DETAILED SYLLABI

SYLLABUS
Basic Computers and Internet
Paper I

1. Introduction to computer
   1.1 What is computer?
   Characteristics of Computers
   Basic Applications of Computer
   1.2 Components of Computer System
   Central Processing Unit (CPU)
   VDU, Keyboard and Mouse
   Other input/output Devices
   Computer Memory
   Concepts of Hardware and Software
   1.3 Classifications of computers
   Representation of data/Information concepts of data processing
   Definition of Information and data
   Basic data types
   Storage of data/Information as files

Tutorial: The student is allowed to enumerate in what ways he can use the computer for his own purpose/business.
Practical: The student needs to be exposed/shown various components and supposed how to switch on a computer. This applies to the next few chapters also.

2. Introduction to Windows
   2.1 What is an operating system and basics of Windows
   2.2 The User Interface
   Using Mouse and Moving Icons on the screen
   The My Computer Icon
   The Recycle Bin
   Status Bar, Start and Menu & Menu-selection
   Running an Application
   Windows Explorer Viewing of File, Folders and Directories
   Creating and Renaming of files and folders
   Opening and closing of different Windows

2.3 Windows Setting
   Control Panels
   Wall paper and Screen Savers
   Setting the date and Sound
   Concept of menu Using Help 2.4

2.4 Advanced Windows
   Using right Button of the Mouse
   Creating Short cuts
   Basics of Window Setup
   Notepad
   Window Accessories

Practical: More stress is on practical. Allow the student freely the computer experience each command rather than explaining in a theory class.
3. Elements of Word Processing

3.1 Word Processing Basic
   An Introduction to Word Processing
   Opening Word Processing Package
   The Menu Bar
   Using the Help
   Using the Icons below menu bar

3.2 Opening Documents and Closing documents
   Opening Documents
   Save and Save AS
   Page Setup
   Printing of Documents
   Display/Hiding of Paragraph Marks and Inter
   Word Space

3.3 Moving Around in a Document
   Scrolling the Document
   Scrolling by line/paragraph
   Fast Scrolling and Moving Pages

3.4 Using a Document/Help Wizard

3.5 Text Creation and Manipulation
   Paragraph and Tab Setting
   Text Selection
   Cut, copy and paste
   Font and Size selection
   Bold, Italic and Underline
   Alignment of Text: Center, Left, right and Justify

3.6 Formatting the Text
   Changing font, Size and Color
   Paragraph indenting
   Bullets and Numbering
   Use of Tab and Tab setting
   Changing case

3.7 Handling Multiple Documents
   Opening and closing of multiple documents
   Cut, Copy and Paste across the documents
   Saving of Clip boards

3.8 Table Manipulation
   Concept of table: Rows Columns and Cells
   Draw Table
   Changing cell Width and Height
   Alignment of Text in Cell
   Copying of cell
   Delete/insertion of row and columns
   Borders for Table

3.9 Printing
   Printing
   Print Preview
   Print a selected page

4. Database and Ms-Access

4.1 Introduction to database
   Database Management System
Designing a database
Elements of database

4.2 Relational Database Management System
   Relationships
   Introduction to Microsoft Access
   Design View of table
   Data Types In Ms - Access
   Properties of fields and Primary Key

4.3 Forms Queries and Reports
   Working with forms
   Form Wizard Columnar / Tabular
   Creation of forms using design View
   Creating a query
   Simple Query wizard
   Duplicate Query wizard
   Unmatched Query Wizard
   Working with Reports

4.4 Ms- Front Page/ Ms- Publisher
   4.4.1 An Introduction to Front Page
      Front Page Components
      Creating a Web, Wizard of front Page
      Front Page Editor, Database Connectivity
      Other Front Page options
   4.4.2 Introduction to Ms- Publisher,
      Critiquing a publication, Strengthening
      Publication text, rearranging elements, modifying objects
      Integrating with Office Programs,
      Importing a word document
      Creating Web documents, Creating a Web Site
      Testing a Web Site, Publishing a Web Site, Converting a
      Publication to a Web Page

