GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS)
SRIKAKULAM

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

BOARD OF STUDIES
COMPUTER SCIENCE MINOR
SYLLABUS
2023-24

GOVERNMENT COLLEGE FOR WOMEN(AUTONOMOUS)SRIKAKULAM

REACCREDITED BY NAAC WITH 'A' GRADE DURING 3RD CYCLE (CGPA 3.09)

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From

Dr.K.Surya Chandra Rao,M.A,Ph.D.
Principal
Govt. College for Women (A)
Srikakulam

IV BOARD OF STUDIES MEETING

BOARD OF STUDIES MEETING AGENDA
(FOR 2023-2024, 2022-2023, 2021-2022, 2020-2021 ADMITTED BATCHES)

1. Adaption of CBCS for all semesters
2. Approval of Major subjects and Minor subjects syllabi and Model question papers for 2023-24 admitted batch
3. Approval of syllabi and Model question papers for 2021-22, 2022-23 admitted batches
4. Ratification of semester mode pattern of examination for all students.
5. Approval and ratification of Continuous Assessment System (CAS) for all admitted batches
   a) 60-40 pattern for 2022-23, 2023-24 admitted batches (Blue print)
   b) 75-25 pattern for 2021-22, 2020-21 admitted batches (Blue print)
6. Approval and ratification of Life skill, Multidisciplinary and Skill development courses for 2023-24 admitted batch for all semesters
7. Approval and ratification of Life skill and Skill enhanced courses for 2021-22 & 2022-23 admitted batches
8. Approval and ratification of LSC, SDC for 50 marks external pattern (No Internals)
9. Approval of List of examiners
10. Approval of List of Paper setters
11. Approval of Innovative learning and evaluation techniques
12. Approval of students seminars, workshops, fieldtrips & student centric activities
13. Approval of student projects and student research
14. Approval of ICT Mode of learning
15. Approval of encouragement for students to join extension activities i.e., JKC, NSS etc…
16. Any other matters like Certificate courses, Mou's, outreach programmes etc..
17. Approval and ratification of CSP after second semester, short term internship after IVth semester and long term internship in VIth semester for all admitted students.

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

Reaccredited by NAAC with 'A' Grade during 3rd Cycle (CGPA 3.09)

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BOS Meeting 27.09.2023

The Board of Studies meeting is held on 27.09.2023 Time: 10.00 am in the Department of Computer Science & Applications, Government College for Women (Autonomous) , Srikakulam for the Autonomous students i.e., 2023 – 24 under the Chairman ship 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 Computer Science 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.S. Jhansi Rani Designation: Associate 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:Dr.V.S.Krishna college(A),Vishakhapatnam
4.	Subject Expert (Nominated By Academic Council)	Name : Smt J.Sharmila Rani Lecturer in Computer Applications GDC, Gajapathinagaram
5.	Member of Industrial	Name : Mr.I.V.Anil Kumar Designation :Principal Team Lead, Zebra Technologies, Banglore
6.	Member of Alumni	Name: Kum.M.GayatriVarshitha Pursuing M.Sc Computer Science Dr.BR.Ambedakar University,Etcherla
7.	Members of Department	1)Smt S.Vani Kumari, Lecturer in Computer Applications GCW(A),Srikaulam 2)Smt. S. MadhaviLatha, Lecturer in Computer Applications GCW(A),Srikaulam 3)Smt G. SumaLatha, Lecturer in Computer Science, GCW(A),Srikaulam

