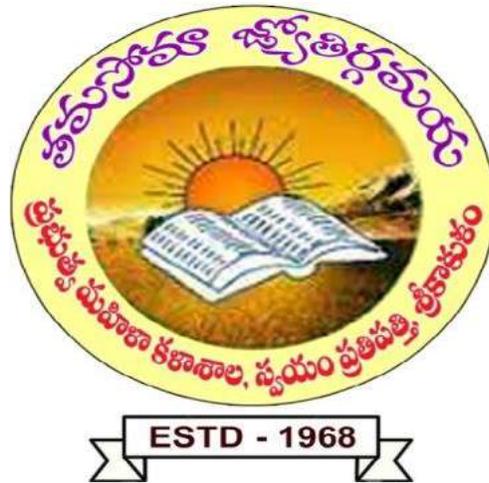


**GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS)  
SRIKAKULAM**

**DEPARTMENT OF  
COMPUTER SCIENCE & APPLICATIONS**



**BOARD OF STUDIES  
WEB ENABLED TECHNOLOGIES SYLLABUS  
2022-23**

# Government College for Women(Autonomous)Srikakulam

Reaccredited by NAAC with 'A' Grade during 3<sup>rd</sup> Cycle (CGPA 3.09)

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From  
Dr.K.Sreeramulu,M.Com.,Ph.D.  
Principal  
Govt. College for Women (A)  
Srikakulam

## **BOARD OF STUDIES MEETING AGENDA FOR 2021- 22 & 2022 – 23**

- 1) Adoption of Choice Based Credit System (CBCS) for I, II , III ,IV,V end Semesters.
- 2) Approve and introduce the newly formed syllabi for I,II,III,IV,V,VI Course or subjects.
- 3) Ratification and introduction of semester mode pattern of Examination, for all semesters.
- 4) Approve and ratify value added certificate courses.
- 5) Approval and ratification of Skill Based Programmes
- 6) Approval and ratification of Life Skill courses and skill development Courses for 1<sup>st</sup> and 2<sup>nd</sup> Year Students.
- 7) Approve and ratify community Service Projects and Internships at end of II, IV,V, VI Semesters.
- 8) Approve and ratify Model Question Paper, Blue Print etc.in which 25 marks Internal Assessment and 75 marks External Assessment
- 9) Approve and ratify model question paper, for LSC and SDC for 50 marks external pattern
- 10) Approval of List of Examiners
- 11) Approval of innovative teaching , learning and evaluation Techniques
- 12) Approval of Student Seminars, Workshops, Field Trips – student centric activities.
- 13) Approval of Students Projects and Students Research.
- 14) Approval of ICT mode of teaching.
- 15) Approval of encouragement to join students in JKC
- 16) Approval of encouragement for students to join in NSS and different extension activities.
- 17) Any other matter

Signature of Principal

**Department of Computer Science & Applications**  
**Government College for Women(Autonomous)Srikakulam**

Reaccredited by NAAC with 'A' Grade during 3<sup>rd</sup> Cycle (CGPA 3.09)

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**BOS Meeting 20.10.2022**

The Board of Studies meeting is held on 20.10.2022 Time: 10.00 am in the Department of Computer Science & Applications, Government College for Women (Autonomous) , Srikakulam for the Autonomous students i.e., 2020 – 21 under the Chairmanship of Smt.I.Srilakshmi, Head of the Department of Computer Science of this college as per the UGC Letter No.F22-1/2017 (AC) Date: 28.11.2018 and Dr.B.R.Ambekar University , Srikakulam letter, RC.No.BRAU/F J :Autonomous Status 2019 -20 dated 15.03.2019. The following members attended and discussed the various academic matters of the Web Enabled Technolgies Syllabus and its evaluation.

S.No	BOS Committee	Name & Designation
1.	Chair Person	Name : Smt. I.Srilakshmi Designation :Lecturer in Computer Science Address :GCW(A),Srikakulam
2.	Subject Expert (University Nominee)	Name : Dr.A.Mary Sowjanya Designation: Asst.Professor, Dept.of CS&SE Address: Andhra University College of Engineering(A),Vishakhapatnam
3.	Subject Expert (Nominated By Academic Council )	Name : Dr. A. Siva Prasad Designation :Lecturer in Computer Science Address : Govrnment Degree College, Tekkali
4.	Subject Expert (Nominated By Academic Council )	Name : Sri. V. Raghava Swamy Dora Designation :Lecturer in Computer Science Address: Dr.V.S.Krishna College(A),Vishakhapatnam
5.	Member of Industrial	Name : Kum P.VijayaDurga Designation :License Manager Software Asset Management Team Address : Wipro,Hyderabad
6.	Member of Alumni	Name: Kum. M. Gayatri Varshitha Pursuing M.Sc Computer Science Dr.BR. Ambedakar University, Etcherla
7.	Members of Department	1)Smt. G. Suma Latha, Lecturer in Computer Science Government College For Women(A),SKLM  2)Smt. S. Vani Kumari, Lecturer in Computer Applications Government College For Women(A),SKLM  3)Smt. S. Madhavi Latha, Lecturer in Computer Applications Government College For Women(A),SKLM

**GOVT. COLLEGE FOR WOMEN (AUTONOMOUS): SRIKAKULAM**  
**B.Sc. Web Enabled Technologies Structure of Syllabus**  
**Under CBCS w.e.f. 2020-21**

Semester		Subject	Hrs	Credits	IA	ES	Total	
<b>FIRST YEAR</b>								
I	I	Fundamentals of computers, Web & Python - Programming	4	3	25	75	100	
		Python- Programming Lab	2	2	0	50	50	
II	II	Fundamentals of computers, Web & Python - Programming	4	3	25	75	100	
		Python- Programming Lab	2	2	0	50	50	
<b>SECOND YEAR</b>								
III	III	Graphic Designing & Web Designing : Illustrator , Advanced Photoshop & Wordpress	4	3	25	75	100	
		Graphic Designing and web designing Lab	2	2	0	50	50	
IV	IV	Oop's through Java	4	3	25	75	100	
		Java Programming Lab	2	2	0	50	50	
	V	HTML, CSS & Java Script	4	3	25	75	100	
		HTML, CSS & JavaScript Lab	2	2	0	50	50	
<b>THIRD YEAR</b>								
V	6A	Advanced Java Script: JQUERY ,AJAX , JSON	3	3	25	75	100	
		Advanced Java Script: JQUERY ,AJAX , JSON Lab	3	2	0	50	50	
	7A	ReactJS	3	3	25	75	100	
		ReactJS Lab	3	2	0	50	50	
	<b>OR</b>							
	6B	Java Servlets	3	3	25	75	100	
		Java Servlets Lab	3	2	0	50	50	
	7B	Java Server Pages (JSP)	3	3	25	75	100	
		Java Server Pages (JSP) Lab	3	2	0	50	50	

## I YEAR I SEMESTER

Semester	Course Code	Course Title	Hours	Credits
I	C1	Fundamentals of computers, Web & Python - Programming	60	3

### Unit –I

**Introduction to computers:** Definition, Characteristics and limitations of computers - Elements of Computers - Hardware - CPU - Primary and Secondary memory - Input and Output devices. IT enabled services.

