of multimedia, Web and Internet multimedia applications, Transition from conventional media to digital media.

2. Image Editing Basics

10 Hrs.

Colour Science , Colour, Colour Models, Colour palettes, Dithering, 2D Graphics, Image Compression and File Formats :GIF, JPEG, JPEG 2000, PNG, TIFF, EXIF, PS, PDF, Basic Image Processing [Can Use Photoshop], Use of image editing software (Image Editing - Basics), White balance correction, Dynamic range correction, Gamma correction, Photo Retouching.

3. Creating Presentation

06 Hrs.

Introduction to PowerPoint, Opening a PowerPoint presentation, Saving a presentation, Creating presentation using templates, Creating blank presentation, Inserting and deleting slides, Preparation of slides, Providing aesthetics, Presentation of slide.

4. Creating 2D Animation (Raster)

08 Hrs.

Computer Animation using Flash, Cell animation using Photoshop.

5. Creating 2D Animation (Vector)

08 Hrs.

Cell Animation, Computer Animation, Tweening, Morphing, Introduction to Action Script 2.0,

6. Basics of Web Authoring

08 Hrs.

HTML (Basic): Create an index page from HTML, Developing a Web page, Working with Text and Graphics, Working with Links, Working with Tables, Collecting Data with Forms, Adding Multimedia Elements,

7. Sound and Image Embedding

06 Hrs

Embedding Sound and Image in Adobe Premier, Introduction to video editing tools, Importing and capturing projects, working with clips, Editing techniques, Transitions, Effects.

8. Sound Editing

08 Hrs

Introduction to Sound editing software, Working with existing sound files, Editing sound files, adding effect, Recording sound clips.

9. Web Authoring

10 Hrs

2. Certificate Course in Web Design

Total (Theory + Practical) = 72 Hrs

Sections	Units	Theory (Hr)	Prac. (Hr)
1. Getting started with Dreamweaver MX 2004	Introduction of Dreamweaver	2	2
	A brief overview of web technology		
	Installing Dreamweaver MX 2004		
	Installing a web server		
	Exploring Dreamweaver MX 2004		
	The Dreamweaver workspace		
2. Making website, Site structure	Creating a website	1	2
	Creating a webpage	1	2
	Uploading a webpage	1	1
3. Navigation and Content	Importing text, adding characters, inserting Graphics	1	1
	How to add rollover effects?		
	Inserting and formatting tables		
	Inserting a flash movie	1	1
	Creating small pop-up windows		
	Jump menu in dreamweaver		
	Creating links and adding to the text		
Manually creating links			
4. Style sheets and Templates, Layers	Style Sheets	2	2
	Creating style sheets		
	Creating CSS classes		
	Templates	1	1
	Libraries		
	Building up layers	1	1
	Controlling layer visibility		
	Attaching a layer to hyperlink		
5. Behaviors and Dynamic effects	Swapping images	1	1
	Using image maps with behaviors	1	1
	How to add pop message using JavaScript	1	1
6. User interaction with ASP and forms	Code-Behind	1	2
	The Global.asax Application File	1	1
	Understanding ASP.NET Classes	1	
	ASP.NET Configuration	2	1

	Code-Behind	1	1
7. Adding logic to your pages	Server Controls	1	3
	HTML Controls	1	
	Custom Cookies	1	
	A Sample Page Applet	1	
8. Keeping track of users	The problem of State	1	1
	View state	1	1
	Session State	1	1
	A Session State Example		1
9. Securing Web sites	Determining Security Requirements	1	2
	Forms Authentication	1	
	Windows Authentication	1	
10. Getting information from a database, Retrieving and displaying data from database.	Introducing ADO.NET and Data Management	1	4
	The ADO.NET Object Model	1	
	Accessing Data the Easy Way	1	
	The DataList, DataGrid and Repeater	1	
11. Storing information in a database	ADO.NET Example	1	2
	Updating Data	1	