CURRICULUM FRAMEWORK

B.Sc (Honours) with Single Major																							
Semester	**Major* (4 Cr)**			**Minor (4 Cr)**			**Languages (3 Cr)**			**Multi Disny' (2 Cr)**			**Skill Enhancement Courses (2Cr)**			**OOTC**			**Env. Edn (2 Cr)**			**Total**		
	C	***H***	***Cr***	**C**	***H***	***Cr***	**C**	***H***	***Cr***	**C**	***H***	***Cr***	**C**	***H***	***Cr***	**C**	***H***	***Cr***	**C**	***H***	***Cr***	**C**	***H***	**Cr**
Sem 1	2*	10	8				2	8	6	1	2	2	2	4	4							7	24	20
Sem 2	2	6+4	8	1	3+2	4	2	8	6				2	4	4							7	27	22
Community Service Project of 180 hours with 4 Credits. Student is eligible for Exit Option-1 with the award of Certificate in respective discipline																								
Sem 3	4	12+8	16	1	3+2	4				1	2	2	1	2	2							7	29	24
Sem 4	3	9+6	12	2	6+4	8				1	2	2	1	2	2							7	29	24
Short-Term Internship/Apprenticeship/OJT of 180 hours with 4 Credits. Student is eligible for Exit Option-2 with the award of Diploma in respective major with minor																								
Sem 5	4	12+8	16	2	6+4	8													1	2	2	7	32	26
Sem 6	**Semester Internship/Apprenticeship/OJT with 12 Credits. Student is eligible for Exit Option-3 with the award of Degree in respetive major with**																							
																					IKS#			
Sem 7	3	9+6	12										2*	6+4	8	1	2	2	1	2	0	6	29	22
Sem 8	3	9+6	12										2*	6+4	8	1	2	2	1	2	0	6	29	22
	21		84	6		24	4		12	3	6	6	10	32	28	2	4	4	2	4	0	47		**160**
20 Additional Credits for 10 month mandatory Internship/OJT/Apprenticeship																								
C Courses				**H** Hours						**Cr** Credits						**OOTC** Open Online Transdisciplinary								
IKS# Indian Knowledge Systems - Audit Course																								

GOVT. COLLEGE FOR WOMEN (AUTONOMOUS): SRIKAKULAM
B.Sc. Computer Science Minor Structure of Syllabus
Under CBCS w.e.f. 2023-24

Semester	Paper	Title	Hrs	Credits	IA	EA	Total
FIRST YEAR							
II	1	Problem Solving using C - (T)	3	3	40	60	100
		Problem Solving using C- (P)	2	1	0	50	50
SECOND YEAR							
III	2	Object Oriented Programming using Java	3	3	40	60	100
		Object Oriented Programming using Java Lab	2	1	0	50	50
IV	3	Database Management System - (T)	3	3	40	60	100
		Database Management System - (P)	2	1	0	50	50
	4	Web Interface Designing Technologies - (T)	3	3	40	60	100
		Web Interface Designing Technologies - (P)	2	1	0	50	50
THIRD YEAR							
V	5	Object Oriented Software Engineering - (T)	3	3	40	60	100
		Object Oriented Software Engineering - (P)	2	1	0	50	50
	6	Web Applications Development using PHP & MYSQL - (T)	3	3	40	60	100
		Web Applications Development using PHP & MYSQL - (P)	2	1	0	50	50

I Semester

Course 3: Problem Solving using C
Credits -3

Course Objectives

1. Learn Generations of Programming Languages
2. Understand how to solve common types of computing problems.
2. Learn to map problems to programming features of C.
3. Learn to write good portable C programs.

Course Outcomes

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

1. Understand the Fundamental constructs of Programming
2. Analyze and develop a solution to a given problem with suitable control structures
3. Apply the derived data types in program solutions
4. Use the 'C' language constructs in the right way
5. Apply the Dynamic Memory Management for effective memory utilization

UNIT-I

Introduction to computer and programming:Introduction to Programming Languages,Generations of Programming Languages, Compiler and interpreter, Flowcharts and Algorithms

Fundamentals of C: History of C, Features of C, C Tokens-variables and keywords and identifiers, constants and Data types, Rules for constructing variable names, Operators, Structure of C program, Input /output statements in C-Formatted and Unformatted I/O

UNIT-II

Control statements: Decision making statements: if, if else, else if ladder, switch statements. Loop control statements: while loop, for loop and do-while loop. Jump Control statements: break,continue and goto.