Operating System and Windows: Operating Systems: Meaning, Definition, Functions and Types of Operating Systems, Computer Virus, Cryptology. Windows operating system - Desktop, Start menu, Control panel, Windows accessories. Understanding Web Technologies, Difference between Web Applications and Desktop Applications

### Unit - II

**Introduction:** History of Python, Need of Python Programming, Applications Basics of Python Programming Using the REPL(Shell), Running Python Scripts, Variables, Assignment, Keywords, Input-Output, Indentation.

**Types, Operators and Expressions:** Types - Integers, Strings, Booleans; Operators- Arithmetic Operators, Comparison (Relational) Operators, Assignment Operators, Logical Operators, Bitwise Operators, Membership Operators, Identity Operators, Expressions and order of evaluations Control Flow- if, if-elif-else, for, while, break, continue, pass

### Unit - III

#### Built-in Datatypes

Strings, Creating and Storing Strings, Basic String Operations, Accessing Characters in String by Index Number, String Slicing and Joining, String Methods, Formatting Strings, Lists, Creating Lists, Basic List Operations, Indexing and Slicing in Lists, Built-In Functions Used on Lists, List Methods, The del Statement.

Dictionaries, Creating Dictionary, Accessing and Modifying key: value Pairs in Dictionaries, Built-In Functions Used on Dictionaries, Dictionary Methods, The del Statement, Tuples and Sets, Creating Tuples, Basic Tuple Operations, Indexing and Slicing in Tuples, Built-In Functions Used on Tuples, Relation between Tuples and Lists, Relation between Tuples and Dictionaries, Tuple Methods, Using zip() Function, Sets, Set Methods, Traversing of Sets, Frozenset.

## UNIT-IV

Functions - Defining Functions, Calling Functions, Passing Arguments, Keyword Arguments, Default Arguments, Variable-length arguments, Anonymous Functions, Fruitful Functions(Function Returning Values), Scope of the Variables in a Function - Global and Local Variables.

Modules: Creating modules, import statement, from. Import statement, name spacing, Python packages Introduction to PIP, Installing Packages via PIP, Using Python Packages

## Unit - V

Object Oriented Programming OOP in Python: Classes, 'self variable', Methods, Constructor Method, Inheritance, Overriding Methods, Datahiding,

Error and Exceptions: Difference between an error and Exception, Handling Exception, try except block, Raising Exceptions, User Defined Exceptions

## Text Books

1. Python Programming: A Modern Approach, Vamsi Kurama, Pearson
2. Learning Python, Mark Lutz, Orielly

## Reference Books

1. Think Python, Allen Downey, Green Tea Press
2. Core Python Programming, W.Chun, Pearson.
3. Introduction to Python, Kenneth A. Lambert, Cengage

Semester	Course Code	Course Title	Hours	Credits
I	C1-P	Python Programming Lab	30	2

### Python Programming Lab

1. Write a Python program to convert temperatures to and from celsius, fahrenheit.
2. Write a Python program that accepts a word from the user and reverse it
3. Write a Python program to get the Fibonacci series between 0 to 50.
4. Write a Python program which takes two digits m (row) and n (column) as input and generates a two-dimensional array. The element value in the i-th row and j-th column of the array should be  $i*j$ .
5. Write a Python program that accepts a string and calculate the number of digits and letters
6. Write a Python program to check whether an alphabet is a vowel or consonant
7. Write a Python program to calculate the sum and average of n integer numbers
8. Write a Python program to create the multiplication table (from 1 to 10) of a number
9. Write a Python function to find the Max of three numbers.
10. Write a Python function to calculate the factorial of a number (a non-negative integer). The function accepts the number as an argument.
11. Write a Python function that takes a number as a parameter and check the number is prime or not.
12. Write a Python function to check whether a number is perfect or not.
13. Write a Python function that checks whether a passed string is palindrome or not.
14. Write a Python program for sequential search.
15. Write a Python program to sort a list of elements using the selection sort algorithm.

## I YEAR II SEMESTER

Semester	Course Code	Course Title	Hours	Credits
II	C2	<b>Graphic Designing and Web designing</b> <b>(Illustrator Advanced Photoshop &amp; Wordpress)</b>	60	3

### Course Objectives

Images and animations took major important role in creation of good structured web design. It is necessary to know the creation of own images, editing of created images, 2D animation. This paper provides all above to the students.

### Course Outcomes

Upon successful completion of the course, a student will be able to:

1. Develop skills in digital imaging using Photoshop which is useful for webpage design.
2. Acquire skills in creation of logos and emblems with the help of Illustrator.
3. Understand basic principles of Web designing.
4. Setup a domain and hosting account.
5. Create websites with the help of Word press.

### UNIT I

**Introduction to Graphic Design:** Multimedia fundamentals, What is Graphic Design, What is Raster Graphic & Vector Graphic, Uses & Difference between Raster Graphic & Vector Graphic, Media and Types of Media, difference between multimedia and Graphic Designing, Colour formats, Types of Colour Formats for various types of media. Basic Colours & Colour Theory.

**Photoshop:** Getting started with Photoshop, page layout and back ground, Photoshop program window-title bar, menu bar, options bar, image window, image title bar, Status bar, ruler, palettes, tool box, screen modes, saving files, reverting files, closing files.

### UNIT II

**Working with images** - image size and resolution, image editing, color modes & adjustments, back grounds. **Making selections** –lasso tools, sections tools, polygon lasso tool, magnetic lasso tool, magic hand tool, grow and similar commands, moving a portion of image, editing selections, filling a selection, transforming selection, painting, drawing and retouching tools.

**Layers and Filters :** layers, type tool, converting layers, image masking, filters – the filter menu, artistic filter, blur filter, brush store filters, distort filters, noise filters, pixelate filter, lighting effects, difference clouds, sharpen filters, printing.

### **UNIT III**

**Illustrator :** Understanding the GUI of the Illustrator - Understanding Tool Box – Using menus -Drawing Basic Shapes - Drawing with Pencil Tool - Drawing with Pen Tool - Using Brushes - Creating Compound Paths - Working with Color and Strokes - Editing Objects - Layers & Groups- Transparency & Graphic Styles - Transforming & Moving Objects - Basic Text - Blending Shapes& Colors.

### **UNIT IV**

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.

### **UNIT V**

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. Adobe Photoshop Class Room in a Book by Adobe Creative Team.
2. Photoshop: Beginner's Guide for Photoshop - Digital Photography, Photo Editing, Color Grading & Graphic...19 February 2016 by David Maxwell
3. **Xue Bai Michael Ekedahl, The web warrior guide to Web Programming, Thomson (2006).**

### **RECOMMENDED CO-CURRICULAR ACTIVITIES:**

(Co-curricular activities shall not promote copying from textbook or from others work and shall encourage self/independent and group learning)

#### **A. Measurable**

1. Assignments (in writing and doing forms on the aspects of syllabus content and outside the syllabus content. Shall be individual and challenging)
2. Student seminars (on topics of the syllabus and related aspects (individual activity))
3. Quiz (on topics where the content can be compiled by smaller aspects and data (Individuals or groups as teams))

4. Study projects (by very small groups of students on selected local real-time problems pertaining to syllabus or related areas. The individual participation and contribution of students shall be ensured (team activity))

## **B. General**

1. Group Discussion
2. Try to solve MCQ's available online.
3. Others

## **RECOMMENDED CONTINUOUS ASSESSMENT METHODS:**

Some of the following suggested assessment methodologies could be adopted;

1. The oral and written examinations (Scheduled and surprise tests),
2. Closed-book and open-book tests,
3. Problem-solving exercises,
4. Practical assignments and laboratory reports,
5. Observation of practical skills,
6. Individual and group project reports like “Creating a website for your college using Wordpress”
7. Efficient delivery using seminar presentations,
8. Viva voce interviews.
9. Computerized adaptive testing, literature surveys and evaluations,
10. Peers and self-assessment, outputs form individual and collaborative work

Semester	Course Code	Course Title	Hours	Credits
II	C2-P	Graphic designing and web designing lab	30	2

## PHOTOSHOP:

**Commercial Work:** Photo base multi color visiting card – Multi color wedding cards – Paper adds (Photo base) Pomp lets (Photo base) Broachers (Photo base) – Advertisement designing – Pomp lets (Photo base) – Broachers (Photo base).