3. Certificate Course in Networking with windows 2000 and RCHE

Total (Theory + Practical)= 72 Hrs

Topic	No of Hours
Installation and Administration of Windows 2003 and Linux The minimum hardware requirements for the installation, the steps involved in installation. Booting process and Basic commands of Windows 2003 / Linux , Hardware and Network Card installation under Windows 2003 / Linux, configuration of NIC card and it's troubleshooting	8 hrs
Introduction To Networking: What is networking? Local area Network (LAN) Metropolitan Area Networks (MAN) and wide Area Networks. Network management, Seven layer OSI model, TCP/IP model and Protocol Suite	3 hrs
Network elements Topologies: Bus, Star, Token Ring, Mesh etc, installation of physical networks, Cable types, NIC, connectors, crimping, Networking Devices: Repeaters, Hubs, Switches and routers	4 hrs
IP Addressing and Subnetting Concept of Network, Sub network, host, Usage of CIDR , Usage of VLSM	6 hrs
Layer 2 Switches Basic Configuration of Switches, VLAN & STP and basic troubleshooting.	4 hrs
Routers Basic Configuration of Routers and RIP protocol and basic troubleshooting. Introduction to EIGRP and OSPF, WAN encapsulation methods and NAT.	6 hrs
Wireless Networking Fundamental of Wireless Networking, Frequency ranges & channels, IEEE-802.11g & b, Wireless hardware- wireless LAN card, Access point, Network architectural- connecting a wireless LAN, Authentication & association, SSID, Setting up of Wireless Network using Access Point	5 hrs

4. Certificate Course in PC Hardware & Networking

Total (Theory + Practical) = 72 Hrs

Chapters	Units	TH (Hrs.)	Prac. (Hrs.)
Chapter 1. Introduction to Network	Introduction to Network	1	
	Types of Network : LAN, MAN, WAN	2	
	Network Topologies	2	
	Ethernet addressing Scheme	1	
	OSI Layer	2	
Chapter 2. Network Devices, Installation and troubleshooting	Workstations, Network Interface Cards, patch	1	
	Switches, HUB/Repeater, Bridge, Router	1	2
	Network Cabling?	2	2
	Wireless LANs Devices and its	1	1
	Broadband and Home networking	1	1
Chapter 3. Network Protocols	Static and Distance Routing	1	
	Vector and Link-State Protocol	1	
	OSPF	1	
	EIGRP	1	
Chapter 4. Introduction to PC components	Introduction to PC Hardware components	1	
	Printer	1	2
	Scanners	1	1
	Memory: Types of RAM	1	1
	Central Processing Unit , Types of Processor	2	1
	Motherboard and its Integrated peripherals	2	2
	Video card ,Game Controller and Joystick,	1	1
	Cooling devices and Computer Connections	1	1
	Storage Devices : Floppy disk, Disk and Storage, DVD , HDD	1	1
	Monitors : CRT, LCD	1	1
	Keyboard Layout and Data Entry	1	1
	Mouse	1	
Chapter 5.	Basic computer Operations	1	
	Difference between Hardware and	1	
Tools & Techniques	Software		
	Types of Software and their Characteristics	1	
	Operating Systems	1	
Chapter 6. Hardware Troubleshooting	Troubleshooting Motherboard		2
	CD and DVD Drives		1
	Video, Display (Monitor)		1
	Hard Disk Drive		1

	Internet Access		1
	Keyboard and Mouse		1
	Power		1
	Performance Tuning		1
	Hardware Installation		1
Chapter 7. Software	Restarting and Turning Off Your Computer		1
	Updating Drivers		1
Troubleshooting	Removing unused program		1
	System Restore and system recovery		1
	Creating Data Backup and Recovery		1
Chapter 8. Installing Windows and other Software	Installing Windows 2003/XP/Vista/7		1
	Installation of Ms Office 2003/2007		1
	Running various Anti-virus program		1

5. Certificate Course in Linux Programming

Total (Theory + Practical)= 72 Hrs

CHAPTERS	UNITS	TH(HRS)	PRAC(HRS)
Chapter 1. Introduction to linux	History	2 hrs	-----
	Linux Distributions		
	Linux Vs Windows		
Chapter 2. Linux commands	What Is A Command Shell?	1hrs	2 hrs
	What Is Bash?		
	How Is Bash Different From The Dos Command Prompt?		
	Special Characters	1hrs	1 hrs
	Executing Commands		
	Getting Help	1hrs	2 hrs
	Commands For Navigating The Linux File Systems		
	Piping And Re-Direction	1 hrs	
	Other Linux Commands		
Chapter 3. Linux text editor	Plain Text Files Vs. Word Processor Files	1 hrs	1 hrs
	Linux Editor		
Chapter 4. Linux file systems	General Overviews Of Linux File Systems	1hrs	2 hrs
	Linux File System Layout		
	Linux File Attributes	1hrs	
	The Chmod Command	1 hrs	2 hrs
	Id Command		
	Changing User And Group Ownership		
	More About Ls Command	2 hrs	
	Some More Useful Commands		2 hrs
More Commands To View File Contents			

