

**MAHARASHTRA STATE BOARD OF VOCATIONAL EDUCATION EXAMINATION,
MUMBAI - 51**

1	Name of Course	Certificate Course in Multimedia and Internet Technology (101203)																																																														
2	Max. Nos. of Student	25 Students																																																														
3	Duration	1 Year																																																														
4	Type	Full Time																																																														
5	Nos. of Days / Week	6 Days																																																														
6	Nos. of Hours /Days	7 Hrs																																																														
7	Space Required	Theory Class Room – 200 sqft Practical – 800 sqft																																																														
8	Entry Qualification	S.S.C. Passed																																																														
9	Objective Of Syllabus/ introduction	To enable the students to 1. acquire skills to use the Computer in Information Technology Applications. 2. familiarize with e-mail and web publishing. 3. acquire skills to create web pages and web sites. 4. create simple Multimedia Presentations. 5. acquire skills in graphic, sound and video editing. 6. acquire skills to access web based data base.																																																														
10	Employment	Trainee can get job in computer related establishment.																																																														
11	Teacher’s	Degree / Diploma in Computer Science & Engg.																																																														
12	Training System	<table><tr><th colspan="7">Training System Per Week</th></tr><tr><td colspan="2">Theory</td><td colspan="2">Practical</td><td colspan="3">Total</td></tr><tr><td colspan="2">18 Hours</td><td colspan="2">24 Hours</td><td colspan="3">42 Hours</td></tr></table>							Training System Per Week							Theory		Practical		Total			18 Hours		24 Hours		42 Hours																																					
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SYLLABUS
THEORY - I
Hardware and Internet
PART A

1. Overview of Computer Hardware

- 1.1 Block Diagram of a Computer.
- 1.2 Study of Computer Configurations.

2. Peripheral Devices Introduction to

- 2.1 Input devices - Keyboard, mouse, digitizer, touch screen, scanners.
- 2.2 Output devices - Printers Dot-Matrix, Inkjet and Laser; and Plotters.
- 2.3 Microphones and Speakers.
- 2.4 Other devices - Webcams, digital image and movie cameras.

3. Memory and Storage Media

- 3.1 Semiconductor memories and concept of volatile and non-volatile memory, RAM and its sub types, ROM and its sub types, various memory cards.
- 3.2 Secondary Storage Devices- Floppy and Hard Disk Drives, USB pen drive, ZIP drive and Tape drives,
- 3.3 Optical Secondary Storage- DVD and CD writer/reader drives.
- 3.4 File Compression issues for storage.

4. Network Components

- 4.1 Various Transmission Media.
- 4.2 Different types Network architectures, access methods, protocols, topologies and their comparison.
- 4.3 Introduction to network components: servers, nodes, switches, modems bridges, routers (identification and use only) and LAN card.

5. Introduction to Internet and Internet Tools

- 5.1 Internet and the World Wide Web
- 5.2 Internet Related protocols
- 5.3 Web Servers
- 5.4 Web Browsers and their use
- 5.5 Popular Browsers
- 5.6 E-mail Clients, Outlook Express/ Eudora
- 5.7 Messenger Clients Yahoo!, MSN and AOL.

THEORY - I

PART B

1. Peripheral Devices

- 1.1 Study of Printers - Inkjet and Laser Printers.
- 1.2 Various scanners - flatbed, drum-type and handheld.
- 1.3 High resolution imaging CCD.
- 1.4 Audio and Video recording parameters.

2. Storage Devices

- 2.1 Study of CD and DVD media.
- 2.2 Various compression techniques for storage of large files.
- 2.3 Network data storage and Web-based data storage.

3. Network Components

- 3.1 Modem Types (Asynchronous, synchronous), ISDN
- 3.2 Cables - coaxial, twisted pair, fiber optic (diagram and features)
- 3.3 Hubs - active, passive and Intelligent (switches)
- 3.4 Study of repeaters, bridges and routers
- 3.5 Other transmission media - Wi-Fi, Wireless links and VSAT.

4. Internet Protocols

- 4.1 Understanding of terms - IP, PPP, DNS
- 4.2 Basic protocols -TCP/IP and HTTP, FTP
- 4.3 Mail protocols - POP, SMTP, IMAP.

