

16. MULTIMEDIA AND WEB TECHNOLOGY (CODE: 067)

Learning Objectives:

1. To develop proficiency in Webpage Development
2. To develop proficiency in creating dynamic Web Interface
3. To be able to write server and client sides scripts and manage websites
4. To design a web page using Image, Audio and Video editing tools
5. To understand the concept of Open Source software

Competencies:

The student will develop proficiency in the following:

1. Managing a web-site with server/client side script
2. Handling web based Multimedia content in Webpage

CLASS XI (THEORY) (2013-14)

Duration: 3 Hours

Total Marks: 70

Unit No.	Unit Name	Periods		
		Th	Pr	Tot
1.	INTRODUCTION TO COMPUTER SYSTEMS	22	08	30
2.	WEB DEVELOPMENT	50	40	90
3.	WEB SCRIPTING	40	35	75
4.	MULTIMEDIA AND AUTHORIZING TOOLS	30	15	45
		142	98	240

Unit 1: Introduction to Computer System:

15 Marks (22 Periods)

Hardware Concepts:

Computer Organization(basic concepts): CPU, Memory (Primary and Secondary), I/O devices;

Input devices: Keyboard, Mouse, Light pen, Touch Screen, Graphics Tablet, Joystick, Microphone, OCR, Scanner, Smart Card reader, Barcode reader, Biometric sensor, Web Camera;

Output Devices: Monitor/Visual Display Unit (VDU), LCD screen, Television, Printer (Dot Matrix Printer, Desk jet/ Inkjet/ Bubble jet Printer, Laser Printer), Plotter, Speaker;

Secondary Storage Devices: Fixed and Removable Storage - Hard Disk Drive, CD/DVD Drive, Pen Drive, Blue Ray Disk, Flash Drive, Memory cards;

Memory Concepts:

Units: Bit, Byte, Kilo Byte (2¹⁰= 1024 Byte), Mega Byte, Giga Byte, Tera Byte, Peta Byte;

Primary Memory: Cache, RAM, ROM;

Note: During the lab sessions, it is advised to explore various hardware components available in the Computer Lab.

Software Concepts:

Types of Software: System Software, Utility Software and Application Software;

System Software:

Operating System, Language Processors - Compiler, Interpreter and Assembler;

Operating System:

Need for operating system, functions of operating system (processor management, memory management, file management and device management);

Commonly used operating systems: UNIX, LINUX, Windows, Solaris, BOSS (Bharat Operating System Solutions), Mobile OS - Android, Symbian;

Utility Software:

Anti virus, file management tools, compression tools and disk management tools (disk cleanup, disk defragmenter, backup);

Application software:

General Purpose Application software: Office Tools - word processor, presentation tool, spreadsheet package, database management system;

Specific Purpose Application software: Domain specific tools - school management system, inventory management system, purchasing system, human resource management system, payroll system, financial accounting, hotel management, reservation system and weather forecasting system;

GUI Operating System

Note: Students/Teachers can also perform similar operation on any operating system like Linux, BOSS, Windows. It is advised that the teacher while using any one operating system, give a demonstration of equivalent features for the other operating system.

GUI Components:

General features, Elements of desktop - taskbar, icon, start button, shortcuts, folder, recycle bin, my computer;

Start Menu:

Program, documents, settings, find/search, help, run, shutdown/logoff;

Program Menu:

Accessories - calculator, text editor, image editor, entertainment (such as sound recorder, media player);

Control Panel: Add new hardware; add new software, printer installation, date/time settings, mouse and regional settings, customization of taskbar, start menu, display properties (wallpaper, font settings, color settings, screen savers);

Unit 2: Web Development

25 Marks (50 Periods)

www, Hyper Text Transfer Protocol(HTTP), File Transfer Protocol(FTP), TCP/IP, PPP, Domain names, URL, IP Address, Website, Web browser, Web Server, Web Hosting;

HTML

Introduction:

Content creation: creating HTML document using a text editor, saving HTML document, editing a HTML document, viewing HTML documents in a web browser, switching between text editor and web browser windows to view changes;

Browsers:

Mozilla firefox, google chrome, internet explorer, netscape navigator, safari, opera;

Web Page Authoring Using HTML:

Basic Concepts:

Concept of tags and attributes, difference between container tag and empty tag;

Structural Tags of HTML:

<HTML>, <HEAD>, <TITLE>, <BODY>;