Chapter 5. Linux shell programming	Introduction To Linux Shell	1 hrs	2 hrs
	How To Use Shell	1 hrs	
	Introduction To Shell Programming	1hrs	
	Commands Related With Shell Programming	1 hrs	4 hrs
Chapter 6. MySQL	Introduction	1 hrs	6 hrs
	Database Basic	1 hrs	
	What Is Sql?	1 hrs	
	Working With MySQL	1 hrs	
Chapter 7. Programming with gtk+	Introduction to GTK+	2 hrs	2 hrs
	Events, Signals, and Callbacks	1 hrs	2 hrs
	Packing Box Widgets	1 hrs	2 hrs
	GTK+ WIDGETS	1hrs	3 hrs
	GTKTREE VIEW	1 hrs	2 hrs
Chapter 8. Development tools	The Make Command And Makefiles	1 hrs	2 hrs
	Writing A Manual Page	1 hrs	2 hrs
	Distributing Software	1 hrs	2 hrs
	Rpm Packages	1 hrs	3 hrs
Total		30 hrs	42 hrs

6. Certificate Course in Computer Applications

Total (Theory + Practical) = 72 Hrs

Sections	Units	Theory (Hrs)	Practical (Hrs)
1. Introduction to Computer	What is a computer?	2	-
	Characteristics of computer		
	History of computer		
	Computer generations		
	Types of computers		
2. Computer Organization	Basic computer operations	1	-
	Functional units		
	Physical components of Computer		
3. Memory system in a computer	Introduction	2	-
	Primary Storage		
	Secondary Storage		
4. Input output devices	Input Device	1	-
	Output Devices		
5. language/software	What is software?	2	-
	Software types		
	What is language?		
	Programming Languages		
	Compiler		
	Interpreter		
6. Disk operating system	Disk operating system	1	1
	Computer files in dos		
	Directory structure in dos		
	Directory command		
	Using path to specify the location of files		
	Dir command		
	Changing a directory		
	Making or creating directory		
	Deleting a directory		
	Copying files		
	Use of wildcard characters		
	Renaming file		
	Deleting files		
	Printing a file		
	7. Microsoft windows	Windows features	1
Start up, shut down, and sleep,			
Opening and closing an application			
Manipulating windows			
Saving			

	Printing		
	Deleting file		
	Help option		
	The start menu	-	2
	Computer freezes		
	Internet access		
	Common applications		
	Windows keyboard shortcuts		
	The right click menu		
	Windows explorer		
8. Microsoft Word		2	8
9. Microsoft Excel		4	10
10. PageMaker	Getting started with Page Maker	2	5
	Page Maker Program Window		
	Working with text		
	Changing the view of the Page		
	Working with text blocks		
	Making changes in the existing publication		
	The Story Editor		
	Finding a Word within a Publication		
	Searching by format		
	Replacing the Text		
	Checking spelling in the publication	2	5
	Changing the Font		
	Using Bold, Italicizing and Underline features		
	Bullets and Numbering		
	Applying Drop cap		
	Page orientation and Numbering		
	Page size, Dimension and Margins		
	Table of Contents		
11. HTML	What is HTML?	1	1
	Get Started		
	HTML Basics		
	HTML Elements		
	HTML Attributes		
	HTML Headings		
	HTML Paragraphs		
	HTML Formatting	1	2
	HTML Fonts		
	HTML Styles		
	HTML Links		
	HTML Images		
	HTML Tables	1	2

