Semester	Paper	Subject	Hrs.	Credits	IA	ES	Total
FIRST YEAR							
SEMESTER I	I	Computer Fundamentals & MS OFFICE **(OR : 2015-2016 batch only)**	4	3	25	75	100
		Computer Fundamentals and Photoshop **(NR : 2016-2017 onwards)**					
		Computer Fundamentals & MS OFFICE Lab **(OR : 2015-2016 batch only)**	2	2	0	50	50
		Photo Shop Lab **(NR : 2016-2017 onwards)**					
SEMESTER II	II	Programming in C	4	3	25	75	100
		Programming in C Lab	2	2	0	50	50
SECOND YEAR							
SEMESTER III	III	Object Oriented Programming Using Java	4	3	25	75	100
		Object Oriented Programming Using Java Lab	2	2	0	50	50
SEMESTER IV	IV	Data Structures	4	3	25	75	100
		Data Structures using Java Lab	2	2	0	50	50
THIRD YEAR							
SEMESTER V	V	DBMS	3	3	25	75	100
		DBMS Lab	2	2	0	50	50
	VI	Software Engineering	3	3	25	75	100
		Software Engineering Lab	2	2	0	50	50
	VII (A/B/C)	**Elective-I**					
		A. Operating Systems	3	3	25	75	100
		Operating Systems Lab	3	2	0	50	50
		B. Computer Networks	3	3	25	75	100
		Computer Networks Lab	3	2	0	50	50
		C. Web Technologies	3	3	25	75	100
		Web Technologies Lab	3	2	0	50	50
SEMESTER	VIII Cluster –A-	**Elective-II(Cluster A)**					
		A1.Foundations of Data Science	3	3	25	75	100
		Foundations of Data Science Lab (through R)	3	2	0	50	50
		A2.Big Data Technology	3	3	25	75	100
		Big Data Technology Lab	3	2	0	50	50

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III YEAR - VI SEMESTER

Paper-VII : Elective-C

Web Technologies

Course Objective

To provide knowledge on web architecture, web services, client side and server side scripting technologies to focus on the development of web-based information systems and web services.

To provide skills to design interactive and dynamic web sites.

Course Outcome

1. To understand the web architecture and web services.
2. To practice latest web technologies and tools by conducting experiments.
3. To design interactive web pages using HTML and Style sheets.
4. To study the framework and building blocks of .NET Integrated Development Environment.
5. To provide solutions by identifying and formulating IT related problems.

UNIT – I

HTML: Basic HTML, Document body, Text, Hyper links, adding more formatting, Lists, Tables using images. More HTML: Multimedia objects, Frames, Forms towards interactive, HTML document heading detail

UNIT – II

Cascading Style Sheets: Introduction, using Styles, simple examples, your own styles, properties and values in styles, style sheet, formatting blocks of information, layers.

UNIT – III

Introduction to JavaScript: What is DHTML, JavaScript, basics, variables, string manipulations, mathematical functions, statements, operators, arrays, functions. Objects in JavaScript: Data and objects in JavaScript, regular expressions, exception handling

UNIT – IV

DHTML with JavaScript: Data validation, opening a new window, messages and confirmations, the status bar, different frames, rollover buttons, moving images,

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UNIT – V

XML: defining data for web applications, basic XML, document type definition, presenting XML, document object model. Web Services

References:

1. Harvey M. Deitel and Paul J. Deitel, **"Internet & World Wide Web How to Program", 4/e,** Pearson Education.

2. Uttam Kumar Roy, Web Technologies from Oxford University Press

Student Activities:

1. Prepare a web site for your college

2. Prepare your personal website

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Paper-VII : Elective-C

Web Technologies Lab

1. Write a HTML program illustrating text formatting.
2**.** Illustrate font variations in your HTML code.
3. Prepare a sample code to illustrate links between different sections of the page.
4. Create a simple HTML program to illustrate three types of lists.
5. Embed a calendar object in your web page.
6. Create an applet that accepts two numbers and perform all the arithmetic operations on them.
7. Create nested table to store your curriculum.
8. Create a form that accepts the information from the subscriber of a mailing system.
9. Design the page as follows:
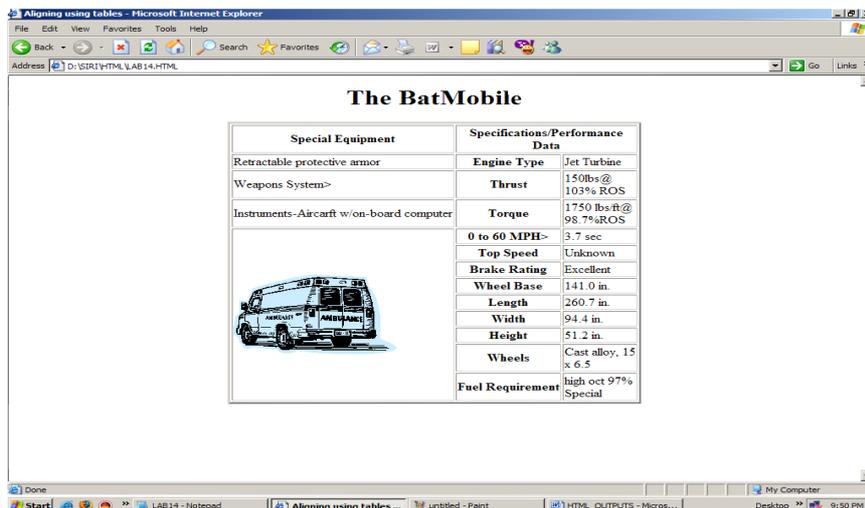
10. Using "table" tag, align the images as follows:

11. Divide the web page as follows:
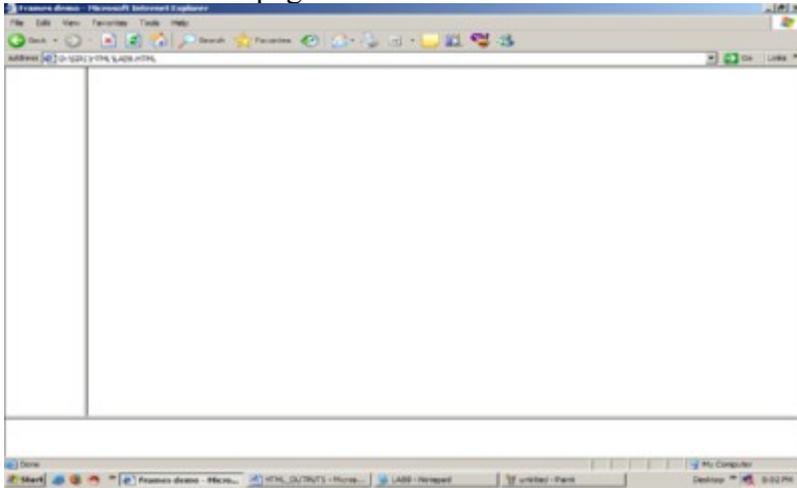
12. Design the page as follows:
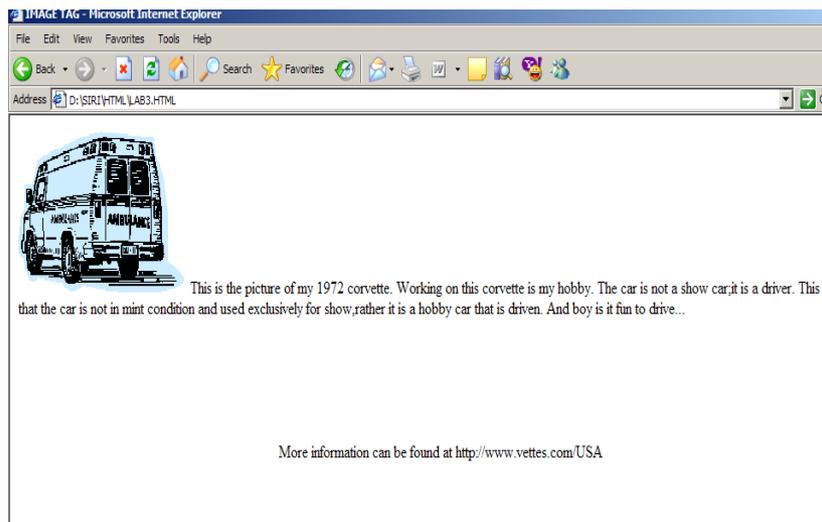
13. Illustrate the horizontal rulers in your page.