UNIT-III

Derived data types in C: Arrays: One Dimensional arrays - Declaration, Initialization and Memory representation; Two Dimensional arrays -Declaration, Initialization and Memory representation. **Strings**: Declaring & Initializing string variables; String handling functions, Character handling functions

UNIT-IV

Functions: Function Prototype, definition and calling. Return statement. Nesting of functions. Categories of functions. Recursion, Parameter Passing by address & by value. Local and Global variables. **Storage classes**: automatic, external, static and register.

Pointers: Pointer data type, Pointer declaration, initialization, accessing values using pointers.

Pointer arithmetic. Pointers and arrays, pointers and functions.

UNIT-V

Dynamic Memory Management: Introduction, Functions-malloc, calloc, realloc, free **Structures:** Basics of structure, structure members, accessing structure members, nested structures, array of structures, structure and functions, structures and pointers.
Unions - Union definition; difference between Structures and Unions.

Text Books:

1. E. Balagurusamy, "Programming in ANSI C", Tata McGraw Hill, 6th Edn, ISBN-13: 978-1-25- 90046-2
2. Herbert Schildt, ―Complete Reference with C, Tata McGraw Hill, 4th Edn., ISBN- 13: 9780070411838, 2000
3. Computer fundamentals and programming in C, REEMA THAREJA, OXFORD UNIVERSITY PRESS

Reference Books

1. E Balagurusamy, COMPUTING FUNDAMENTALS & C PROGRAMMING – Tata McGraw-Hill, Second Reprint 2008, ISBN 978-0-07-066909-3.
2. Ashok N Kamthane, Programming with ANSI and Turbo C, Pearson Edition Publ, 2002.
3. Henry Mullish&Huubert L.Cooper: The Spirit of C An Introduction to modern Programming, Jaico Pub. House,1996.
4. Y kanithkar, let us C BPB, 13 th edition-2013, ISBN:978-8183331630,656 pages.

SUGGESTED CO-CURRICULAR ACTIVITIES & EVALUATION METHODS:
Unit 1: Activity: Quiz on computer hardware and software concepts

Evaluation Method: Objective-based quiz assessing knowledge and understanding
Unit 2: Activity: Problem-solving using Decision-Making Statements

Evaluation Method: Correctness of decision-making logic
Unit 3: Activity: Array and String Program Debugging

Evaluation Method: Identification and correction of errors in code
Unit 4: Activity: Pair Programming Exercise on Functions

Evaluation Method: Collaboration and Code Quality
Unit 5: Activity: Structured Programming Assignment

Evaluation Method: Appropriate use of structures and nested structures

II Semester

Course 3: Problem Solving using C

Credits -1

List of Experiments

1. A. Write a program to calculate simple & compound interest
   B. Write a C program to interchange two numbers.
2. Find the biggest of three numbers using C.
3. Write a c program to find the sum of individual digits of a positive integer.
4. A Fibonacci sequence is defined as follows: the first and second terms in the sequenceare 0 and 1. Subsequent terms are found by adding the preceding two terms in the sequence.
5. Write a c program to check whether a number is Armstrong or not.
6. Write a c program to generate all the prime numbers between 1 and n, where n is avalue supplied by the user.
7. Write a c program that implements searching of given item in given list
8. Write a c program that uses functions to perform the following: Addition of twomatrices. Multiplication of two matrices.
9. Write a program for concatenation of two strings.
10. Write a program for length of a string with and without String Handling functions
11. Write a program to demonstrate Call by Value and Call by Reference mechanism
12. Write a Program to find GCD of Two numbers using Recursion
13. Write a c program to perform various operations using pointers.
14. Write a c program to read data of 10 employees with a structure of 1.employee id2.aadar no, 3.title, 4.joined date, 5.salary, 6.date of birth, 7.gender, 8.department.
15. Write a Program to demonstrate dynamic arrays using Dynamic Memory Management functions

III Semester

Course 5: Object Oriented Programming using Java

Credits -3

Course Objectives:

To introduce the fundamental concepts of Object-Oriented programming and to design &implement object-oriented programming concepts in Java.