	HTML Lists		
	HTML Forms		
	HTML Frames		
	DHTML		
12. Communication & Computer Networking	Data communication	2	-
	Basic Elements of a Communication System		
	Communication protocols		
	Data transmission modes		-
	Asynchronous and Synchronous Transmission		
	Computer network		
	Network Classification		
	Basic hardware components		
	Computer networks types	2	-
	Network topology		
	Internet		
	Internet protocol Suite		
	Network Address		
	E-mail	1	1
	WWW		
	Intranet		
	Extranet		
Total		72 hrs	

7. Certificate Course in Financial Accounting

Total (Theory + Practical) = 72 Hrs

Contents	Theory Hours	Practical Hours
Basics of Accounting <ul style="list-style-type: none"> • What is Financial Accounting • Objectives of Financial Accounting • Double Entry System & Equation of Accounting • Classification of Accounts • Terms used in Accounting 	1,2	
Principles/Concepts/Conventions of Accounting <ul style="list-style-type: none"> • Accounting Period Concept • Entity Concept • Dual Aspect Concept • Money Measurement Concept • Matching Concept • Cost Concept • Materiality Concept • Objective Evidence Concept 	3	
Recording Procedure in Accounting <ul style="list-style-type: none"> • What is a transaction • Recording of transactions in Book of Primary Entry (JOURNAL) 	4,5	
Recording Procedure in Accounting <ul style="list-style-type: none"> • Posting of transactions into Ledger • Ledger Balancing 	6,7	
Recording Procedure in Accounting <ul style="list-style-type: none"> • Preparation of Trial Balance 	8	
Recording Procedure in Accounting <ul style="list-style-type: none"> • Introduction to Subsidiary Books of Accounting viz. Cash Book, Bank Book, Sales Book, Purchase Book etc. 	9,10	
Preparation of Final Accounts <ul style="list-style-type: none"> • Significance of Final Accounts • Introduction to terms like Revenue & Capital Incomes/Expenses, Direct/Indirect Incomes & Expenses ,Current Assets/Liabilities, Fixed Assets/Liabilities • Introduction to Trading Account/Manufacturing Account • Profit & Loss Account • Balance Sheet 	11,12	
Starting Tally <ul style="list-style-type: none"> • Tally Screen :- Button Bar, Calculator, Work Area, Gateway of Tally Menu 	13	1

<ul style="list-style-type: none"> • Creation of company, Alteration of company 		
Configuration Options available at Gateway of Tally Enabling/Disabling Optional features of Tally	14	2
Account Masters <ul style="list-style-type: none"> • Hierarchy of accounts :- Ledger Accounts & Groups • Reserved Account Groups • Creation of Account Masters 	15	3
Account Masters (Contd.) <ul style="list-style-type: none"> • Creation/Alteration of Groups • Alteration of System Generated Reserved Groups • Deletion of Group/Ledger • Creation/Alteration of Multiple Ledgers/Groups • Copying Masters • Set Credit Limits & Credit Periods 	16	4
Account Vouchers <ul style="list-style-type: none"> • Voucher Screen:- Voucher Header, Voucher Body, Saving Voucher, Printing Voucher online • Payment, Receipt and Contra Vouchers • Use of Voucher Configuration Options (F12) 	17	5-8
Account Vouchers (Contd.) <ul style="list-style-type: none"> • Sales , Purchase Vouchers • Debit Note, Credit Note • Journal Voucher 	18	9-12
<ul style="list-style-type: none"> • Creating new Voucher Types • Creating new Voucher Class 	19	13
Account Reports <ul style="list-style-type: none"> • Account Books :- Cash/Bank Book(s), Sales/Purchase Register, Debit Note/Credit Note Register, Ledgers • Statement of accounts • Trial Balance, Balance Sheet, Profit and Loss Account • Exception Reports • Fund Flow • Ratio Analysis • Interest Calculations 	20	14-15
Inventory Masters <ul style="list-style-type: none"> • Introduction to inventory • Creation of Company for Accounts With Inventory • Features and configuration for inventory 	21	16-17
Inventory Masters <ul style="list-style-type: none"> • Stock group & categories • Godowns • Units of Measurement etc 	22	18
Inventory Transactions <ul style="list-style-type: none"> • Inventory and Accounting vouchers involved in Purchase 	23	19-21