14. Create a help file as follows:
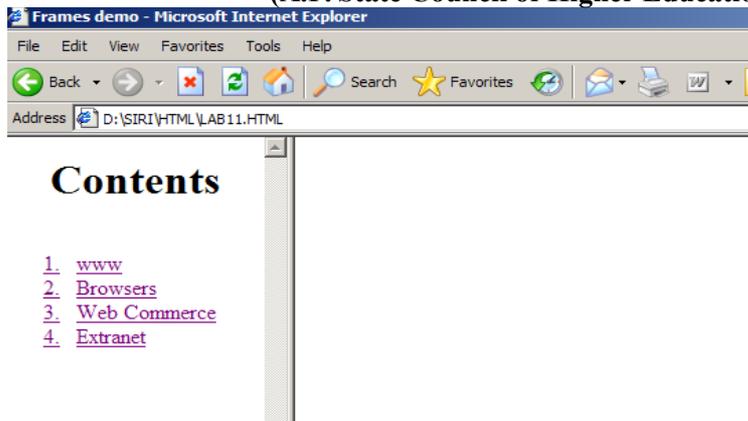
15. Create a form using form tags(assume the form and fields).

16. Create a webpage containing your biodata(assume the form and fields).

17. Write a html program including style sheets.

18. Write a html program to layers of information in web page.

19. Create a static webpage.

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III YEAR - VI SEMESTER
(Cluster C) Paper-VIII : Elective –C-1
Paper-VIII : PHP & MySql, Wordpress

Course Objectives

To introduce the concept of PHP and to give basic Knowledge of PHP. Learn about PHP Syntax., Arrays, PHP Loops, PHP and MySQL connectivity, PHP form validation, PHP form handling. Overview of MySQL and PHPMyAdmin, Understand basic concepts of how a database stores information via tables, Understanding of SQL syntax used with MySQL, Learn how to retrieve and manipulate data from one or more tables, Know how to filter data based upon multiple conditions, Updating and inserting data into existing tables, Learning how the relationships between tables will affect the SQL, The advantages of store procedures with storing data using variables and functions, How SQL can be used with programming languages like PHP to create dynamic websites for visitors, Review of some sample PHP projects interacting with MySQL.

Course Outcomes

After completing this course satisfactorily, a student will be able to:

1. Introduction to web development with PHP
2. How to code a PHP application
3. Introduction to relational databases and MySQL
4. How to use PHP with a MySQL database
5. How to use the MVC pattern to organize your code
6. How to test and debug a PHP application
7. How to work with form data
8. How to code control statements
9. How to work with strings and numbers
10. How to work with dates
11. How to create and use arrays
12. How to work with cookies and sessions
13. How to create and use functions
14. How to use regular expressions, handle exceptions, and validate data

UNIT I

Installing and Configuring MySQL: Current and Future Versions of MySQl, How to Get MySQL, Installing MySQL on Linux, Windows, Trouble Shooting your Installation, Basic Security Guidelines, Introducing MySQL Privilege System, Working with User Privileges. **Installing and Configuring Apache:** Current and future versions of Apache, Choosing the Appropriate Installation Method, Installing Apache on Linux, Windows, Apache Configuration File Structure, Apache Log Files, Apache Related Commands, Trouble Shooting. **Installing and Configuring PHP:** Building PHP on Linux with Apache, Windows, php.ini.Basics, The Basics of PHP scripts. **The Building blocks of PHP:** Variables, Data Types, Operators and Expressions, Constants. Flow Control Functions in PHP: Switching Flow, Loops, Code Blocks and Browser Output.