PRACTICAL - I

PART A

- 1 Familiarization with Windows, Desktop Features
- 2. Study of Control Panel and Settings of :
 - i] Display ii] Audio Devices iii] Network,
 - iv] Internet Options v] Fonts
- 3. Printer Setup
- 4. Sharing of Network Resources and related Settings
- 5. Modem Setup
- 6. Testing of Network Connectivity using the Command Prompt (ping and ipconfig)
- 7. Study of Browsers : Netscape and Internet Explorer
- 8. Creating E-Mail IDs, Sending and Receiving of E-Mail
- 9. Use of Search Engines
- 10. Study of Messenger Utility.

NOTE : Though a list of only ten Experiments has been provided for each paper, students have to perform each of the above experiments with 3 different sets of parameters. A minimum of 25 practicals per paper should be performed.

PRACTICAL- I

PART B

Practicals

1. Study of a Scanner - Installation, Use, Settings
2. Study of Sound Card - Installation, Parameter Settings, Use
3. Study of CCD Camera - Installation, Parameter Settings, Application
4. Study of CDR (Writer) - To cut CD (Store the projects - Experimental files on CD)
5. Study of Zip Drive & DVD
6. Study of Hub - Installation (Demonstration)
7. Setting of Protocols for E-mail in Outlook Express
8. Study of FTP, Uploading and Downloading files on Web Servers
9. Study of DNS, To find IP addresses of 10 different URLs
10. Creation of Data Source Name (DSN) on Local server for Database Utility.

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THEORY - II

Application Software

PART A

1. Digital Audio Formats

- 1.1 Study of wav, Windows Media Audio, mp4, mp3, QuickTime, aiff, au, RealAudio and CD Audio Formats.
- 1.2 Study of related file extension names, codes and proprietary details.
- 1.3 Study of Windows Sound Recorder and its Controls.
- 1.4 Concept of Streaming audio.
- 1.5 Midi files - *.mid, *.rmi, *.midi etc.

2. Image Formats

- 2.1 Elements of Graphics - Pictures and images, raster or bitmap images and vector images, aspect ratio.
- 2.2 Study of image formats like - bmp, jpg(jpeg), gif, tiff, tga, png, and ico.
- 2.3 Study of simple Image editing software.

3. Animation and Presentation

- 3.1 Definition of animation. Creating Animation, Study of GIF animator.
- 3.2 Study of Presentation Software Package such as Microsoft PowerPoint.

4. Multimedia Concepts

- 4.1 Multimedia development issues - concept validity, technology dependence, availability of content tools, authoring and creativity, delivery and product support.
- 4.2 Concept of morphing.

THEORY - II

PART B

1. Macromedia Flash

- 1.1 Introduction and how flash software works, Steps to do a flash movie.
- 1.2 Basic functions - opening and closing files, flash windows, window control.
- 1.3 Creating objects - drawing in flash, Drawing toolbar - Line tool, oval tool, rectangle tool, pencil tool, brush tool, ink bottle tool.
- 1.4 Editing objects - selecting with different tools, editing lines and grouping objects.
- 1.5 Frames and layers - working with frames, adding frames deleting and copying frames, working with layers, inserting layers and layer modes.
- 1.6 Bitmaps and sound - Importing bitmaps, sound in flash and creating sounds.
- 1.7 Animation - elements of animation, motion twinning, shape twinning.

2. Macromedia Director

- 2.1 Introduction to Macromedia Director.
- 2.2 Cost, use of cost, internal and external costs.
- 2.3 Creating cost members within Director, Cost windows, importing cost member, moving cost members, viewing cost member properties,
- 2.4 Linking files, supported file types.
- 2.5 Keyboard shortcuts, menu commands, study of standard toolbar, Director window shortcut.
- 2.6 Director scripting - lingo and browser scripts - features of both.
- 2.7 Sending messages to a movie and scripting environment.
- 2.8 Use of stage and score and score channels.
- 2.9 Working of scripts.
- 2.10 Creating interactivity.
- 2.11 Editing media.
- 2.12 Working behind the scenes.
- 2.13 Completing movies.
- 2.14 Creating Shockwave movies for the web.