Procedure viz. Purchase Order, Goods Receipt Note, Purchase Invoice, Rejection Outwards and Debit Note		
Inventory Transactions <ul style="list-style-type: none"> • Inventory and Accounting vouchers involved in Sales Procedure viz. Sales Order, Delivery Note, Sales Invoice, Rejection Inwards and Credit Note 	24	22-24
Inventory Transactions <ul style="list-style-type: none"> • Physical Stock Voucher • Stock Journal 	25	25
Inventory Reports <ul style="list-style-type: none"> • Reports pertaining to inventory 	26	26
Advanced Features Of Tally <ul style="list-style-type: none"> • Printing & Housekeeping • Backup & Restore 	27	27
Security Features of Tally <ul style="list-style-type: none"> • Tally Vault • Tally Locker • Security Control 	28	28
Business Management <ul style="list-style-type: none"> • Introduction to Cost Centres, Cost Categories 	29	29
Special Features of Tally <ul style="list-style-type: none"> • Memorandum Vouchers • Reverse Journals • Optional Vouchers • Post Dated Vouchers • Using Scenarios and Budgets 	30	30
<ul style="list-style-type: none"> • Introduction to VAT • Company configuration with VAT enabled • Voucher Entry • VAT reports 	31,32	31,32
<ul style="list-style-type: none"> • Introduction to Service Tax • Company configuration with Service Tax enabled • Voucher Entry • Statutory reports 	33,34	33,34
<ul style="list-style-type: none"> • Introduction to TDS • Company configuration with TDS enabled • Voucher Entry • Statutory reports 	35,36	35,36

8. Certification in Programming languages in C/C++

Total (Theory + Practical) = 72 Hrs

Introduction To C Programming Language			
Chapters	Units	Th (hr)	Prac (hrs)
Chapter 1. Introduction to Programming	Algorithm	1 hrs	-----
	Flowcharts	2 hrs	
	Programming Language	1 hrs	
	Language Translators		
	Linker		
Chapter 2. Introduction to C Programming	Structure of C Program	1 hrs	3 hrs
	First C Program	1 hrs	
	Character Set		
	Special Characters: Identifiers and Keywords		
	Variables		
	Data Types in C	1 hrs	
	Operators and Expression		
	Operator Precedence	1 hrs	
Basic input/output statement			
Chapter 3. Conditional Statements and Loops	If Statement	1 hrs	1 hrs
	The if-else statement		
	Nested If else Statement		
	The switch () case statement	1 hrs	2 hrs
	Loop in C		
	For Loop		
	While Loop	1 hrs	
	Do- While Loop		
	The Break Statement	1 hrs	1 hrs
	The Continue Statement		
	The goto statement		
The Exit () statement			
Chapter 4. Arrays	Introduction	1 hrs	1 hrs
	Declaration of Single-Dimensional		
	Accessing array Elements		
	Initialization of a single dimensional	2 hrs	2 hrs
	Two-Dimensional array		
	Accessing Two dimensional arrays Elements		
	Initialization of two dimensional arrays	1 hrs	1 hrs
Strings			
	Library function in String.h		

Chapter 5. Functions	Function declaration	1 hrs	
	Function Call		
	Function Definition		
	Function Parameters		2 hrs
	Pass by value	2 hrs	
	Pass by reference		
	Recursion	1 hrs	
Chapter 6. Structures and Unions	Declaring Structure Variable		
	Structure Initialization	1 hrs	
	Accessing Structure member		
	Array of Structure		
	Array within Structure	1 hrs	3hrs
	Structure and function		
	Structure within Structure		
	Union	1 hrs	
Chapter 7. Pointer	Pointer Overview	1 hrs	---
Total		24 hr	16hr

Introduction To C++ Programming				
Chapters		Units	Th(hr)	Prac (hrs)
Basic Concepts of Object Oriented Programming			2 hrs	---
Chapter 1. Introduction to C++	What is C++		1 hrs	1 hrs
	Introduction to development			
	Structure of a Program (A simple C++ program)			
	C++ Character Set		1 hrs	1 hrs
	Tokens			
	Keywords, Identifiers, Literals, Punctuators, Operators			
	Basic Data Types		1 hrs	
	User- Defined Data types			
	Symbolic constant			
	Variables			
	Operators in C++			
	Expressions and their types		1 hrs	
	Input/Output (I/O)			
	Type conversion			
Control Structure		1 hrs	1 hrs	
Chapter 2.	The main function		1 hrs	1 hrs
Functions In C++	Function Prototype			
	Call by reference			
	Return by reference		1 hrs	