**Digital Work:** Pass port designing , Maxi Modeling , Digital Modeling - Black and White Photo Color conversation , Marriage album designing.

**Flex Modeling:** Front light board designing , Back light board designing.

## Illustrator:

Cartoon drawing-logo creation – 3D objects creation – move title creation – brush effects based title-filter effects backgrounds.

## WordPress:

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

## II YEAR III SEMESTER

Semester	Course Code	Course Title	Hours	Credits
III	C3	OOP's through JAVA	60	3

### Course Objectives

As the business environment becomes more sophisticated, the software development (software engineering is about managing complexity) is becoming increasingly complex. As of the best programming paradigm which helps to eliminate complexity of large projects, Object Oriented Programming (OOP) has become the predominant technique for writing software in the past decade. Many other important software development techniques are based upon the fundamental ideas captured by object-oriented programming.

### Course Outcomes

At the end of this course student will:

1. Understand the concept and underlying principles of Object-Oriented Programming
2. Understand how object-oriented concepts are incorporated into the Java programming language
3. Develop problem-solving and programming skills using OOP concept
4. Understand the benefits of a well structured program
5. Develop the ability to solve real-world problems through software development in high-level programming language like Java
6. Develop efficient Java applets and applications using OOP concept
7. Become familiar with the fundamentals and acquire programming skills in the Java language.

## UNIT I

### FUNDAMENTALS OF OBJECT – ORIENTED PROGRAMMING :Introduction, Object

Oriented paradigm, Basic Concepts of OOP, Benefits of OOP, Applications of OOP, Java features: **OVERVIEW OF JAVA LANGUAGE:** Introduction, Simple Java program structure, Java tokens, Java Statements, Implementing a Java Program, Java Virtual Machine, Command line arguments. **CONSTANTS, VARIABLES & DATA TYPES:** Introduction, Constants, Variables, Data Types, Declaration of Variables, Giving Value to Variables, Scope of variables, Symbolic Constants, Type casting, Getting Value of Variables, Standard Default values; **OPERATORS & EXPRESSIONS.**

## UNIT II

**DECISION MAKING & BRANCHING:** Introduction, Decision making with if statement, Simple if statement, if. Else statement, Nesting of if. else statements, the else if ladder, the switch statement, the conditional operator. **LOOPING:** Introduction, The While statement, the do-while statement, the for statement, Jumps in loops.

**CLASSES, OBJECTS & METHODS:** Introduction, Defining a class, Adding variables, Adding methods, Creating objects, Accessing class members, Constructors, Method overloading, Static members, Nesting of methods;

## UNIT III

**INHERITANCE:** Extending a class, Overloading methods, Final variables and methods, Final classes, Abstract methods and classes;

**ARRAYS, STRINGS AND VECTORS:** Arrays, One-dimensional arrays, Creating an array, Two – dimensional arrays, Strings, Vectors, Wrapper classes;

**INTERFACES: MULTIPLE INHERITANCE:** Introduction, Defining interfaces, Extending interfaces, Implementing interfaces, Assessing interface variables;

## UNIT IV

**MULTITHREADED PROGRAMMING:** Introduction, Creating Threads, Extending the Threads, Stopping and Blocking a Thread, Lifecycle of a Thread, Using Thread Methods, Thread Exceptions, Thread Priority, Synchronization, Implementing the ‘Runnable’ Interface.

**MANAGING ERRORS AND EXCEPTIONS:** Types of errors : Compile-time errors, Runtime errors, Exceptions, Exception handling, Multiple Catch Statements, Using finally statement,

## UNIT V

**APPLET PROGRAMMING:** local and remote applets, Applets and Applications, Building Applet code, Applet Life cycle: Initialization state, Running state, Idle or stopped state, Dead state, Display state.

**PACKAGES:** Introduction, Java API Packages, Using System Packages, Naming conventions, Creating Packages, Accessing a Package, using a Package.

**MANAGING INPUT/OUTPUT FILES IN JAVA:** Introduction, Concept of Streams, Stream classes, Byte Stream Classes, Input Stream Classes, Output Stream Classes, Character Stream classes: Reader stream classes, Writer Stream classes, Using Streams, Reading and writing files.

## **REFERENCES BOOKS:**

1. E.Balaguruswamy, Programming with JAVA, A primer, 3e, TATA McGraw-Hill Company.
2. John R. Hubbard, Programming with Java, Second Edition, Schaum's outline Series, TATA McGraw-Hill Company.
3. Deitel & Deitel. Java TM: How to Program, PHI (2007)
4. Java Programming: From Problem Analysis to Program Design- D.S Mallik
5. Object Oriented Programming Through Java by P. Radha Krishna, Universities Press (2008)

## **RECOMMENDED CO-CURRICULAR ACTIVITIES:**

(Co-curricular activities shall not promote copying from textbook or from others work and shall encourage self/independent and group learning)

### **C. Measurable**

1. Assignments (in writing and doing forms on the aspects of syllabus content and outside the syllabus content. Shall be individual and challenging)
2. Student seminars (on topics of the syllabus and related aspects (individual activity))
3. Quiz (on topics where the content can be compiled by smaller aspects and data (Individuals or groups as teams))
4. Study projects (by very small groups of students on selected local real-time problems pertaining to syllabus or related areas. The individual participation and contribution of students shall be ensured (team activity))

### **D. General**

1. Group Discussion
2. Try to solve MCQ's available online.
3. Others

## RECOMMENDED CONTINUOUS ASSESSMENT METHODS:

Some of the following suggested assessment methodologies could be adopted;

1. The oral and written examinations (Scheduled and surprise tests),
2. Closed-book and open-book tests,
3. Problem-solving exercises,
4. Practical assignments and laboratory reports,
5. Observation of practical skills,
6. Individual and group project reports.
7. Efficient delivery using seminar presentations,
8. Viva voce interviews.
9. Computerized adaptive testing, literature surveys and evaluations,
10. Peers and self-assessment, outputs form individual and collaborative work

<b>Semester</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Hours</b>	<b>Credits</b>
<b>III</b>	<b>C3-P</b>	<b>OOP's Through JAVA Lab</b>	<b>30</b>	<b>2</b>

1. Write a program to perform various String Operations
2. Write a program on class and object in java
3. Write a program to illustrate Function Overloading & Function Overriding methods in Java
4. Write a program to illustrate the implementation of abstract class
5. Write a program to implement Exception handling
6. Write a program to create packages in Java
7. Write a program on interface in java
8. Write a program to Create Multiple Threads in Java
9. Write a program to Write Applets to draw the various polygons
10. Write a program which illustrates the implementation of multiple Inheritance using interfaces in Java
11. Write a program to assign priorities to threads in java

Semester	Course Code	Course Title	Hours	Credits
IV	C4	HTML, CSS & Java Script	60	3