5. Computer Communication and Internet
   5.1 Introduction to Internet
      1. Internet, Growth of Internet, owners of the Internet, anatomy of
         Internet, ARPANET and Internet history of the World Wide Web.
         Basic Internet Terminology, net etiquette.
      2. Internet Applications — Commerce on internet, Impact of Internet
         on Society — Crime on / through the Internet.
   5.2 Basic of Computer Networks
      LAN, WAN,
      Internet Protocols, TCP/IP
      Different Type of Topologies.
   5.3 Service on Inter Net
      WWW and web-sites
      Electronic mails
      Communication on Internet
   5.4 WWW and Web Browsers
      Web browsing software
      Internet Explorer
      Netscape Communicator
5.5 Surfing the Internet
   Giving the URL address
   Search
   Moving Around in a web-site
   Printing or saving portion of web pages
   Downloading

5.6 Chatting on Internet, Email, Basic of electronic mail
   What is an Electronic mail
   Email addressing
   Mailbox: Inbox and outbox
   Viewing an email
   Sending an Email
   Saving mails
   Sending same mail to various users

5.7 Document handling
   Sending soft copy as attachment
   Enclosures to email
   Sending a Portion of document as email

Reference Books

Assignments: Student may be asked to do assignments
Relational Database Management System

Paper II

UNIT I

Introduction to Database Management System
1. Why Database, Characteristics of Data in Database
2. DBMS, Types of DBMS
3. What is a database, Advantage of DBMS?
4. Database Architecture and Modeling
   4.1 Conceptual, Physical and Logical database models.
   4.2 Role of DBA, Database Design.
5. Relational DBMS
   5.1 RDBMS Terminologies
   5.2 Relational Data Integrity (Entity Integrity and Referential Integrity).
   5.3 Relational Data Manipulation
   5.4 Codd's Twelve Rules.

UNIT II

Database Normalization
1. Keys, Relationships
2. What is Normalization, Need for Normalization.
3. First Normal Form
5. Second Normal Form.
6. Third Normal Form.
7. BCNF (Boyce-Codd Normal Form).
8. Fourth Normal Form.
9. Fifth Normal Form, Domain Key Normal Form

UNIT III

Entity Relationship Model, Relational Algebra, Relational calculus
1. Introduction and Components of ER model.
2. ER Modeling Symbols.
3. Super class and Sub Class Types.
4. Attribute Inheritance.
5. Specialization, Generalization, Categorization.
6. Relational Algebra
   1. Relational Algebraic operations
   2. like Select, Project
   3. Set operations (union, intersection, difference, Cartesian product).
   4. Different types of joins (Equi, Theta, Natural, Outer).
7. Relational Calculus, Tuple Relational Calculus.

UNIT IV

Introduction to SQL (Structured Query language)
1. Introduction, History of SQL, Characteristics and Advantages of SQL
2. Types of SQL (Interactive, Embedded SQL).
3. SQL Data Types and literals
4. Types of SQL Commands (Data Definition Language, Data Manipulation Language, Data Control Language)
5. SQL operators and their precedence.
6. Creation of table views and indexes with Integrity Constraints.
7. Alter Table command (Add, Modify, Drop option).
8. Insert, Update, and Delete, Drop operations.
9. Queries and Sub Queries (SQL constructs SELECT...FROM WHERE ....group BY...HAVING....ORDER BY.....GROUP BY)
10. Aggregate, Arithmetic, Character, Date Functions.
12. Sequences and using of Sequence on Table, Synonyms.
15. Procedures, Functions.