	Inline functions		
	Default arguments	1 hrs	
	Const arguments		
	Function Overloading		
Chapter 3. Classes and objects	A simple class example	1 hrs	2 hrs
	Creating objects		
	Accessing Class Members		
	Defining member functions	1 hrs	
	Nesting of Member Function		
	Private member functions	1 hrs	
	Array within a class		
	Static Data member		
	Array of object		
	Objects and function arguments	1 hrs	
	Friendly function		
Chapter 4. Constructors and Destructor	Constructors	1 hrs	1 hrs
	Multiple Constructors in a Class	1 hrs	
	Constructors with default arguments		
Chapter 5. Templates	Class Template	1 hrs	1 hrs
	Function Templates	1 hrs	
Chapter 6. Exception Handling	Introduction	1 hrs	1 hrs
	Basic of Exception Handling Exception handling		
	Exception handling Mechanism		
	Rethrowing an exception	1 hrs	
	Specifying Exception		
Chapter 7. Manipulating Strings	Creating String objects	1 hrs	1 hrs
	Manipulating string objects		
	Relational operations		
	String characteristics	1 hrs	
	Accessing Characters in strings		
	Comparing the string		
Total		22	10

9. Certification in Programming languages in JAVA

Total (Theory + Practical)= 72 Hrs

Topic	Hour
<p>Core Java</p> <p>An Overview of Java, Object-Oriented Programming, Three OOP Principles The Java Buzzwords : Simple, Object-Oriented , Robust ,Multithreaded, Architecture-Neutral , Interpreted and High Performance ,Distributed , Dynamic , Data Types</p>	1
<p>Variables, and Arrays, Arithmetic Operators, Bitwise Operators ,Relational Operators, Boolean & Logical Operators</p>	2
<p>OOPs Concepts</p> <p>OOPs Concepts, Objects And Classes, Methods, Inheritance and Polymorphism</p>	3
<p><u>Introducing Classes</u></p> <p>Class Fundamentals,The General Form of a Class , A Simple Class Declaring Objects ,A Closer Look at new ,Assigning Object Reference Variables ,Introducing Methods ,Adding a Method to the Box Class ,Returning a Value . , Adding a Method That Takes Parameters , Constructors ,Parameterized Constructors ,The this Keyword ,Instance Variable Hiding , Garbage Collection , The finalize() Method ,A Stack Class .</p>	4,5
<p>A Closer Look at <u>Methods and Classes</u></p> <p>Overloading Methods , Overloading Constructors , Using Objects as Parameters , A Closer Look at Argument Passing, Returning Objects , Recursion, Introducing Access Control , Understanding static ,Introducing final , Arrays Revisited , Introducing Nested and Inner Classes , Using Command-Line Arguments .</p>	6,7
<p><u>Inheritance</u></p> <p>Inheritance Basics , Member Access and Inheritance , A More Practical Example ,A Superclass Variable Can Reference a Subclass Object , Using super ,Using super to Call Superclass Constructors , A Second Use for super , Creating a Multilevel Hierarchy ,When Constructors Are Called , Method Overriding , Dynamic Method Dispatch , Why Overridden Methods? ,Applying Method Overriding , Using Abstract Classes , Using final with Inheritance ,Using final to Prevent Overriding ,Using final to Prevent Inheritance ,The Object Class .</p>	8,9
<p>Packages and Interfaces</p> <p>Packages ,Defining a Package ,Finding Packages and CLASSPATH , A Short Package Example ,Access Protection ,An Access Example ,Importing Packages ,Interfaces ,Defining an Interface ,Implementing Interfaces ,Applying Interfaces ,Variables in Interfaces ,Interfaces Can Be Extended .</p>	10,11
<p>Exception Handling</p>	12,13