Course Outcomes:

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

1. Understand the basic concepts of Object-Oriented Programming and Java Program Constructs

2. Implement classes and objects and analyze Inheritance and Dynamic Method Dispatch 3. Demonstrate various classes in different packages and can design own packages

4. Manage Exceptions and Apply Threads

5. Create GUI screens along with event handling

UNIT-I

OOPs Concepts and Java Programming: Introduction to Object-Oriented concepts, proceduraland object-oriented programming paradigm

Java programming: An Overview of Java, Java Environment, Data types, Variables, constants, scope and life time of variables, operators, type conversion and casting, Accepting Input from the Keyboard, Reading Input with Java.util.Scanner Class, Displaying Output with System.out.printf(), Displaying Formatted Output with String.format(), Control Statements

UNIT-II

Arrays, Command Line Arguments, Strings-String Class Methods

Classes & Objects: Creating Classes, declaring objects, Methods, parameter passing, static fieldsand methods, Constructors, and 'this' keyword, overloading methods and access

Inheritance: Inheritance hierarchies, super and subclasses, member access rules, 'super' keyword, preventing inheritance: final classes and methods, the object class and its methods;

UNIT-III

Polymorphism: Dynamic binding, method overriding, abstract classes and methods;

Interface: Interfaces VS Abstract classes, defining an interface, implement interfaces, accessing implementations through interface references, extending interface;

Packages: Defining, creating and accessing a package, understanding CLASSPATH, importing packages.

UNIT-IV

Exception Handling: Benefits of exception handling, the classification of exceptions, exception hierarchy, checked exceptions and unchecked exceptions, usage of try, catch, throw, throws and finally, rethrowing exceptions, exception specification, built in exceptions, creating own exceptionsub classes.

Multithreading: Differences between multiple processes and multiple threads, thread states, thread life cycle, creating threads, interrupting threads, thread priorities, synchronizing threads, inter thread communication.

UNIT-V

GUI Programming with Swing- Introduction, MVC architecture, components, containers. Understanding Layout Managers - Flow Layout, Border Layout, Grid Layout, Card Layout, GridBag Layout.

Event Handling- The Delegation event model- Events, Event sources, Event Listeners, Event classes, Handling mouse and keyboard events, Adapter classes, Inner classes, Anonymous Inner classes.

Text Books:

1. Java The complete reference, 9th edition, Herbert Schildt, McGraw Hill.

2. Understanding Object-Oriented Programming with Java, updated edition, T.Budd, Pearson Education.

Reference Books

1. Cay S. Horstmann, “Core Java Fundamentals”, Volume 1, 11 th Edition, Prentice Hall,2018

2. Paul Deitel, Harvey Deitel, “Java SE 8 for programmers”, 3rd Edition, Pearson, 2015. 3. S. Malhotra, S. Chudhary, Programming in Java, 2nd edition, Oxford Univ. Press.

SUGGESTED CO-CURRICULAR ACTIVITIES & EVALUATION METHODS:

Unit 1: Activity: Quiz on Object-Oriented Programming Concepts and Java Constructs

Evaluation Method: Quiz Performance and Knowledge Retention

Unit 2: Activity: Object-Oriented Programming Assignment: Class Implementation

Evaluation Method: Assignment Completion and Correctness

Unit 3: Activity: Hands-on Lab Activity: Creating and Using Custom Java Packages

Evaluation Method: Lab Performance and Correctness of Code Implementation

Unit 4: Activity: Case Study Discussion on where multi-threading is crucial

Evaluation Method: Critical thinking, problem-solving, and presentation skills.

Unit 5: Activity: GUI design contest using Java SwingS

III Semester

Course 5: Object Oriented Programming using Java Lab

Credits -1

List of Experiments

1. Write a Java program to print Fibonacci series using for loop.

2. Write a Java program to calculate multiplication of 2 matrices.

3. Create a class Rectangle. The class has attributes length and width. It should have methods that calculate the perimeter and area of the rectangle. It should have read Attributes method toread length and width from user.
4. Write a Java program that implements method overloading.