UNIT II
Working with Functions: What is function?, Calling functions, Defining Functions, Returning the values from User-Defined Functions, Variable Scope, Saving state between Function calls with the static statement, more about arguments. **Working with Arrays:** What are Arrays?, Creating Arrays, Some Array-Related Functions.
Working with Objects: Creating Objects, Object Instance
Working with Strings, Dates and Time: Formatting strings with PHP, Investigating Strings with PHP, Manipulating Strings with PHP, Using Date and Time Functions in PHP.

UNIT III
Working with Forms: Creating Forms, Accessing Form Input with User defined Arrays, Combining HTML and PHP code on a single Page, Using Hidden Fields to save state, Redirecting the user, Sending Mail on Form Submission, Working with File Uploads.
Working with Cookies and User Sessions: Introducing Cookies, Setting a Cookie with PHP, Session Function Overview, Starting a Session, Working with session variables, passing session IDs in the Query String, Destroying Sessions and Unsetting Variables, Using Sessions in an Environment with Registered Users.
Working with Files and Directories: Including Files with inclue(), Validating Files, Creating and Deleting Files, Opening a File for Writing, Reading or Appending, Reading from Files, Writing or Appending to a File, Working with Directories, Open Pipes to and from Process Using popen(), Running Commands with exec(), Running Commands with system() or passthru().
Working with Images: Understanding the Image-Creation Process, Necessary Modifications to PHP, Drawing a New Image, Getting Fancy with Pie Charts, Modifying Existing Images, Image Creation from User Input.

UNIT IV
Introduction to MySQL and Interfacing with Databases through PHP
Understanding the database design process: The Importance of Good Database Design, Types of Table Relationships, Understanding Normalization. **Learning basic SQL Commands:** Learning the MySQL Data types, Learning the Table Creation Syntax, Using Insert Command, Using SELECT Command, Using WHERE in your Queries, Selecting from Multiple Tables, Using the UPDATE command to modify records, Using RELACE Command, Using the DELETE Command, Frequently used string functions in MySQL, Using Date and Time Functions in MySQL.
Using Transaction and stored procedures in MySQL: What is Transaction?, What are Stored Procedures? Interacting with MySQL using PHP: MySQL Versus MySQLi Functions, Connecting to MySQL with PHP, Working with MySQL Data.
Creating an Online Address Book: Planning and Creating Database Tables, Creating Menu, Creating Record Addition Mechanism, Viewing Records, Creating the Record Deletion Mechanism, Adding Sub-entities to a Record.

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UNIT V
Word press: Introduction to word press, servers like wamp, bitnami e.tc, installing and configuring word press, understanding admin panel, working with posts and pages, using editor, text formatting with shortcuts, working with media-Adding, editing, deleting media elements, working with widgets, menus. Working with themes-parent and child themes, using featured images, configuring settings, user and user roles and profiles, adding external links, extending word press with plug-ins. Customizing the site, changing the appearance of site using css .

REFERENCE BOOKS
1. Julie C. Meloni, PHP MySQL and Apache, SAMS Teach yourself, Pearson Education (2007).
2. Xue Bai Michael Ekedahl, The web warrior guide to Web Programming, Thomson (2006).
Student activity:
1. Creation of a webpage using wordpress
2. Creation of student database of the college