Attributes of <BODY> (BGCOLOR, BACKGROUND, LINK, ALINK, VLINK, TEXT);

Inserting Breaks:

Line break
, section break <HR>, Attributes of <HR> (WIDTH, ALIGN, SIZE, NOSHADE, COLOR);

Creating Paragraphs:

<P>, Attributes of <P> (ALIGN);

Formatting Tags of HTML:

<SMALL>, <BIG>, , <I>, <U>, , <BLOCKQUOTE>, <PRE>, <SUB>, <SUP>, <STRIKE>, <ADDRESS>, Adding Comments in HTML (<!-- -->), Heading tag (<H1> to <H6>), Attributes of Heading tag (ALIGN), tag, <BASEFONT>, Attributes of and <BASEFONT> (SIZE, COLOR, FACE);

Creating Lists:

Ordered Lists: , , Attributes of (TYPE, START, VALUE); **Unordered Lists:** , , Attributes of (TYPE- disc, circle, square);

Definition List: <DL>, <DT>, <DD>;

Creating Links:

Internal linking using <A NAME> and <A HREF>, external linking using <A HREF>, e-Mail linking using <A HREF>;

Concept of URL: Absolute URL and Relative URL;

Inserting Images:

Inserting inline images using , Attributes of (SRC, ALIGN, WIDTH, HEIGHT, ALT, BORDER);

Adding Music:

Adding music using <A HREF> and <EMBED>, Attributes of <EMBED> (SRC, ALIGN, WIDTH, HEIGHT, LOOP, AUTOSTART, HIDDEN);

Creating Tables:

Creating Table using <TABLE>, Attributes of <TABLE> (BORDER, BGCOLOR, BACKGROUND, ALIGN, CELSPACING, CELLPADDING, WIDTH, HEIGHT, BORDERCOLOR);

Creating rows and columns in a table using <TH>, <TR>, <TD>, Attributes of <TH>, <TR>, <TD> (ALIGN, VALIGN, COLSPAN, ROWSPAN);

Adding headings for a table using <CAPTION> , Attribute of <CAPTION> (ALIGN);

Creating Frames:

Dividing the window into two or more frames using <FRAME> and <FRAMESET>, Use of percentage dimensions and relative dimensions while dividing the window, use of <NOFRAMES> </NOFRAMES>;

Attributes of <FRAMESET> (ROWS, COLS, BORDER, FRAMEBORDER);

Attributes of <FRAME> (SRC, NAME, FRAMEBORDER, HEIGHT, WIDTH, MARGINHEIGHT, MARGINWIDTH, SCROLLING, NORESIZE) ;

Creating Forms:

Forms for data collection which can be written to a file, submitted to a database or emailed to someone;

Creating Forms using <FORM> , Attributes of <FORM> (NAME, ACTION, METHOD);

Creating Form Interface elements - text box, password box, file selection box, hidden box, checkbox, radio button, button, submit button, reset button using the <INPUT> , Attributes of <INPUT> applicable with different interface elements (NAME, SIZE, VALUE, ALIGN, MAXLENGTH, CHECKED, TYPE);

Multiline text area using <TEXTAREA> , Attributes of <TEXTAREA> (NAME, ROWS, COLS, WRAP);

Dropdown list or scrolling list using <SELECT> and <OPTION> , Attributes of <SELECT> (NAME, SIZE, MULTIPLE /SINGLE);

Document Object Model:

Concept and Importance of Document Object Model, Static Vs Dynamic HTML documents;

Cascading Style Sheets:

Introduction to Cascading Style Sheet (CSS): Creating inline, embedded and external cascading style sheets using <STYLE> , <DIV> , and <LINK> ; Attribute of <DIV> and (STYLE);

Attributes of <LINK> (REL, TYPE, HREF);

Font Properties:

FONT-FAMILY, FONT-STYLE, FONT-SIZE, FONT-VARIANT, FONT-WEIGHT and COLOR;

Text Properties:

COLOR, WORD-SPACING, LETTER-SPACING, TEXT-DECORATION, VERTICAL-ALIGN, TEXT-TURN, TEXT-ALIGN, TEXT-INDENT, LINE-HEIGHT;

Background Properties:

BACKGROUND-COLOR, BACKGROUND-IMAGE, BACKGROUND-REPEAT

Margin Properties:

MARGINS (all values);

Padding Properties:

PADDING (all values);

Border Properties:

BORDER (all values);

Positioning: Absolute and Relative;