5. Write a Java program for sorting a given list of names in ascending order.

6. Write a Java program that displays the number of characters, lines and words in a text file.

7. Write a Java program to implement various types of inheritance

i. Single ii. Multi-Level iii. Hierarchical iv. Hybrid

8. Write a java program to implement runtime polymorphism.

9. Write a Java program which accepts withdraw amount from the user and throws an exception "In

Sufficient Funds" when withdraw amount more than available amount.

10. Write a Java program to create three threads and that displays "good morning", for every one second, "hello" for every 2 seconds and "welcome" for every 3 seconds by using extending Thread class.

11. Write a Java program that creates three threads. First thread displays "OOPS", the second thread displays "Through" and the third thread Displays "JAVA" by using Runnable interface.

12. Implement a Java program for handling mouse events when the mouse entered, exited, clicked, pressed, released, dragged and moved in the client area.

13. Implement a Java program for handling key events when the key board is pressed, released, typed.
14. Write a Java swing program that reads two numbers from two separate text fields and display sum of two numbers in third text field when button "add" is pressed.

15. Write a Java program to design student registration form using Swing Controls. The form which having the following fields and button SAVE

Form Fields are: Name, RNO, Mailid, Gender, Branch, Address.

Semester IV

Course 9: Database Management Systems

Credits -3

Learning Objectives:

To familiarize with concepts of database design

Learning Outcomes:

On successful completion of the course, students will be able to

1. Differentiate between database systems and file based systems

2. Design a database using ER model

3. Use relational model in database design

4. Use SQL commands for creating and manipulating data stored in databases. 5. Write PL/SQL programs to **work** with databases.

UNIT- I

Overview of Database Management System: Introduction to data, information, database, database management systems, file-based system, Drawbacks of file-Based System, database approach, Classification of Database Management Systems, advantages of database approach, Various Data Models, Components of Database Management System, three schema architecture of data base, costs and risks of database approach.

UNIT - II

Entity-Relationship Model: Introduction, the building blocks of an entity relationship diagram, classification of entity sets, attribute classification, relationship degree, relationship classification, reducing ER diagram to tables, enhanced entity-relationship model (EER model), generalization and specialization, IS A relationship and attribute inheritance, multiple inheritance, constraints on specialization and generalization, advantages of ER modeling.

UNIT - III

Relational Model: Introduction, CODD Rules, relational data model, concept of key, relational integrity, relational algebra, relational algebra operations, advantages of relational algebra,limitations of relational algebra, Functional dependencies and normal forms upto 3rd normal form.

UNIT - IV

Structured Query Language: Introduction, Commands in SQL, Data Types in SQL, Data Definition Language, Selection Operation, Projection Operation, Aggregate functions, Data Manipulation Language, Table Modification Commands, Join Operation, Set Operations, View, Sub Query.

UNIT - V

PL/SQL: Introduction, Shortcomings of SQL, Structure of PL/SQL, PL/SQL Language Elements,Data Types, Operators Precedence, Control Structure, Steps to Create a PL/SQL, Program, Iterative Control, Procedure, Function, Database Triggers, Types of Triggers.

Text Books:

1. Operating System Principles by Abraham Silberschatz, Peter Baer Galvin and GregGagne (7th Edition) Wiley India Edition.