PHP, MySql & Wordpress LAB
MySQL Lab Cycle
Cycle -1
An Enterprise wishes to maintain the details about his suppliers and other corresponding details. For that he uses the following details.
Suppliers (sid: Integer, sname: string, address: string)
Parts (pid: Integer, pname: string, color: string)
Catalog (sid: integer, pid: integer, cost: real)
The catalog relation lists the prices charged for parts by suppliers.
Write the following queries in SQL:
1. Find the pnames of parts for which there is some supplier.
2. Find the snames of suppliers who supply every part.
3. Find the snames of supplier who supply every red part.
4. Find the pnames of parts supplied by London Supplier abd by no one else.
5. Find the sid's of suppliers who charge more for some part than the average cost of that part.
6. For each part, find the sname of the supplier who charges the most for that part.
7. Find the sid's of suppliers who supply only red parts.
8. Find the sid's of suppliers who supply a red and a green part.
9. Find the sid's of suppliers who supply a red or green part.
10. Find the total amount has to pay for that supper by part located from London.

Cycle – 2
An organisation wishes to maintain the status about the working hours made by his employees. For that he uses the following tables.
Emp (eid: integer, ename: string, age: integer, salary: real)
Works (eid: integer, did: integer, pct_time: integer)
Dept (did: integer, budget: real, managerid: integer)
An employee can work in more than one department; the pct_time field of the works relation shows the percentage of time that a given employee works in a given department.

Resolve the following queries.
1. Print the names and ages of each employee who works in both Hardware and Software departments.
2. For each department with more than 20 full time equivalent employees (i.e., where the part-time and full-time employees add up to at least that many full-time employees), print the did's together with the number of employees that work in that department.
3. Print the name of each employee whose salary exceeds the budget of all of the departments that he or she work in.
4. Find the managerid's of managers who manage only departments with budgets greater than 1,000,000.
5. Find the enames of managers who manage the departments with largest budget.
6. If a manager manages more than one department, he or she controls the sum of all the budgets for those departments. Find the managerid's of managers who control more than 5,000,000.
7. Find the managerid's of managers who control the highest amount.
8. Find the average manager salary.

PHP Lab Cycle
1. Write a PHP program to Display "Hello"
2. Write a PHP Program to display the today's date.
3. Write a PHP Program to read the employee details.
4. Write a PHP Program to display the
5. Write a PHP program to prepare the student marks list.
6. Write a PHP program to generate the multiplication of two matrices.
7. Write a PHP Application to perform demonstrate the college website.
8. Write a PHP application to add new Rows in a Table.
9. Write a PHP application to modify the Rows in a Table.
10. Write a PHP application to delete the Rows from a Table.
11. Write a PHP application to fetch the Rows in a Table.
12. Develop an PHP application to make following Operations
    i.   Registration of Users.
    ii. Insert the details of the Users.
    iii. Modify the Details.
    iv. Transaction Maintenance.
         a) No of times Logged in
         b) Time Spent on each login.
         c) Restrict the user for three trials only.
         d) Delete the user if he spent more than 100 Hrs of transaction.

Wordpress Lab
1. Installation and configuration of word press.
2. Create a site and add a theme to it.

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III YEAR - VI SEMESTER
(Cluster C) Paper-VIII: Elective –C-2

Paper-VIII: Advanced Java Script
JQUERY /AJAX / JSON / Angular JS

Course Objective:
To impart knowledge in designing a webpage in a structured way by using advanced java script ie., using different scripting languages.

Course Outcomes
On completing the subject, students will be able to: create a dynamic website using advanced features of JavaScript and create a website with good and attractive design

UNIT I
JQuery – Basics: String, Numbers, Boolean, Objects, Arrays, Functions, Arguments, Scope, Built-in Functions. jQuery – Selectors: CSS Element Selector, CSS Element ID Selector, CSS Element Class Selector, CSS Universal Selector, Multiple Elements E, F, G Selector, Callback Functions. jQuery – DOM Attributes: Get Attribute Value, Set Attribute Value. jQuery – DOM Traversing : Find Elements by index, Filtering out Elements, Locating Descendent Elements, JQuery DOM Traversing Methods.