### Course Objectives

Creation of static web pages using CSS and Java script

### Course Outcomes

Upon successful completion of the course, a student will be able to:

1. Create a static webpage.
2. Acquainted with HTML basic tags, frames, lists, table, etc.
3. Create a webpage using cascading style sheets and HTML.
4. Validate web pages with the help of javascript

### UNIT – I

**HTML:** Basic HTML, Document body, Text, Hyperlinks, 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,

### 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

## RECOMMENDED CO-CURRICULAR ACTIVITIES:

(Co-curricular activities shall not promote copying from textbook or from others work and shall encourage self/independent and group learning)

### E. Measurable

1. Assignments (in writing and doing forms on the aspects of syllabus content and outside the syllabus content. Shall be individual and challenging)
2. Student seminars (on topics of the syllabus and related aspects (individual activity))
3. Quiz (on topics where the content can be compiled by smaller aspects and data (Individuals or groups as teams))
4. Study projects (by very small groups of students on selected local real-time problems pertaining to syllabus or related areas. The individual participation and contribution of students shall be ensured (team activity))

### F. General

1. Group Discussion
2. Try to solve MCQ's available online.
3. Others

## RECOMMENDED CONTINUOUS ASSESSMENT METHODS:

Some of the following suggested assessment methodologies could be adopted;

1. The oral and written examinations (Scheduled and surprise tests),
2. Closed-book and open-book tests,
3. Problem-solving exercises,
4. Practical assignments and laboratory reports,
5. Observation of practical skills.
6. Individual and group project reports like “Create a web page for a shopping mall”.
7. Efficient delivery using seminar presentations,

Semester	Course Code	Course Title	Hours	Credits
IV	C4-P	HTML, CSS and JavaScript lab	30	2

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 real player in your web page.
6. Embed a calendar object in your web page.
7. Create an applet that accepts two numbers and perform all the arithmetic operations on them.
8. Create nested table to store your curriculum.
9. Create a form that accepts the information from the subscriber of a mailing system.
10. Write a Program in Java Script to add two numbers.
11. Write a script to find the factorial of a given number using functions.
12. Write a script to print all primes with in the given range.
13. Write a program to sort the array elements using “Bubble Sort” technique.
14. Write a program in Java Script to implement “Binary Search” technique.
15. Write a script to print all perfect numbers with in the given range.
16. Using DHTML, invert the behavior of <h1> to <h6> tags.
17. Create an inline style sheet for your web page.
18. Create an external style sheet for creating a font family.
19. Illustrate the creation of embedded style sheet.

## II YEAR IV SEMESTER PHP & My SQL

Semester	Course Code	Course Title	Hours	Credits
IV	C5	PHP & MySQL	60	3

### 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-1:

**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. **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.

## **Unit-2:**

**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-3:**

**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.

## **Unit-4:**

**Working with Files and Directories:** Including Files with include(), 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-5:**

**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.

## **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).**

## **RECOMMENDED CO-CURRICULAR ACTIVITIES:**

(Co-curricular activities shall not promote copying from textbook or from others work and shall encourage self/independent and group learning)

## **G. Measurable**

1. Assignments (in writing and doing forms on the aspects of syllabus content and outside the syllabus content. Shall be individual and challenging)
2. Student seminars (on topics of the syllabus and related aspects (individual activity))
3. Quiz (on topics where the content can be compiled by smaller aspects and data (Individuals or groups as teams))
4. Study projects (by very small groups of students on selected local real-time problems pertaining to syllabus or related areas. The individual participation and contribution of students shall be ensured (team activity))

## **H. General**

1. Group Discussion
2. Try to solve MCQ's available online.
3. Others

## **RECOMMENDED CONTINUOUS ASSESSMENT METHODS:**

Some of the following suggested assessment methodologies could be adopted;

1. The oral and written examinations (Scheduled and surprise tests),
2. Closed-book and open-book tests,
3. Problem-solving exercises,
4. Practical assignments and laboratory reports,
5. Observation of practical skills,
6. Individual and group project reports like building a complete website with a back end database.
7. Efficient delivery using seminar presentations,
8. Viva voce interviews.
9. Computerized adaptive testing, literature surveys and evaluations,
10. Peers and self-assessment, outputs form individual and collaborative work

semester	Course Code	Course Title	Hours	Credits
IV	C5-P	PHP & MySql LAB	30	2

## 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 and 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 supplier 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.

Print the names and ages of each employee who works in both Hardware and Software departments.

1. 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.
2. Print the name of each employee whose salary exceeds the budget of all of the departments that he or she work in.
3. Find the managerid's of managers who manage only departments with budgets greater than 1,000,000.
4. Find the enames of managers who manage the departments with largest budget.
5. 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.
6. Find the managerid's of managers who control the highest amount.
7. 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.

**III YEAR V SEMESTER**  
**Course 6A: Advanced Java Script-JQUERY,AJAX , JSON**  
**(Skill Enhancement Course (Elective), Credits: 05)**  
**Max Marks: 100 + 50**

**I. Learning Outcomes:** On completion of the course, students will be able to:

1. Create a dynamic website using advanced features of JavaScript and create a website with good and attractive design
2. Understand jQuery-Document Object Model traversing and content manipulation
3. Enhancing pages with jQuery animations
4. Construct interactive web pages using jQuery widgets and plugins
5. Integrate Asynchronous JavaScript and XML (AJAX), JSON techniques into applications

**II. Syllabus: (Total Hours: 90 including Teaching, Lab, and Field training, Unit tests etc.)**

**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.

**UNIT-II:**

jQuery – CSS Methods : Apply CSS Properties, Apply Multiple CSS Properties, Setting Element Width & Height, JQuery CSS Methods.

jQuery – DOM Traversing : Find Elements by index, Filtering out Elements, Locating Descendent Elements, JQuery DOM Traversing Methods. jQuery – DOM Manipulation Methods: Content Manipulation, DOM Element Replacement, Removing DOM Elements, Inserting DOM elements, DOM Manipulation Methods.

**UNIT-III:**

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-IV:**

Intro to jQuery UI, Need of jQuery UI in real web sites, Downloading jQuery UI, Importing jQuery UI, jQuery UI interactions-Draggable, Droppable, Resizable, Selectable, Sortable, jQuery UI widgets-Accordion, Auto Complete, ButtonSet, Date Picker, Dialog, Menu, Progress Bar, Slider, Spinner, Tabs, Tooltip, jQuery UI effects- Color Animation, Easing,Effect, addClass, removeClass

**Unit-V:**

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.

### III. References:

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. Introduction to JavaScript Object Notation: A To-the-Point Guide to JSON 1st Edition by Lindsay Bassett

### IV. Co-Curricular Activities

**a) Mandatory:** (Training of students by teacher in field related skills: (lab: 10 + field: 05) :

1. **For Teacher:** Field related training of students by the teacher in laboratory/field for not less than 15 hours on identifying On various controls, events, widgets, etc.
2. **For Student:** Students shall (individually) search online and analyze and generate report about different controls and events, widgets and plugins used in any of the ReactJS websites like Facebook, Instagram, Asana, Netflix, Codecademy, Yahoo mail, New York Times, Atlassian, DropBox, etc and submit a hand-written Fieldwork/Project work Report not exceeding 10 pages.
3. Max marks for Fieldwork / Project work / Report: 05.
4. Suggested Format for Field work/Project work: Title page, student details, index page, details of place visited, observations, findings, implementation and acknowledgements.
5. Unit tests (IE).