Reference Books

1. Database Management Systems by Raghu Ramakrishnan, McGrawhill

2. Principles of Database Systems by J. D. Ullman

3. Fundamentals of Database Systems by R. Elmasri and S. Navathe

4. SQL: The Ultimate Beginners Guide by Steve Tale.

SUGGESTED CO-CURRICULAR ACTIVITIES & EVALUATION METHODS:
Unit 1: Activity: Seminar Presentation on Database Management Systems
Evaluation Method: Depth of research, clarity of explanations, ability to addressquestions and engage the audience.
Unit 2: Activity: Case Study on EER model
Evaluation Method: Identification of inheritance relationships, effective use of generalization and specialization, and adherence to constraints.
Unit 3: Activity: Exercise on Normalization: Assign students a set of unnormalized tables andhave them normalize the tables to third normal form
Evaluation Method: Normalized table designs, identification of functional dependencies,adherence to normalization rules, and elimination of anomalies.
Unit 4: Activity: Competition on SQL Query Writing
Evaluation Method: Query correctness, efficiency, proper use of SQL commands, abilityto handle complex scenarios, and creativity in query formulation.
Unit 5: Activity: Peer Review of PL/SQL code
Evaluation Method: Peer evaluation of code quality, adherence to coding standards,proper use of language elements, and logic.

IV Semester

Course 9: Database Management Systems

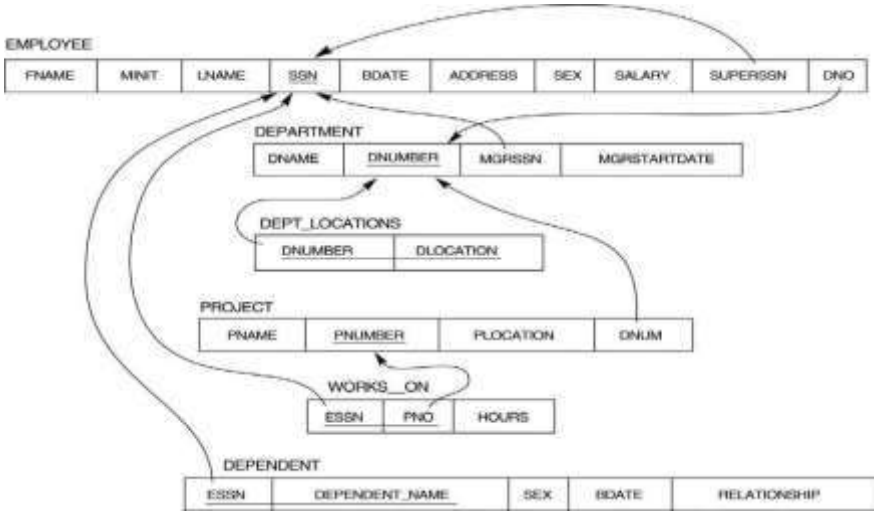
Credits -1

List of Experiments:

1. Draw ER diagram for hospital administration
2. Creation of college database and establish relationships between tables

3. Relational database schema of a company is given in the following figure.

Relational Database Schema – COMPANY



Questions to be performed on above schema

1.Create above tables with relevant Primary Key, Foreign Key and other constraints
2.Populate the tables with data
3.Display all the details of all employees working in the company.
4.Display ssn, lname, fname, address of employees who work in department no 7.
5.Retrieve the Birthdate and Address of the employee whose name is 'Franklin T. Wong'
6.Retrieve the name and salary of every employee
7.Retrieve all distinct salary values
8.Retrieve all employee names whose address is in ‘Bellaire’
9.Retrieve all employees who were born during the 1950s
10. Retrieve all employees in department 5 whose salary is between 50,000 and 60,000(inclusive)
11. Retrieve the names of all employees who do not have supervisors
12. Retrieve SSN and department name for all employees
13. Retrieve the name and address of all employees who work for the 'Research' department
14. For every project located in 'Stafford', list the project number, the controlling department number, and the department manager's last name, address, and birth date.
15. For each employee, retrieve the employee's name, and the name of his or her immediate supervisor.
16. Retrieve all combinations of Employee Name and Department Name