UNIT V Backup and Recovery
1. Database Backups, Why to plan Backups?
2. Hardware Protection and Redundancy.
3. Transaction Logs.
Multimedia System
Paper IV

UNIT I: Adobe Photoshop

Introduction to Multimedia and Photoshop

1. What is multimedia, text, graphics, Animation, Audio, Images, Video
2. Applications of Multimedia in Education, entertainment, marketing.
3. Getting started with Photoshop
4. Introduction to Photoshop and Image Ready
5. Uses of different types of objects
6. Optimizing Photoshop Projects
   6.1 How to build a contact sheet
   6.2 Use of file Browser, Multiple Views.
7. Selection Techniques
   7.1 Selection of Geometric Areas, color Range
   7.2 Select Areas using quick mask, paths
   7.3 Modification, Save and Load of Selections.
8. Converting Files
   8.1 Save files in other formats.
   8.2 Move files from Mac to windows.
   8.3 Building of GIF files for the web.
   8.4 Build JPEG files for the web.
9. Working with Tone
   9.1 Measuring and Comparing Pixel Values.
   9.2 Optimizing the tonal range
   9.3 Use of Dodge, Burn and Sponge Tools.
   9.4 Sharpening of Images

UNIT II: Adobe Photoshop

Drawing, Image Editing Building Web Files and Special Effects of Photoshop

1. Working with color
   1.1 Work with Color Variations.
   1.2 Global Color corrections.
   1.3 Subtle color changes.
   1.4 Build Duotones, Tritones, and Quadtones for the web.
2. Image Editing Basics
   2.1 Resize, Crop, Rotate of an Image
   2.2 Adding of Canvas, Silhouette an image.
3. Drawing Painting and filling with color.
4. Using Types
   4.1 Add Type to an image, Create 3D Text.
   4.2 Create typographical Style Sheets, filtered text effects.
   4.3 Build Filtered Text, wrapping of text.
5. Using Paths like (Straight — Edge Path, curved Path, Stroke Paths, and Clipping Paths).
6. Working With Layers
   6.1 Creation, Moving and Linking of layers.
   6.2 Group layers, creation of Layer sets.
   6.3 Transformation and adjustment of layers.
   6.4 Add a layer Mask, merging and Flatten of Layers.
7. Building Web Files
   7.1 Preview files in Browsers and Platforms.
   7.2 Slice Images for the Web, Build Image maps.
   7.3 Filter Based GIF Animations.
   7.4 Building of JavaScript Rollovers and Web Gallery.
8. Special Effects Like (Blending, Glow effect, Lighting effects, Radial Blur, Adding Texture).
UNIT III Corel Draw

Introduction to Corel Draw and Basic Drawing

1. Introduction to Corel draw.
2. Corel Draw Terminology
3. Creating Artistic Text
4. Working with Shapes and Curves
5. Controlling the Corel Draw Page Environment
6. Setting Up Page Layout
7. Defining Outlines, Mixing up with Fills
8. Drawing and Editing FreeHand Curves, Bezier Curves

UNIT IV Corel Draw

Working With Images and World Wide Web

1. Working with Bitmap Images.
2. Lenses and Power Clips.
5. Designing with Paragraph Text.
8. From CorelDraw to the World Wide Web
   8.1 Driving into Photo paint
   8.2 Painting Text, Bitmap
   8.3 Working with Objects, Bitmap

UNIT V Ms-Flash

Introduction to Flash

1. Working with Flash ,Working with Graphics , Working with symbols
2. Embedding In HTML.
3. Building Graphic Elements for a Flash Project
4. Basic animation, Animation in Flash ,Types of Animation
5. Shape tweening , staggering animation effect, Working in the timeline
6. Animation Review Break apart and distribute, Intro to Motion Guide.
7. Sound in Flash
8. Video in Flash, Visual Elements in Flash
9. Adding Multimedia to Flash Projects
10. Types of Interactivity
11. Active Learning
12. Action Script in Flash ,Components in Flash

Reference Books
5. Kogent Solutions, "Corel draw ", Willey Publications

Assignments: Student may be asked to do assignments
HTML/DHTML/JAVA SCRIPT/BSCRIPT