Additional Features: Assigning classes;

XML-eXtensible Markup Language:

Introduction, features, advantages;

Structure of XML:

Logical structure, Physical structure;

XML Markup:

Element Markup (example: <foot>Hello</foot>), Attribute Markup

(example: <! element.name property = "value" >);

Naming Rules:

Naming rules for elements, attributes and descriptors;

Components in XML:

Tags, Elements, Root element, Attributes, Entities;

Comments in XML;

Developing DTD:

Element Declaration in a DTD: <!ELEMENT elementname (content-type) >;

Entity Declarations, Declaring Empty Elements, Container Elements, Unrestricted Elements, Attribute Declarations;

Element Content Model;

Element Occurrence Indicators: ?, *, +

Character Content: PCDATA (Parseable Character data) <!ELEMENT text(#PCDATA) >;

Well Formed XML Documents, Valid XML Documents;

Document Type Declaration (DTD) - Internal and External DTD;

Validating an XML document using a DTD;

Developing a DTD, Developing a DTD from XML Code, either automatically or manually;

Viewing XML in Internet Explorer, Viewing XML using the XML Data Source Object;

Unit 3: Web Scripting

20 Marks (40 Periods)

VBScript:

Introduction to client side scripting using <SCRIPT> tag,

VBScript Variables:

Declaring variable, implicit and explicit declaration, naming restrictions, assigning values to variables, scalar variables and 1-D array, variant data type;

VBScript Constants;

VBScript Operators:

VBScript Operators and Operator precedence;

Arithmetic Operators: +, - (Unary and Binary), *, /, \ (integer division), MOD, ^;

Comparison Operators: <, >, <=, >=, <>, =;

Logical Operators: AND, OR, NOT;

String Operators: & and + (for concatenation);

Control Structures in VBScript:

Conditional statements:

If..Then..End if, If..Then..Else..End If, If..Then, Else If..Then..Else..End If Select..Case..End Select;

Loops:

For..Next, For Each.. Next, Do While..Loop, While.. Wend ,Do.. Loop While, Do Until.. Loop, Do..Loop Until;

Entry controlled and Exit controlled loops;

Inbuilt Functions of VBScript:

General Functions:

MsgBox function, Arguments of MsgBox function (Prompt, Buttons, Title), Return values of MsgBox function; InputBox function, Arguments of InputBox function (Prompt, Title, Default), Return values of InputBox function;

Conversion Functions:

Abs(), CBool(), CByte(), CInt(), CStr(), CSng(), CLng(), CDate()

String Manipulation Functions:

Ucase(), Lcase(), Len(), Left(), Right(), Mid(), LTrim(), RTrim(), Trim(), InStr(), strreverse();

Time & Date Functions:

Date(), Day(), Month(), Hour(), Minute(), Monthname(), Now();

VBScript Procedures and Functions(User Defined):

Sub procedures, Functions, passing parameters/arguments;

Creating Dynamic Interface using VBScript

Using VBScript with HTML form controls;

Unit 4: Multimedia and Authoring Tools

10 Marks (30 Periods)

Concept of Multimedia:

Picture/Graphics, Audio, Video;

Digital Images and Digital Image representation, animation, morphing;

Image Formats:

TIFF, BMP, JPG/JPEG, GIF, PDF, PSD, PIC;

Applications:

Poster design, still pictures, colored layout, designing of books, magazines brochures(children's literature, narrative text handling, scripts in Indian Languages, picture books, comics, illustrations with photographs, scientific illustrations, conceptual illustrations, handling of assignment for the market);

Image Scanning with the help of scanner:

Setting up resolution, size, file formats of images, bitonal, grey scale and color options, preview the image;

Graphic Tools:

Image Editing Software (Photoshop / Coreldraw/GIMP);

Basic Concepts of Image Creation:

Introduction;

Interface elements of the tool: menus, toolbox, color control icons, mode control icons, window controls icons;

Creating new images, saving images and opening existing images;

Image Handling:

Cropping, adjusting image size, adjusting the size of the work canvas, rotating selections, scaling an object;

Operations on Layers:

Adding new layers, dragging and pasting selected objects on to layers, dragging layers between files, viewing, hiding, editing, moving, copying, duplicating, deleting, merging layers, preserving layers, using adjustment layers;

Channels and Masks:

Channel palette: showing and hiding channels, splitting channels in to separate images, merging channels, creating a quick mask, editing masks using quick mask mode;