17. Make a list of all project numbers for projects that involve an employee whose last nameis 'Narayan' either as a worker or as a manager of the department that controls the project.
18. Increase the salary of all employees working on the 'Product X' project by 15%. Retrieve employee name and increased salary of these employees.
19. Retrieve a list of employees and the project name each works in, ordered by the employee's department,and withineachdepartmentordered alphabeticallybyemployeefirst name.
20. Select the names of employees whose salary does not match with salary of any employeein department 10.
21. Retrieve the employee numbers of all employees who work on project located in Bellaire, Houston, or Stafford.
22. Find the sum of the salaries of all employees, the maximum salary, the minimum salary,and the average salary. Display with proper headings.
23. Find the sum of the salaries and number of employees of all employees of the 'Marketing' department, as well as the maximum salary, the minimum salary, and the average salary in this department.
24. Select the names of employees whose salary is greater than the average salary of all employees in department 10.
25. Delete all dependents of employee whose ssn is '123456789'.
26. Perform a query using alter command to drop/add field and a constraint in Employee table.

IV Semester
Course 12: Web Interface Designing Technologies
Credits -3

Learning Objectives:

To enable students to understand web architecture, develop aesthetic websites, create static and dynamic web pages, implement user interactivity, and gain proficiency in installing and utilizing WordPress and plugins

Learning Outcomes:
On successful completion of the course, students will be able to

1. Understand and appreciate the web architecture and services along with its basic building blocks.
2. Gain knowledge about various components of a website related to aesthetics
3. Demonstrate skills regarding creation of a static website and addition of dynamic behaviorto a website
4. Get experience on making user-interactive web pages.
5. Learn how to install word press and gain the knowledge of installing various plugins to usein their websites.

UNIT - I
HTML: Introduction to web designing, difference between web applications and desktop applications, introduction to HTML, HTML structure, elements, attributes, headings, paragraphs, images, tables, lists, blocks, symbols, embedding multi-media components in HTML, HTML forms
UNIT – II
CSS: CSS home, introduction, syntax, CSS combinators, colors, background, borders, margins, padding, height/width, text, fonts, tables, lists, position, overflow, float, pseudo class, pseudo elements, opacity, tool tips, image gallery, CSS forms, CSS counters.
UNIT – III
Java Script: What is DHTML, JavaScript, basics, variables, operators, statements, string manipulations, mathematical functions, arrays, functions. objects, regular expressions, exception handling.
UNIT-IV
Client-Side Scripting: Accessing HTML form elements using Java Script object model, basic data validations, data format validations, generating responsive messages, opening windows using java script, different kinds of dialog boxes, accessing status bar using java script, embedding basic animative features using different keyboard and mouse events.
UNIT – V
Word press: Introduction to word press, features, and advantages, installing and configuring word press and understanding its admin panel (demonstration only), working with posts, managing pages, working with media - Adding, editing, deleting media elements, working with widgets, using menus, working with themes, defining users, roles and profiles, adding external links, extending word press with plug-ins.

Text Book(s)

1. Chris Bates, Web Programming Building Internet Applications, Second Edition, Wiley (2007)
2. Paul S.WangSanda S. Katila, an Introduction to Web Design plus Programming, Thomson (2007).
Reference Books
1. Head First HTML and CSS, Elisabeth Robson, Eric Freeman, O'Reilly Media Inc.

2. An Introduction to HTML and JavaScript: for Scientists and Engineers, David R. Brooks. Springer, 2007
3. Schaum's Easy Outline HTML, David Mercer, Mcgraw Hill Professional. 4. Word press for Beginners, Dr.Andy Williams.
5. Professional word press, Brad Williams, David damstra, Hanstern. SUGGESTED CO-CURRICULAR

ACTIVITIES & EVALUATION METHODS:

Unit 1: Activity: Infographic explaining the necessity to have a web site for each of the agenciessuch as hotels, hospitals, supermarkets, and educational institutions.
Evaluation Method: Assess the accuracy, visual design, clarity, creativity, use of visual elements, presentation of the infographic explaining the necessity ofa website for different agencies.
Unit 2: Activity: Seminar though PPT on various Look and Feel components that websites relatedto different agencies
Evaluation Method: Content knowledge, organization, clarity, presentation skills, visualaids, audience engagement
Unit 3: Activity: Code snippets Challenge.
Evaluation Method: Accuracy, functionality, efficiency, code readability, and problem-solving approach of the JavaScript code snippets
Unit 4: Activity: Group discussion on different kinds of web forms that take and validate userinput using java script validations
Evaluation Method: Active participation, knowledge sharing, critical thinking, and demonstration of different web forms and JavaScript validations
Unit 5: Activity: Creation of Personal website using wordpress
Evaluation Method: Design aesthetics, functionality, user interactivity, contentorganization, and utilization of plugins.