### b) Suggested Co-Curricular Activities

1. Build a website with 10 pages for the case study identified.
2. Training of students by related industrial experts.
3. Assignments
4. Seminars, Group discussions, Quiz, Debates etc. (on related topics).
5. Presentation by students on best websites

## Course 6A : Advanced Java Script: JQUERY,AJAX, JSON - Practical syllabus

**V. Skill Outcomes:** On successful completion of this practical course, the student shall be able to:

1. Create interactive dynamic web sites using jQuery,HTML, CSS
2. Create interface for dynamic websites
3. Manipulate content of the web pages dynamically
4. Implement web applications using AJAX and JSON

### VI. Practical Syllabus: (30 Hrs)

1. Using jQuery find all text areas, 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 date picker and specify a text to display for the week of the year column Heading

**Course 7A: ReactJS**  
**(Skill Enhancement Course (Elective), Credits: 05)**  
**Max Marks: 100 + 50**

**I.Learning Outcomes:** On successful completion of the course, the learner will be able to

1. Develop a proper understanding of Web Development Architecture.
2. Create application using React components.
3. Perform Navigation using Routes.
4. Build Web Applications using React with Redux.
5. Perform ReactJS animations

**II. Syllabus:** *(Total Hours: 90 including Teaching, Lab, and Field training, Unit tests etc.)*

**UNIT-I:**

ReactJS introduction, Why to learn ReactJS, React Environment Setup- Pre-requisite for ReactJS, Ways to install ReactJS, ReactJS – Architecture, ReactJS - Creating a React Application, React create-react-app, Features of ReactJS, ReactJS vs Native React, ReactJS vs AngularJS

**UNIT-II:**

ReactJS – JSX, ReactJS – Components: Creating a React component, Creating a class component, Creating a function component, ReactJS – Styling, ReactJS - Properties (props), React Props Validation

**UNIT-III:**

ReactJS state management, ReactJS event Management, React Constructor, React Component API, React Component Life-Cycle, React Forms and user input, Controlled Component, Un-Controlled Component, Form link.

**UNIT-IV:**

ReactJS - Http Client Programming, React Lists, The map() function, React Keys, React Refs, React Fragments, React Router, ReactCSS, React Animation, React Date picker, DOM in React.

**UNIT-V:**

React AJAX call- HTTP GET request, HTTP GET Request and Looping through data, React Bootstrap, React Table, React Hooks, React building and deployment.

**III.References:**

- 1.Learning React: Functional Web Development with React and Redux 1st Edition by Alex Banks.
- 2.The Road to React: Your journey to master plain yet pragmatic React.js by Robin Wieruch
- 3.React.js Essentials: A fast-paced guide to designing and building scalable and maintainable web apps with React.js by Artemij Fedosejev
- 4.Full-Stack React Projects: Learn MERN stack development by building modern web apps using MongoDB, Express, React, and Node.js, 2nd Edition Paperback by Shama Hoque

## 5.React.js Book: Learning React JavaScript Library From Scratch by Greg Sidelnikov

### IV. Co-Curricular Activities:

#### a) **Mandatory:** (*Training of students by teacher in field related skills: (lab: 10 + field: 05) :*

1. **For Teacher:** Field related training of students by the teacher in laboratory/field for not less than 15 hours on demonstrating various **interactive and dynamic websites** available online, addressing the students on identifying the case study to build an interactive websites in ReactJS.  
**For Student:** Students shall (individually) search online and visit any of the agencies like malls, hotels, super bazaars, etc. to identify and create a single page web application with at least one user interface and can also be mobile-friendly using ReactJS. They should submit a Fieldwork / Project work Report not exceeding 10 pages.
2. Max marks for Fieldwork/Project work Report: 05.
3. Suggested Format for Fieldwork/Project work: *Title page, student details, index page, details of place or websites visited, structure of the website, implementation details, acknowledgements, etc.*
4. Unit tests (IE).

#### b) **Suggested Co-Curricular Activities**

1. Arrange expert lectures by IT experts working professionally in the area of web content development
2. Assignments (in writing or implementing contents related to syllabus or outside the syllabus. Shall be individual and challenging)
3. Seminars, Group discussions, Quiz, Debates etc. (on related topics).

### Course 7A: ReactJS - Practical syllabus

#### V. **Skill Outcomes:** On successful completion of this practical course, the student shall be able to:

1. Create interactive dynamic web sites using ReactJS
2. Create interface for dynamic websites
3. Manipulate content of the web pages dynamically
4. Create login forms using ReactJS
5. Create websites with multi-page navigation using React Router

#### VI. **Practical (Laboratory) Syllabus:** (30 hrs.)

1. Design and Implement simple ReactJS program to display “Hello world!”
2. Design and Implement Search filter in ReactJS?
3. Design and Implement Simple counter using ReactJS?
4. Design and Implement a List in ReactJS and iterate over all the elements in the list using ReactJS?
5. Design and Implement Accordion in ReactJS?
6. Design and implement Datapicker in ReactJS?
7. Design and Implement Image Slider using ReactJS?
8. Create a check list in ReactJS and implement onchange() event handler?
9. Design and implement simple login form using ReactJS?
10. Design and implement ReactJS program to print data from REST API?
11. Design and implement Multi-Page navigation using React Router

**III Year B. Sc. – Semester – V**  
**Course 6B: Java Servlets**  
**(Skill Enhancement Course (Elective), Credits: 05)**  
**Max Marks: 100 + 50**

**I. Learning Outcomes:** On successful completion of the course, the learner will be able to

1. Describe Servlet Life Cycle and Servlet Architecture
2. Understand ServletConfig, ServletContext, ServletResponse and Supplying initialization parameters to Servlets
3. Performing database operations in Servlets
4. Demonstrate Session tracking mechanism in Servlets
5. Create server side programs using Java Servlets

**II. Syllabus:** *(Total Hours: 90 including Teaching, Lab, Field training, Unit tests etc.)*

**UNIT I :**

Understanding the need for server side extension, Introducing Java Servlet, Advantages of a Servlet, exploring the Servlet Container: The Standalone Container, The In-Process Container, The Out-Process Containers, Servlet API :javax.servlet package, javax.servlet.http package; Implementing a Servlet Object: javax.servlet.Servlet Interface, the javax.servlet.ServletConfig Interface<H2>, Servlet Life Cycle: Stages of Servlet Life Cycle: Loading a Servlet, Initializing a Servlet, Handling Request, Destroying a Servlet; Servlet Life Cycle Methods: init(), service(), destroy() methods

**UNIT II**

Developing the First Servlet Application : creating the home.html page, creating LifecycleServlet, Creating the Deployment Descriptor, Deploying Web Application, Running the Lifecycle Application; Request Navigation, Request Delegation, GenericServlet Class: creating the Home.html Page, Developing the HelloServlet.java Servlet, Deploying and Running the Application

**UNIT III**

Understanding Request Processing and HTTP: Implementing the ServletRequest Interface: Managing the Servlet Object as a Throwaway Object, Managing the ServletRequest Object Pool, working with Request Parameters : creating the Login Form, creating the LoginServlet Servlet, creating the Deployment Descriptor File, running the Application; working with Initialization parameter: Exploring the need for Initializing Parameters, Retrieving Initializing Parameters, Handling Servlet Initializing Parameters : creating the Home.html file, creating the InitParamsServlet Servlet, creating the Deployment Descriptor File, running the application; working with Context Initialization Parameters : creating the Home.html file, creating the Login.html file, creating Register.html file, creating the RegistrationServlet Servlet, creating the LoginServlet Servlet, creating the Deployment Descriptor File, running the application, Understanding ServletResponse.