<p>Exception-Handling Fundamentals ,Exception Types ,Uncaught Exceptions ,Using try and catch ,Displaying a Description of an Exception ,Multiple catch Clauses ,Nested try Statements ,throw , throws ,finally ,Java’s Built-in Exceptions ,Creating Your Own Exception Subclasses ,Chained Exceptions ,Using Exceptions</p>	
<p>Multithreaded Programming The Java Thread Model ,Thread Priorities, Synchronization ,Messaging,Thread Class and the Runnable Interface, Creating a Thread, Implementing Runnable, Extending Thread, Thread Priorities, Synchronization</p>	14,15
<p>String Handling The String Constructors,String Length ,Special String Operations,String Literals,String Concatenation ,String Concatenation with Other Data Types ,String Conversion and toString() , Character Extraction ,charAt(),getChars() ,getBytes() ,toCharArray() , String Comparison ,equals() and equalsIgnoreCase() ,regionMatches() ,startsWith() and endsWith() ,equals() Versus == compareTo() ,Searching Strings ,Modifying a String ,substring() ,concat() ,replace() ,trim() ,Data Conversion Using valueOf() , Changing the Case of Characters Within a String ,String Methods Added by Java 2, Version 1.4 .StringBuffer ,StringBuffer Constructors .length() and capacity() ,ensureCapacity() ,setLength() , charAt() and setCharAt() ,getChars() ,append() ,insert() , reverse() ,delete() and deleteCharAt() ,replace() ,substring()</p>	16,17
<p>Input/Output: The Java I/O Classes and Interfaces,File,Directories,Using FilenameFilter ,The listFiles() Alternative ,Creating Directories,The Stream Classes ,The Byte Streams ,InputStream ,OutputStream ,FileInputStream ,FileOutputStream ,ByteArrayInputStream, ByteArrayOutputStream ,Filtered Byte Streams ,Buffered Byte Streams SequenceInputStream ,PrintStream ,RandomAccessFile ,The Character Streams ,Reader ,Writer ,FileReader ,FileWriter , CharArrayReader ,CharArrayWriter ,BufferedReader ,BufferedWriter ,PushbackReader ,PrintWriter.</p>	18,19
<p>Applet Fundamentals The Applet Class Applet Basics The Applet Class, Applet Architecture An Applet Skeleton Applet Initialization and Termination</p>	20
<p>Using AWT Controls, Layout Managers, and Menus Labels ,Using Buttons ,Handling Buttons ,Applying Check Boxes, Handling Check Boxes, CheckboxGroup,Choice Controls, Handling Choice Lists, Using Lists ,Handling Lists ,Managing Scroll Bars, Handling Scroll Bars, Using a TextField, Handling a TextField ,Using a TextArea , Understanding Layout Managers, FlowLayout, BorderLayout Using Insets ,GridLayout , CardLayout, Menu Bars and Menus, Dialog Boxes, FileDialog,Handling Events by Extending AWT Components , Extending Button, Extending</p>	21,22

Checkbox, Exploring the Controls, Menus, and Layout Managers.	
<p>Event Handling</p> <p>Two Event Handling Mechanisms ,The Delegation Event Model , Events ,Event Sources ,Event Listeners , Event Classes ,The ActionEvent , The AdjustmentEvent Class,The ComponentEvent Class, The ContainerEvent Class,The FocusEvent Class,The InputEvent Class , The ItemEvent Class,The KeyEvent Class,The MouseEvent Class, The MouseWheelEvent Class ,The TextEvent Class,The WindowEvent Class,Sources of Events,Event Listener Interfaces ,The ActionListener Interface ,The AdjustmentListener Interface,The ComponentListener Interface ,The ContainerListener Interface ,The FocusListener Interface, The ItemListener Interface,The KeyListener Interface ,The MouseListener Interface ,The MouseMotionListener Interface ,The MouseWheelListener Interface ,The TextListener Interface ,The WindowFocusListener Interface ,The WindowListener Interface ,Using the Delegation Event Model ,Handling Mouse Events ,Handling Keyboard Events.</p>	23
<p>Swing</p> <p>Japplet, Icons and Labels, Text Fields, Buttons, The JButton Class, Check Boxes, Radio Buttons, Combo Boxes, Tabbed Panes, Scroll Panes , Trees , Tables.</p>	24
<p>HTML fundamentals</p> <p>Tags and their attributes: table , input, select, form , Passing data between pages-Using hidden variables , Form attributes: action , method , Advantages and disadvantages</p>	25
<p>SQL Structured Query language</p> <p>Introduction to relational database, Primary key, foreign key ,Examples of relational database, Joins (inner, outer, Cartesian) ,Select ,Where ,Order by ,Group by Having ,Insert, update, delete</p>	26,27
<p>Introduction to MS Access</p> <p>Creating tables, Data types and relationships in tables</p>	28
<p>JDBC Java Database Connectivity</p> <p>JDBC-ODBC Bridge, JDBC Drivers, Creating DSN, Driver Manager, Connection, Statement, Result Set, ODBC Database URL, Statement, Selecting records from database example, JDBC, Prepared Statement , Connect Statement, Insert, update, delete examples</p>	29,30