Painting and Editing:

Brushes palette: brush shape, creating and deleting brushes, creating custom brushes, setting brush options, saving, loading and appending brushes;

Options palette: opacity, pressure, exposure, paint fade-out rate, making, adjusting, moving, copying, extending, reducing, pasting and deleting selections using selection tools, softening the edges of a selection, hiding a selection border;

Sound:

Recording sound using Sound Recorder (Capture), sound capture through sound editing software (ex: Sound Forge), sound editing (noise correction, effect enhancement);

Importing audio files from external devices and saving them;

Sound Quality: CD Quality, Radio Quality, Telephone Quality;

Voice Recording Software:

e.g. Audacity, Speech recorder, orex (Mono & Stereo);

Sound File Format:

AIFF (Audio Input File Format from Apple Mac), MIDI, WAV, MP3, ASF (Streaming format from Microsoft);

Importing audio files from external devices and saving them;

CLASS XI (PRACTICAL)

Duration: 3 Hours

Total Marks: 30

1. Hands on Experience

15

- A topic based website is to be developed by each student using various commands covered in HTML and VBScript.
- Web pages should be designed with the following features:
 - HTML Basic Tag (<HTML>/<HEAD>/<TITLE>/<BODY>//<I>/<U>/
/<HR>)
 - Anchor/Image insertion/Linking
 - Tables/Frame/Form
 - CSS
 - Buttons/Combo Box/Check Box/Text Box using VBScript
 - XML Markup / Declarations / Element Content Model

2. Practical File

05

The practical file should be made on some domain specific area (with supported documents and printouts) such as:

- Make a web page for 'Crime against Poor Community' or 'How can I serve my country' and view it in the browser.
- Link a few more pages to the developed page, containing information about Crime and steps taken by the Government. (Use HTML tags to make a Static web page).
- Use inline styling to change appearance of contents on the web page.
- Use Style sheets (embedding or linking) to change the appearance of all the pages developed in the above case.
- Enhance the above web site by providing data in table format and add images edited using the Image Editing Tool learnt.
- At this step of web page development add dynamic features such as adding time and current date to the web page using VBScript.
- Collect user information through form (for feedback, etc.). Display selected user details using message box (e.g., saying "Thank you for visiting the website").

3. Project

05

Knowledge domain: HTML, DHTML, CSS, VB Script, and Image editing software

Suggested topics:

1. Website of a student containing personal information about student such as email address, photograph, likes, dislikes, hobbies, class, school name, achievements, favorite restaurant, favorite tourist places, ultimate aim of life, message to mankind, role model.
2. Website of a School providing information of the school containing Moto of school, photograph of school, brief description of school, name of the principal, facilities and infrastructure, sports, faculty and departments information, results and achievements of students.

3. Website of a Restaurant providing information about types of food items, brief description about each item with pictures, price list, and availability timings.
4. Website of a Travel Agency to provide the information about various tourist places, various modes of journey available, types of hotels available.
5. Your blog in Native language/English/an Indian language.

Note:

- For developing the website collect real information from various sources.
- It is advised to break up the above-mentioned case studies into smaller modules as per coverage of the course.
- Teachers can provide alternative case studies of similar kind.

4. Viva Voce

05

During the final practical examination, oral questions will be asked from the syllabus covered in class XI and the project developed by the student(s).

QUESTION PAPER DESIGN 2013-14
MULTIMEDIA AND WEB TECHNOLOGY (Code - 067) **Class - XI**

Time 3 Hours **Max. Marks: 70**

S. No.	Typology of Questions	Very Short Answer (VSA) (1 mark)	Short Answer-I (SA I) (1 mark)	Short Answer -II (SA II) (2 marks)	Long Answer I (LA I) (3 marks)	Long Answer II (LA II) (4 marks)	Long Answer III (LA III) (8 marks)	Total Marks	% Weightage
01	Knowledge Based	2	2	3	---	---	---	10	14%
02	Conceptual Understanding	2	2	2	---	---	---	08	12%
03	Application Based and Inferential type	2	2	2	1	1	---	15	22%
04	Reasoning Based	---	---	2	2	2	---	18	25%
05	Skill Based	2	3	1	---	1	1	19	27%
	Total	8	9	10	3	4	1	70	100%

Note:

The above template is only a sample. Suitable internal variations may be made for generating similar templates keeping the overall weightage to different form of questions and typology of questions same.