**UNIT IV**

Understanding Request Dispatching: Navigation, Delegation, getting a RequestDispatcher Object; understanding the include() and forward() methods of Request Dispatcher, creating the home.html file, creating the TestServlets Servlet and TestServlet2 Servlet, creating the deployment descriptor file, running the application, working with Request Attributes, HTTP Status Codes, HttpServletRequest &

HttpServletResponse Interfaces, the HttpServlet Lifecycle. Handling Sessions in Servlet: Introducing Session tracking, Exploring URL Rewriting, Exploring Hidden Form Field, working with URL Rewriting and Hidden Form Field, Describing cookies, using cookies, Exploring and working with Http session, Servlet Context Attributes, Scopes of the Web Application Objects, Exploring the Single Thread Model, the ServletOutputStream Class

## **UNIT V :**

Implementing Filters, Listeners and Wrappers: Exploring Filters: Filter Interception Design pattern, Filter API: The Filter Interface, The FilterConfig Interface, The FilterChain Interface, Working with Filters: creating the Home.html page, creating the TestServlet.java File, creating the MyFilter1.java file, creating the MyFilter2.java file, configuring the Filters Application, Running the Application, Types of Listeners, Listener Interfaces, Need of Wrappers, types of Wrapper Classes: The ServletRequestWrapper Class, the ServletResponseWrapper Class, the HttpServletRequestWrapper Class, the HttpServletResponseWrapper Class, creating the home.html page, creating the TestServlet.java File, creating the MyRequestWrapper.java File, creating the MyResponseWrapper.java File, creating the MyWrapperFilter.java File, creating the Web.xml File, Deploying and Running the Application, Applet to Servlet Communication

## **III.References:**

1. JDBC, Servlets and JSP (Includes JSF and Design patterns) Black Book by Santosh Kumar K
2. Java Server Programming Java EE6 Black Book, Kogent Learning Solutions
3. Murach's Java Servlets and JSP, 3rd Edition
4. Head First Servlet and JSP, O REILLY , by Bryan Basham, Kathy Sierrs & Bert Bates
5. Servlet & JSP: A Tutorial, Second Edition 2nd Edition by Budi Kurniawan
6. Web sources suggested by the teacher concerned and the college librarian including reading material.

## **IV. Co-Curricular Activities:**

a) Mandatory: (Training of students by teacher in field related skills: (lab: 10 + field: 05) :

1. For Teacher: Field related training of students by the teacher in laboratory/field for not less than 15 hours on demonstrating various e-commerce websites available online, addressing the students on identifying the case study to build an e-commerce and database driven website, using Java Servlets.

2. For Student: Students shall (individually) search online and visit any of the agencies like malls, hotels, super bazaars, etc. where there is a need for an **e-commerce** and database driven website and build a e-commerce website using Java servlets. They have to submit a Field work/Project work Report not exceeding 10 pages. Example: Online food ordering system, E-health care system, movie booking system, etc.

3. Max marks for Fieldwork/Project work Report: 05.

4.Suggested Format for Fieldwork/Project work: Title page, student details, index page, details of place or websites visited, structure of the website, implementation details and acknowledgements.

5.Unit tests (IE).

### **b) Suggested Co-Curricular Activities**

1.Arrange expert lectures by IT experts working professionally in the area of web content development

2.Assignments (in writing or implementing contents related to syllabus or outside the syllabus. Shall be individual and challenging)

3.Seminars, Group discussions, Quiz, Debates etc. (on related topics).

4.Preparation by students on best websites.

5.Arrange a webpage development competition among small groups of students.

## **Course 6B: Java Servlets -PRACTICAL SYLLABUS**

**V. Skill Outcomes:** On successful completion of this practical course, the learner will be able to

1. Describe the concepts of WWW including browser and HTTP protocol
2. Create server side programs using Java Servlets.
3. Use Servlets to generate the web pages dynamically using the database connectivity.
4. Develop modern Web Applications using the client and server side technologies and the web design fundamentals

### **VI. Practical (Laboratory) Syllabus: (30 hrs)**

1. Write a program to demonstrate Basic Servlet to display the date and time.?
2. Write a Servlet program to generate simple text?
3. Write a Servlet program to display cookie ID?
4. Write a Servlet program to handle user form?
5. Write a program To convert the static web pages into dynamic web pages using servlets and cookies?.
6. Write a program using Servlet to write persistent and non-persistent cookies on client side.?

7. Write a program to design the login form using servlet.?

8. Write a servlet program for customer registration.?

9. Develop sample application for session management using Servlet?

10. Develop sample application with database connectivity using Servlet?

**III Year B. Sc. – Semester – V**  
**Course 7B: Java Server Pages (JSP)**  
**(Skill Enhancement Course (Elective), Credits: 05)**  
**Max Marks: 100 + 50**

**I. Learning Outcomes:** On completion of the course, students will be able to:

1. Describe JSP life cycle and fundamentals of WWW
2. Demonstrate Java Server Pages and their relationship to servlets
3. Develop distributed web application using JSP.
4. Manage queries and updates in transaction contexts.
5. Create server side programs using Java Server Pages

**II. Syllabus:** *(Total Hours: 90 including Teaching, Lab, Field training, Unit tests etc.)*

**UNIT I:**

Introduction to JSP, Advantages of JSP over Servlets, JSP Architecture, JSP Life Cycle, creating simple JSP page. JSP Basic Tags and Implicit Objects: Scripting tags: the Scriptlet Tag, the Declarative Tag, the Expression Tag; Implicit Objects: the request object, the response object, the out object, the page object, the page context object, the application object, the session object, the config object, the exception object; Directive tags: the page directive tag, the include directive, the Taglib Directive.

**UNIT II:**

Working with JavaBeans and Action Tags in JSP: Advantages of using JavaBeans, Action tags: Include Tag, Forward Tag, Param Tag, useBean tag, the setProperty Tag (name, property, value, param), the getProperty Tag (name attribute, property attribute)

**UNIT III:**

Enhancing the JSP tags support: Custom tags, elements of custom tags: Tag Library Descriptor, Tag Handler, Tag Extension API, Empty Tags: Empty Tag Handler Life Cycle, Body Content Tag Interface: Body Tag Handler Life Cycle, Iteration Tag Handler Life Cycle, Life Cycle of Simple Tag Handlers, Difference between Simple tag and classic tag handlers, the TryCatchFinally Interface.

**UNIT IV:** Understanding JSP Expression Language: Basic Syntax of using EL, types of EL Expression: Immediate, Deferred, Value and Method Expressions, Tag Attribute Types, EL Expression: the EL Resolver Classes, EL Operators, Implicit EL Objects, Functions with EL.