<p>JSP</p> <p>Introduction of server-side scripting and client-side scripting language, Comparison ASP – JSP, Installing tomcat web server, Life cycle of jsp page, Usage of servlet by jsp page, Comment Documents the JSP page but is not inserted into the response.</p> <p>Declaration Declares a variable or method valid in the scripting language used in the page. Expression Contains an expression valid in the scripting language used in the page. Scriptlet Contains a code fragment valid in the scripting language used in the page. Directives Description</p> <p>Include Directive Includes a resource of text or code when the JSP page is translated. Includes a resource of text or code when the JSP page is translated. Page Directive Defines attributes that apply to an entire JSP page. <code><jsp:include></code> Includes a static resource or the result from another web component Examples and syntax of directives, Using JDBC examples (select , insert) in JSP</p>	31-33
<p>Using JDBC examples (delete , update) in JSP, Creating an complete ADD-MODIFY-DELETE screen in JSP, Introduction to Session and Cookies , Session and cookies example in JSP</p>	34,35
<p>Java Beans</p> <p>What Is a Java Bean? Advantages of Java Beans, Beans in JSP -<code><jsp :get Property></code> Inserts the value of a bean property into the response. <code><jsp :set Property></code> Sets a bean property value or values. <code><jsp :use Bean></code> Instantiates or references a bean with a specific name and scope. Example exhibiting usage of use Bean , set Property , get Property.</p>	36

10 Certification in Programming languages in .NET

Total (Theory + Practical)= 72 Hrs

Topic	Hour
What is Microsoft .Net – Definition, Core Components of .Net	1
What is Visual Studio.Net – Diff. Applications supported by VB.Net,Features	
The .Net Framework .NET Overview, Framework Class Library, Assemblies and Namespaces, Common Language Runtime, Base Classes, Intermediate Language , Garbage Collection , Versioning and Side-by-Side Execution , DLL Hell	
OOPs Concepts, Objects and Classes, Inheritance	2
C# basics – Evolution, Features, Applications, Data types	3
Functions and Function Overloading.	4
ASP .NET – Introduction to ASP.NET, Working with Controls- Label,TextBox,Button	5
C# statements – Selection and Looping with ASP.NET	6,7
Coding for ASP.NET controls using C# – Arrays, Inbuilt Functions - string functions.	8
Mathematical functions, Conversion functions.	9
Using Rich Server Controls RadioButton, CheckBox, Link Button, Hyperlink	11
Image Button, Image, Image map, Panel	12
File Upload Control, Adrotater Control, Calendar Control	13,14
List Controls	15
Site Navigation Controls – Sitemap, Treeview, Menu	16
Validation Controls	17
Master Pages, Themes and Skins	18
Session State management Cross Page Posting, Session State, Cookies and Application Variables	19
SQL Server Introduction Database Concepts, Normalization, Data types.	20

Databases and tables Structured Query Language (SQL) Data Definition Language, Data manipulation Language- Insert, Update, Delete, Select statement.	21-22
Stored Procedures Variables, Selection and Looping statements	23
Database connectivity with SQL Server – Data Access components with ADO.NET, Accessing Data, Overview of ADO.NET , Connecting to Data ,Executing Commands .	24-26
Database connectivity with MS Access	27
Data Controls Properties of Gridview control	28
Other Data Controls ListView , Formview Control.	29
Repeater and Datalist Controls	30
Templates in Data controls	31
Login Controls	32
Advanced Topics Building Components- Classes and Objects, App_Code, Assemblies.	33
AJAX controls – Watermark, ConfirmButton, Accordion etc.	34
Crystal Reports – Simple and Parameterised ,Publishing Website	35,36