UNIT II
jQuery – CSS Methods : Apply CSS Properties, Apply Multiple CSS Properties, Setting Element Width & Height, JQuery CSS Methods. jQuery – DOM Manipulation Methods: Content Manipulation, DOM Element Replacement, Removing DOM Elements, Inserting DOM elements, DOM Manipulation Methods. jQuery – Events Handling: Binding event handlers, Removing event handlers, Event Types, The Event Object, The Event Attributes. jQuery – Effects: JQuery Effect Methods, jQuery Hide and Show, jQuery Toggle, jQuery Slide – slideDown, slideUp, slideToggle, jQuery Fade – fadeIn, fadeOut, fadeTo, jQuery Custom Animations

UNIT III
Intro to **jQuery UI**, Need of jQuery UI in real web sites, Downloading jQuery UI, Importing jQuery UI, Draggable, Droppable, Resizable, Selectable, Sortable, Accordion, Auto Complete, Button Setϖ, Date Picker, Dialog, Menu, Progress Bar, Slider, Spinner, Tabs, Tooltip, Color Animation, Easing Effects, addClass, removeClass, Effects, jQuery UI themes, Customizing jQuery UI widgets / plug-ins, jQuery UI with CDN, Consuming jQuery Plug-ins from 3rd party web sites jQuery Validations, Intro to jQuery validation plug-in, Using jQuery validation plug-in, Regular expressions.

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UNIT IV
Intro to AJAX, Need of AJAX in real web sites, Getting database data using jQuery-AJAX, Inserting, Updating, Deleting database data using jQuery-AJAX Grid Development using jQuery-AJAX

Intro to **JSON** JSON syntax, Need of JSON in real web sites, JSON object, JSON array, Complex JSON objects, Reading JSON objects using jQuery.

UNIT V
Intro to AngularJS,   Need of AngularJS in real web sites, Downloading AngularJS, AngularJS first example, AngularJS built-in directives,   AngularJS expressions, AngularJS modules,   AngularJS controllers, AngularJS scope   AngularJS dependency injection AngularJS, bootstrapping AngularJS data bindings, AngularJS $watch, AngularJS filters, AngularJS events, AngularJS AJAX,   Ng-repeat, AngularJS with json arrays,   AngularJS registration form and login form, AngularJS CRUD operations, AngularJS Animations, AngularJS validationsϖ   AngularJS $q, AngularJS custom values, AngularJS custom factories, AngularJS custom services, AngularJS custom directives, AngularJS custom providers, AngularJS Routing, AngularUI Routing.

Reference Books
1. jQuery UI 1.8: The User Interface Library for jQuery by Dan Wellman
2. jQuery Fundamentals by Rebecca Murphey
3. Ajax: The Complete Reference by Thomas A. Powell
4. Pro AngularJS by Adam Freeman Kindle Edition

Student Activity:
1. Creation of website for a small scale company
2. Creation of website for a student database

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Advanced Java Script LAB
JQUERY /AJAX / JSON / Angular JS

1. Using jQuery find all textareas, and makes a border. Then adds all paragraphs to the jQuery object to set their borders red.
2. Using jQuery add the class "w3r_font_color" and w3r_background to the last paragraph element.
3. Using jQuery add a new class to an element that already has a class.
4. Using jQuery insert some HTML after all paragraphs.
5. Using jQuery insert a DOM element after all paragraphs.
6. Convert three headers and content panels into an accordion. Initialize the accordion and specify the animate option
7. Convert three headers and content panels into an accordion. Initialize the accordion and specify the height.
8. Create a pre-populated list of values and delay in milliseconds between a keystroke occurs and a search is performed.
9. Initialize the button and specify the disable option.
10. Initialize the button and specify an icon on the button.
11. Initialize the button and do not show the label.
12. Create a simple jQuery UI Datepicker. Now pick a date and store it in a textbox.
13. Initialize the datepicker and specify a text to display for the week of the year column heading.