**UNIT V :**

Working with JSP Standard Tag Library (JSTL): JSTL core tags, General Purpose Tags: The <c:out> tag, The <c:set> tag, The <c:remove> tag, The <c:catch> tag; Conditional and looping Tags,

Networking Tags : The <c:import> Tag, The <c:url> Tag, The <c:redirect> Tag, The <c:param> Tag; JSTL SQL Tags: The <sql:query> Tag, The <sql:update> Tag, The <sql:param> Tag, The <sql:dataParam> Tag, The <sql:setDataSource> Tag, The <sql:transaction> Tag; Basic Formatting Tags, Number Formatting Tags, Date Formatting Tags, Time Zone Formatting Tags; JSTL XML Tags: Core Tags, Flow Control Tags, Transformation Tags

### III. Reference Books

1. JDBC, Servlets and JSP (Includes JSF and Design patterns) Black Book by Santosh Kumar K
2. Java Server Programming Java EE6 Black Book, Kogent Learning Solutions
3. JSP 2.0: The Complete Reference, Second Edition by Phillip Hanna
4. JavaServer Pages 3e, O REILLY by Hans Bergsten
5. Web Sources:
  - a. <https://www.javatpoint.com/jsp-tutorial>
  - b. <https://www.tutorialspoint.com/jsp/index.htm>
  - c. <https://www.baeldung.com/jsp>
  - d. <https://www.w3schools.in/jsp/tutorials/>
6. Web sources suggested by the teacher concerned and the college librarian including reading material.

### IV. Co-Curricular Activities:

a) Mandatory: (Training of students by teacher in field related skills: (lab: 10 + field: 05) :

1. For Teacher: Field related training of students by the teacher in laboratory/field for not less than 15 hours on demonstrating various interactive and dynamic websites available online, addressing the students on identifying the case study to build an interactive and database driven website, forms to be used in website, database to be maintained, reports to be produced, etc.

2. **For Student:** Students shall (individually) search online and visit any of the agencies like malls, hotels, super bazaars, etc. where there is a need for an interactive and database driven website and create a website using JSP and submit a Fieldwork / Project work Report not exceeding 10 pages. Example: Choosing a firm or business to develop a website, identifying forms to be placed in the websites, back end databases to be maintained and reports to be generated and placed in the websites.

3. Max marks for Fieldwork/Project work Report: 05.

4. Suggested Format for Fieldwork/Project work: Title page, student details, index page, details of place or websites visited, structure of the website, implementation details and acknowledgements.

5. Unit tests (IE).

### b) Suggested Co-Curricular Activities

1. Arrange expert lectures by IT experts working professionally in the area of web content development
2. Assignments (in writing or implementing contents related to syllabus or outside the syllabus. Shall be individual and challenging)
3. Seminars, Group discussions, Quiz, Debates etc. (on related topics).
4. Preparation by students on best websites.
5. Arrange a webpage development competition among small groups of students.

### **Course 7B: JSP- PRACTICAL SYLLABUS**

**V. Skill Outcomes:** On successful completion of this practical course, the student will be able to:

1. Acquire skills to design server side pages
2. Manipulate cookies using JSP programs
3. Create Database connectivity using JSP and perform database operations

### **VI. Practical Syllabus(30Hrs):**

1. Install the TOMCAT web server?
2. Write a program to demonstrate basic jsp example?
3. Write a JSP program that displays “Good Morning” or “Good Evening” based on the present time?
4. Write a JSP page that displays a randomly generated number in first visit to this page and repeat displaying this same number in subsequent visits?
5. Write a program for user registration in online book store using JSP?
6. Write a JSP program to authenticate user login?
7. Write a program for session management in JSP?
8. Write a JSP program to find the no of hits of a page?
9. Write a JSP program to create simple calculator?
10. Design and Implement JSP program to perform MySQL database operations such as select, update, delete?
11. Design and Implement JSP program for creating cookies of username and email, and add age to the cookie for 10 hours?

**Govt. College for Women(Autonomous),Srikakulam**

**I B.Sc., Web Enabled Technologies**

**Semester-I Blue Print**

**<<Paper Title>>**

**Subject: <<Paper Title>>**

**Paper: <<No>>**

**Time: 3 hrs**

**Marks:75M**

**Model Blue print for the question paper setter**

<b>Chapter name</b>	<b>Essay Questions 10 Marks</b>	<b>Short Questions 5 Marks</b>	<b>Marks allotted to the chapter</b>
<b>UNIT-I</b>	<b>2</b>	<b>2</b>	<b>30</b>
<b>UNIT-II</b>	<b>2</b>	<b>2</b>	<b>30</b>
<b>UNIT-III</b>	<b>2</b>	<b>2</b>	<b>30</b>
<b>UNIT-IV</b>	<b>2</b>	<b>2</b>	<b>30</b>
<b>UNIT-V</b>	<b>2</b>	<b>2</b>	<b>30</b>
<b>Total no. of questions</b>	<b>10</b>	<b>10</b>	<b>20</b>
<b>Total Marks Including Choice</b>	<b>100</b>	<b>50</b>	<b>150</b>

**Govt. College for Women(Autonomous),Srikakulam**

**I B.Sc., Web enabled Technologies**

**Semester-I Paper-I Model Paper**

**Fundamentals of computers, Web & Python - Programming**

**Subject: Fundamentals of computers, Web & Python - Programming**

**Paper: I**

**Time: 3 hrs**

**Marks:75M**

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Section – A

I. Answer the following questions

(5x10=50)

1. (a) Explain Functions of Operating Systems.  
(OR)  
(b) Describe functions of each component of Computer with block diagram.
2. (a) Describe Arithmetic Operators, Assignment Operators, Comparison Operators, Logical Operators and Bitwise Operators in detail with examples.  
(OR)  
(b) What are the different loop control statements available in python? Explain with suitable examples.
3. (a) Explain the string.Format method available in Python and Explain with an example, how + and \* operators work with strings.  
(OR)  
(b) What are the different operations that can be performed on a list? Explain with examples.
4. (a) What is lambda function? What are the characteristics of a lambda function? Give an example.  
(OR)  
(b) (i) What type of parameter passing is used in Python? Justify your answer with sample programs.  
(ii) Write a Python function that prints all factors of a given number.
5. (a) What are different types of inheritance supported by Python? Explain.  
(OR)  
(b) Explain exception handling mechanism in Python

## Section – B

II. Answer any FIVE questions

(5x5=25)

1. List out applications of Computer.
2. Difference between Web Applications and Desktop Applications.
3. Write in brief about any 5 keywords in Python.
4. Write in brief about Set in python. Write operations with suitable examples.
5. Compare List and Tuple.
6. Explain about Membership operators in python with appropriate examples.
7. Write about the concept of scope of a variable in a function.
8. Explain about fruitful functions with suitable examples.
9. Explain the concept of method overriding with an example.
10. List the features and explain about different Object Oriented features supported by Python.

**Govt. College for Women(Autonomous),Srikakulam**

**I B.Sc., Computer Science**  
**Semester-I Paper- Model Paper**

**Subject : Graphic Designing and Web designing**

**Paper: II**

**Time: 3 hrs**

**Marks:75M**

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**Section – A**

**I. Answer the following questions**

**(5x10=50)**

1. What is Raster Image and Vector Image ? What are difference between them?  
OR  
Explain how to create a file in Photoshop
2. Explain Different Color modes in Photoshop  
OR  
Cropping and straightening an image in Photoshop
3. A vector illustration / Poster / T-shirt design  
OR  
Creating shape vectors in Adobe Illustration
4. Explain WordPress installation and local host configuration using xampp server?  
OR  
What is Content Management System (CMS)? What are the Advantages
5. Explain Writing settings in WordPress  
OR  
Explain various discussion settings in WordPress.