3. Microsoft FrontPage

- 3.1 Introduction to features of FrontPage.
- 3.2 FrontPage views, Standard and formatting toolbar commands.
- 3.3 Creating a simple web page- editing text and page title.
- 3.4 Formatting a webpage - physical and logical formatting, list, text and background colour.
- 3.5 Adding and customizing images, background images and photo gallery creation.
- 3.6 Create hyperlinks within same page/other pages, link properties.
- 3.7 Creating and formatting tables.
- 3.8 Frames - creation adding and resizing.

4. Macromedia Dreamweaver

- 4.1 Introduction to Dreamweaver
- 4.2 Exploring the basic interface - Document window, objects panel, property inspector and launcher.
- 4.3 Formatting text and graphics with the document window
- 4.4 Using property inspector
- 4.5 Using Object panel
- 4.6 Working with web-page files - creating, viewing and editing.
- 4.7 Creating hyperlinks, tables and frames.

PRACTICAL - II

PART A

1. Study of Audio Formats
2. Conversion of Audio Formats
3. Study of Image Formats
4. Conversion of Image Formats
5. Familiarization with Presentation
6. Simple Animations with GIF Animator
7. Presentation with Sound Effects
8. Presentation with Video Clips
9. Study of Selection of Appropriate Format of a File (Graphics, Sound, Animation for Web Application)
10. Simple Project on Multimedia Presentation.

NOTE : Though a list of only ten Experiments has been provided for each paper, students have to perform each of the above experiments with 3 different sets of parameters. A minimum of 25 practicals per paper should be performed.

PRACTICAL - II

PART B

Practicals

1. Study of Layers in Flash
2. Study of TimeLine in Flash
3. Study of Transitions/Background in Flash
4. Simple Presentation using Flash
5. Study of Flash Plug-ins
6. Study of Director Environment
7. Study of a Cast and a Score
8. Study of Front Page Environment
9. Study of Dream Weaver Environment
10. Creating a Simple Web Site using Text, Graphics, Sound.

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THEORY - III

Programming

PART A

1. HTML

- 1.1 Features, Properties and Limitations
- 1.2 HTML Tags and Attributes
- 1.3 Creating Hyperlinks
- 1.4 Physical Style Tags
- 1.5 Images in HTML
- 1.6 Tables in HTML.

2. Introduction to Visual Basic

- 2.1 Introduction to Visual Basic
- 2.2 Layout of Visual Basic 6.0 IDE, Various windows and toolbars
- 2.3 Visual Basic specific controls (objects)
- 2.4 Control (object) properties, related procedures and events
- 2.5 Specific Variables in VB conversion between different variables
- 2.6 A few built-in functions in Visual Basic
- 2.7 Selection and Iteration procedures in Visual Basic
- 2.8 Simple programs in Visual Basic.

3. Programming in Java

- 3.1 Introduction to Java and its features
- 3.2 Structure of basic java program- Java source
- 3.3 Variables, Literals, Unary Operators, Binary Operators and Expressions
- 3.4 Selection and Iteration in Java
- 3.5 Function in Java
- 3.6 Simple programs in Java.

THEORY - III

PART B

1. Introduction to JavaScript and client side scripting

- 1.1 Limitation of plain HTML and requirement of a scripting language
- 1.2 Difference between Java and JavaScript, JavaScript as a scripting language
- 1.3 Variables, Literals, Unary Operators, Binary Operators, Expressions, Alerts and prompts in JavaScript
- 1.4 Selection and Iteration in JavaScript
- 1.5 Simple HTML programs using basic JavaScript.
- 1.6 Difference in Client and Server Side Scripting
- 1.7 Reason for JavaScript being the universal Client Side scripting language
- 1.8 The Document Object Model (DOM) and Properties Events and Methods of objects
- 1.9 Simple JavaScript programs involving Validation of date, numbers, e-mail address, username and passwords and standard objects.