Paper III

UNIT I
INTRODUCTION TO HTML

1. Hyper Text Markup Language (HTML) HTML Tags, Paired Tags
2. Information Files Creation
   2.1 Web Server, Web Client /Browser
   2.2 Understanding how a Browser communicates with a Web Server
3. Commonly Used Html Commands
   3.1 The structure of an HTML program
   3.2 Document Head
   3.3 Document Body
4. Titles And Footers
5. Text Formatting
   5.1 Paragraph breaks
   5.2 Line Breaks
6. Emphasizing Material In a Web Page
   6.1 Heading Styles
   6.2 Drawing Lines
7. Text Styles (Bold, Italics, Underline),
   7.1 Other Text effects (Centering Text, Images etc)
   7.2 Spacing (Indenting Text)
8. Lists
   8.1 Types of Lists
   8.2 Unordered lists (Bullets) Ordered Lists (Numbering), Definition Lists.
9. Adding Graphics to HTML Documents
   9.1 Using the Border attribute
   9.2 Using the WIDTH and HEIGHT attribute. 9.3 Using the ALIGN, ALT

UNIT II
USE of TABLES, FRAMESETS, FORMS and HYPERLINKS

1. TABLES
   1.1 Introduction
   1.2 Header, Data rows, the caption Tag.
   1.3 Using the WIDTH and BORDER attribute.
   1.4 Using the CELLPADDING attribute.
   1.5 Using the CELLSPACING attribute. 1.6 Using the BGCOLOR attribute.
   1.7 Using the COLSPAN and ROWSPAN attributes.
2. Linking Documents
   2.1 Links
      External Document References
      Internal Document References
   2.2 Images as Hyperlinks
      Image Maps
3. FRAMES
   3.1 Introduction to Frames
   3.2 The <FRAMESET> tag
   3.3 The <FRAME> tag
   3.4 Targeting Named Frames
4. Use of Forms
   4.1 The Form Object
   4.2 The Form Objects Methods
Practical: More stress is on practical. Allow the students to prepare Projects based on basic HTML.

UNIT III
DYNAMIC HTML
1. Cascading Style Sheets
   1.1 Font attributes
   1.2 Color and Background attributes
   1.3 Text attributes, border attributes, Margin Related Attributes.
   1.4 List Attributes.
2. CLASS
   2.1 Using the <Span> ...</Span> TAG
   2.2 External Style Sheets
3. Working with JavaScript style Sheets [JSSS]
4. Using the <DIV> </DIV> TAG.....

UNIT IV JAVA SCRIPT
1. Introduction To Java Script
   1.1 Advantages of JavaScript
   1.2 Limitations of JavaScript
   1.3 Differentiate between JavaScript and Java
   1.4 Writing JavaScript into HTML
2. Building up JavaScript into HTML
   2.1 Basic Programming Techniques
   2.2 Data Types and Literal.
   2.3 Type casting
   2.4 Creating and incorporating variables in a Script.
   2.5 The JavaScript Array, the Elements of an Array.
   2.6 The JavaScript array and its length property.
3. Operators and Expressions in JavaScript
   3.1 Arithmetic, Logical, Comparison, string, Assignment operator.
4. JavaScript Programming Constructs
   4.1 Conditional checking If — then — else
   4.2 Super Controlled — Endless Loops (For loop)
5. Functions In JavaScript
   5.1 Built — in — Functions.
   5.2 User Defined Functions.
6. JavaScript Style Sheets. [JSSS]

UNIT V
VB SCRIPT
1. Introduction to VB Script
   1.1. Advantages of VBScript.
   1.2 Limitations of VBScript.
   1.3 Differentiate between VBScript and Visual Basics.
   1.4 Writing VBScript into HTML.
2. Basic Programming Elements
   2.1 Variable
   2.2 Data Types like Integer, String, Date, Boolean, Currency, Object, Variant Variables
   2.3 Explicit and Implicit Declarations In VBScript.
   2.4 Constants, Arrays
   2.5 Different types of Operators VBScript.
3. Understanding VBScript Control Structures
3.1 What is a Control Structure?
3.2 Types of Control Structure
   a) Conditional Logic, Looping Logic, Branching Logic
3.3 Control Structure Examples.

4. Functions in VBScript
   4.1 Built In Functions (Math, Date, String)
   4.2 User defined Functions.

Reference Books
1. Young, "Internet Complete Reference", Tata Mc Graw Hill.
4. Ramesh Bangia, "Internet and Web designing", Firewall Media.