**Section – B**

**II. Answer any FIVE questions**

**(5x5=25)**

6. What is Multimedia ? What are the Advantages of Computer Graphics?
7. Types of color formats in Multimedia
8. What are different types of images used in web designing?
9. How you can re-size the image in Photoshop?
10. **Explain what is Rasterize?**
11. **Explain how you can create an artboard in Adobe Illustrator?**
12. **list some features of word press**
13. **What are the differences between Posts and Pages?**
14. **What is the loop in WordPress?**
15. How to run database query on word press?

**Govt. College for Women(Autonomous),Srikakulam**

**I B.Sc., Computer Science**

**Semester-III Paper-III Model Paper**

**Object Oriented Programming Through Java**

**Subject:** Objecte Oriented Programming through Java

**Paper: III**

**Time: 3 hrs**

**Marks:75M**

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**Section – A**

I. Answer any FIVE questions (5x10=50)

1. (a) Explain about different data types in Java.  
(OR)  
(b) Explain about Java operators.
2. (a) Explain the different ways of creating, initializing and accessing arrays in Java  
(OR)  
(b) Define String. Discuss the way of creating Strings. Explain different String Class Methods
3. (a) Define Constructor. Explain different types of constructors in java.  
(OR)  
(b) Explain with examples different types of Inheritance in java
4. (a) Explain how to create package and access a package.  
(OR)  
(b) Explain how to read data from a file using File Input Stream.
5. (a) What is an Exception? Explain how to create a user defined exception.  
(OR)  
(b) Explain creation ,running and terminating of a Thread

**Section – B**

II. Answer any FIVE questions

**(5x5=25)**

6. Explain about features of Java.
7. Explain different ways of reading input in a Java Program
8. Distinguish break and continue
9. Explain any one loop statement available in Java with an example
10. Define Class and Object. Explain how to create objects in java.
11. Explain Method overloading with an example.
12. Define Package. What are different types of Packages.
13. Explain how to read a file using File Reader
14. Explain different types of Exceptions
15. Explain Thread Life Cycle

**Govt. College for Women(Autonomous),Srikakulam**  
**III B.Sc., Computer Science**  
**Semester-V Paper- V Model Paper**

**Subject : Web Technologies**

**Paper: V**

**Time: 3 hrs**

**Marks:75M**

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**Section – A**

**I. Answer the following questions**

**(5x10=50)**

1. How to create various types of lists in HTML?  
OR  
Explain various form elements in HTML
2. Explain various CSS properties.  
OR  
Explain positioning elements with an example.
3. Explain control statements in JavaScript.  
OR  
Exception Handling mechanism in JavaScript.
4. Explain Form validation with an example.  
OR  
Explain the Rollover Buttons.
5. What is XML? How to add book details using XML.  
OR  
Explain various Web services.

**Section – B**

**II. Answer any FIVE questions**

**(5x5=25)**

6. How to do text formatting?
7. What are frame attributes?
8. What are various types of CSS?
9. Explain the Z-index property.
10. **What are the differences between HTML and DHTML?**
11. **Explain various methods of string object?**
12. **Explain JavaScript events**
13. Explain Messages and confirmations.
14. **What are the differences between XML and HTML??**
15. What is DOM?

**GOVERNMENT COLLEGE FOR WOMEN(Autonomous),SRIKAKULAM**  
**BSC(MPWT)**  
**II YEAR IV SEMESTER**  
(w.e.f. 2020-21 admitted batch)  
**PHP & MYSQL**  
**Model Paper**

Maximum Marks: 75

Time: 3 Hours

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**Section – A**

I. Answer any FIVE questions (5x10=50)

1. (a) Explain about various operators supported by PHP

(OR)

(b) Define function. Write about types of functions that can be defined in PHP

2. (a) Explain about various string handling functions in PHP

(OR)

(b) Define array. Explain how to declare and use various types of arrays in PHP

3. (a) How session variables are use full in web applications. Explain the procedure for working with session variables in PHP

(OR)

(b) Explain the steps for sending E-Mail after form submission

4. (a) Write about various file operations supported by PHP

(OR)

(b) Explain the steps for creation a new image object in PHP

5. (a) Explain about the connectivity of PHP & MySQL using an example and retrieve the records from the table student stored in MySQL.

(OR)

(b) Explain how to add subentries to the records in detail with an example

**Section – B**

II. Answer any FIVE questions

(5x5=25)

6. Write about the data types supported by PHP

7. How to save state between function calls in PHP by using static variable

8. Write about any 5 date and time functions available in PHP

9. Define object. Explain object instance

10. How to access data submitted through HTML form sent through GET and POST Methods

11. State the purpose of cookies in web environment. How to set cookies in PHP

12. What is the difference between MySQL and MySQLi

13. Write about popen() and exec() functions

14. Write any three functions used for validating the files in PHP

**Government College for Women(Autonomous)Srikakulam**  
Reaccredited by NAAC with 'A' Grade during 3<sup>rd</sup> Cycle (CGPA 3.09)

**RESOLUTIONS/MINUTES OF BOARD OF STUDIES MEETING HELD**  
**ON 10<sup>TH</sup> OCTOBER,2022**

1. It is resolved to adapt CBCS system for all 6 Semesters.
2. It is resolved to adapt the syllabus framed by APSCHE.
3. It is resolved to approve and ratify the first ,second and third year syllabus of the Computer Science Degree for 2022-23 admitted batch .
4. It is resolved to introduce Community Service Project and Internship of total 10 months duration from 2020-21 admitted batch.
5. It is resolved to approve and ratify the model question papers submitted by the concerned faculty members for all the semesters. The evaluation of internal will be done for 25 Marks(Continuous Assessment) and External assessment is for 75 Marks.
6. It is resolved to encourage students to register for certificate courses offered by Microsoft, NetAcad, Spoken Tutorials etc.
7. Conduct Seminars, Workshops, Symposia, Industry visits etc...
8. Adapt quality based curriculum as per the norms of the NAAC.
9. Encourage the students to join JKC ,APSSDC to improve Technical and communication skills
10. Encourage students to participate in community centric activities like health programs and tie –up with reputed organizations.

## Members Present

S.No	BOS Committee	Name & Designation	Signature
1.	Chair Person	Name : Smt. I. Srilakshmi Designation :Lecturer in Computer Science Address :GCW(A),Srikakulam	
2.	Subject Expert (University Nominee)	Name : Dr. A. Mary Sowjanya Designation: Asst. Professor, Dept. of CS&SE Address: Andhra University College of Engineering(A),Vishakhapatnam	
3.	Subject Expert (Nominated By Academic Council )	Name : Dr. A. Siva Prasad Designation :Lecturer in Computer Science Address : Government Degree College, Tekkali	
4.	Subject Expert (Nominated By Academic Council )	Name : Sri. V. RaghavaSwamy Dora Designation :Lecturer in Computer Science Address: Dr. V. S. Krishna College(A),Vishakhapatnam	
5.	Member of Industrial	Name : Kum. P. Vijaya Durga Designation :License Manager Software Asset Management Team Address : Wipro, Hyderabad	
6.	Member of Alumni	Name: Kum. M. Gayatri Varshitha Pursuing M.Sc Computer Science Dr. BR. Ambedakar University, Etcherla	
7.	Members of Department	1)Smt. G. Suma Latha, Lecturer in Computer Science Government College For Women(A),SKLM  2)Smt. S. Vani Kumari, Lecturer in Computer Applications Government College For Women(A),SKLM  3)Smt. S. Madhavi Latha, Lecturer in Computer Applications Government College For Women(A),SKLM	