2. ASP using VBScript

- 2.1 Introduction to ASP
- 2.2 ASP compared to other Server Scripts
- 2.3 Variables, Data types, Operators, Declarations and Expressions VBScript
- 2.4 Selection and Iteration in VBScript
- 2.5 Variable Types in ASP
- 2.6 Events and event driven actions
- 2.7 Simple ASP programs using VBScript

3. Advanced HTML

- 3.1 Marquee, hit counter, banner and Frames
- 3.2 Image Mapping, Client and Server side
- 3.3 Forms and Form Objects
- 3.4 Embedding Sound and Video
- 3.5 Applets
- 3.6 Web Servers
- 3.7 Font Embedding
- 3.8 Cross Browser Testing
- 3.9 Introduction to CSS.

PRACTICAL - III

PART A

1. Study of HTML Tags
2. Creation of a Page with Images, Text and Animation
3. Study of Links
4. Study of Integrated Development Environment
5. Study of Tool Box and Property Editor
6. Use of Buttons, Labels, Text Box
7. Use of Control Structures
8. Display Message on the Screen
9. Mathematical Calculation using JAVA
10. Programs using Control Structures and Looping Structure.

NOTE : Though a list of only Ten Experiments has been provided for each paper, students have to perform each of the above experiments with 3 different sets of parameters. A minimum of 25 practicals per paper and 75 practicals in all three papers should be performed.

PRACTICAL - III

PART B

1. Accepting Input from a Web Client and Channelizing Client to different URLs
2. Processing Information provided by the user such as - Use of Name provided by the user in the next page, calculating the difference between the dates, String Manipulation
3. Reading & Writing Text Files From & On Web Server
4. Reading & Writing Data into Access Data base
5. Validation of Form (Text, Numbers, Dates)
6. Creation of Active Buttons in Web Page
7. Auto change of Mouse Pointer on a Web Page
8. Customizing Client Browser
9. Use of Marquee, Hit Counter, Add Rotator, Content Rotator
10. Construction of a Web Site carrying - ASP pages, Client Side Scripted Pages - with Marquee, Rotator & Hit Counter.

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List of Tools, Machinery, Equipments etc. (Course Code – 101203)

Sr. No.	Name Of Item	Quantity (Nos.)
1	Intel core 2 duo or higher processor, 2 GB RAM, Intel Motherboard, 500 GB Hard Disk, 17" Monitor, Keyboard, Mouse, DVD Combo Drive or latest configuration	08+01 (1 Computer for Teacher)
2	Server	01
3	24 port unmanaged switch	02
4	LAPTOP	01
5	LCD Projector	01
6	MODEM	01
7	Dot matrix printer	01
8	Inkjet printer	01
9	Laser printer	01
10	Scanner	01
11	UPS 5 KVA	01
12	Visual Studio latest version	01
13	JDK latest version	01
14	Macromedia Flash 8 or higher version	01
15	Adobe Dreamweaver latest version	01
16	Adobe Director latest version	01
17	MS Office latest version	01
18	Antivirus latest version	As required
19	ISDN/Broad Band Internet Connection	01
20	Speaker	02
21	Computer Table	09
22	Chair	26

List of References

1. Microprocessor, Architecture, Programming and Applications with the 8085-4th Ed -Ramesh Gaonkar - Penram International
2. Networking Essentials MSCE Training Guide - (Techmedia)
3. Web Publishing - Jude and Monica D'Souza -TMH
4. Multimedia Technology and Applications - David Hilman (Galgotia Pub.)
5. Multimedia Making it Work - Tay Vaughan (TMH - 4th Ed.)
6. Mastering Visual Basic - Evangelos Petroustos -BPB SYBEX
7. Java - E. Balagurusamy- TMH
8. Flash in Easy Steps - Dreamtech Press
9. Dreamweaver in Easy Steps - Dreamtech Press
10. Director in Easy Steps - Dreamtech Press
11. FrontPage in Easy Steps - Dreamtech Press
12. Teach Yourself JavaScript in 24 Hours, 2nd Ed. - Michael Moncur, Techmedia- BPB
13. Discover ASP 3.0, Monica & Jude D'Souza, - TMH
14. PC Upgrade & Maintenance Guide - Mark Minasi -BPB SYBEX