Assignments: Student may be asked to do assignments
UNIT I:
1.1 Installing and Configuring PHP
1.2 Installing PHP Files on Windows
1.3 php.ini Basics
1.4 The Basics of PHP Scripts
1.5 Basic Language Element
1.6 The Building Blocks of PHP
1.7 Variables
1.8 Data Types
1.9 Operators and Expressions
1.10 Constants

UNIT II:
2.1 Flow Control Functions in PHP
2.2 Switching Flow
2.3 Loops
2.4 Code Blocks and Browser Output
2.5 What is a Function
2.6 Calling Function
2.7 Defining a Function
2.8 Returning Values from User-Defined Functions. 2.9 Variable Scope

UNIT III:
3.1 Working with Strings
3.2 Formatting Strings with PHP
3.3 Working with Dates and Times
3.4 Using Date and Time Functions in PHP
3.5 Working with User Sessions
3.6 Session Function Overview
3.7 Starting a Session
3.8 Working with Session Variables
3.9 Destroying Sessions and Unsetting Variables.

UNIT IV:
4.1 Working with Forms
4.2 Predefined Variables
4.3 Creating a Simple Input Form
4.4 Accessing Form Input with User-Defined Arrays
4.5 Combining HTML and PHP Code on a Single Page
4.6 Using Hidden Fields to Save State
4.7 Redirecting the User
4.8 Including Files with include()
4.9 Include once ()

UNIT V:
5.1 Connecting to MySQL with PHP
5.2 Working with MySQL Data
5.3 Working with Files
5.4 Creating and Deleting Files
5.5 Opening a File for Writing, Reading, or Appending
5.6 Reading from Files
5.7 Writing or Appending to a File.

Reference Books :-
3. Ed Lecky Thomsons & others "Professional PHPS" Wlox publications
5. Vaswani, "XHL and PHP" Peaseen

Assignment: Students may ask to do assignment
ASP.NET
Paper VI

1. Introduction
   1.1 The .NET Framework
   1.2 Common Language Runtime
      1.2.1 Intermediate Language
      1.2.2 Execution 1.2.3 Processing 1.2.4 Assemblies
   1.3 .NET Framework Classes
   1.4 ASP.NET Languages

2. ASP.NET Pages
   2.1 Introduction to ASP.NET Pages
   2.2 Code Declaration block
   2.3 Code Render Blocks
   2.4 ASP.NET Syntax
   2.5 ASP.NET Page Directives
   2.6 ASP.NET Page Life Cycle

3. ASP.NET Language
   3.1 Variables
      3.1.1 Variable Types
      3.1.2 Declaring Variables
      3.1.3 Naming Variables
      3.1.4 Initializing and storing values in variables.
   3.2 Arrays
   3.3 Operators
      3.3.1 Various types of operators
      3.3.2 Operator precedence
   3.4 Conditional Logic
      3.4.1 If Else statements
      3.4.2 Switch and Select statement
      3.4.3 Loops
         3.4.3.1 While
         3.4.3.2 Do - while
         3.4.3.3 For next
   3.5 Branching Logic
      3.5.1.1 Subroutines
      3.5.1.2 Functions
      3.5.1.3 Parameters
   3.6 Break and continue statements
   3.7 Classes
   3.8 Throwing and catching exceptions

4. ASP.NET Controls
   4.1 Introduction to Web Forms
   4.2 Sever Controls
   4.3 Control Events
   4.4 HTML Server Controls
   4.5 Validation Controls
      4.5.1 Customising Validation Controls
      4.5.2 Error Messages
      4.5.3 Displaying Validation Summary

5. ADO.NET
   5.1 Introduction to ADO.NET
   5.2 Managed providers 5.2.1 Connection 5.2.2 Command 5.2.3 Data Reader
5.3 Dataset Object
   5.3.1 Data Adapter
   5.3.2 DataTable
   5.3.3 DataView
5.4 Data Binding Controls
   5.4.1 Repeater
   5.4.2 DataList
   5.4.3 DataGrid

Reference:
1. Chris Villam, John Hauftuam Cris Hill, David Sussman, "Beginning ASP.NET"