IV Semester
Course 12: Web Interface Designing Technologies
Credits -1

List of Experiments:

1. Create an HTML document with the following formatting options:

(a)Bold, (b) Italics, (c) Underline, (d) Headings (Using H1 to H6 heading styles), (e)Font (Type, Size and Color), (f) Background (Colored background/Image in background), (g) Paragraph, (h) Line Break, (i) Horizontal Rule, (j) Pre tag

2. Create an HTML document which consists of:

(a) Ordered List (b) Unordered List (c) Nested List (d) Image

3. Create a Table with four rows and five columns. Place an image in one column.

4. Using “table” tag, align the images as follows:

5. Create a menu form using html.

6. Style the menu buttons using CSS.

7. Create a form using HTML which has the following types of controls:
(a) Text Box (b) Option/radio buttons (c) Check boxes (d) Reset and Submit buttons

8. Embed a calendar object in your web page.

9. Create a form that accepts the information from the subscriber of a mailing system.

Word press:

10. Installation and configuration of word press

11. Access admin panel and manage posts

12. Access admin panel and manage pages

13. Add widgets and menus
14. Create users and assign roles

15. Create a site and add a theme to it

V Semester
Course 10: Object Oriented Software Engineering
Credits -3

Course Objective:
To introduce Object-oriented software engineering (OOSE) - which is a popular technical approach to analyzing, designing an application, system, or business by applying the object- oriented paradigm and visual modeling.

Course Outcomes:
Upon successful completion of the course, a student will be able to:
1. Understand and apply the fundamental principles of Object-Oriented Programming (OOP) concepts and Unified Modeling Language (UML) basics, in the development of software solutions.
2. Analyze and specify software requirements, develop use cases and scenarios, apply object-oriented analysis and design (OOAD) principles
3. Familiar with the concept of test-driven development (TDD) and its practicalimplementation 4. Analyze and Evaluate Software Maintenance and Evolution Strategies
5. Apply Advanced Object-Oriented Software Engineering Concepts

UNIT-I
Introduction to Object-Oriented Programming: Overview of software engineering, Introduction to Object-Oriented Programming (OOP) concepts (classes, objects, inheritance, polymorphism), Unified Modelling Language (UML) basics, Introduction to software development process and software development life cycle (SDLC).

UNIT-II
Requirements Analysis and Design: Requirements analysis and specification, Use cases and scenarios, Object-oriented analysis and design (OOAD), Design patterns, UML modelling techniques (class diagrams, sequence diagrams, state machine diagrams, activity diagrams)

UNIT-III
Software Construction and Testing: Software construction basics, Object-oriented design principles, Object-oriented programming languages (Java, C++, Python), Software testing basics (unit testing, integration testing, system testing), Test-driven development (TDD)

UNIT-IV
Software Maintenance and Evolution: Software maintenance basics, refactoring techniques Software version control, Code review and inspection, Software evolution and reengineering

UNIT-V
Advanced Topics in Object-Oriented Software Engineering: Model-driven engineering (MDE), Aspect-oriented programming (AOP), Component-based software engineering (CBSE), Service-oriented architecture (SOA), Agile software development and Scrum methodologies.

Text Book(s)
1. An Introduction to Object-Oriented Analysis and Design and the Unified Process, 3rd Edition, Craig Larman, Prentice-Hall.
2. Programming in Java by Sachin Malhotra, Oxford University Press Reference Books
1. Requirements engineering: processes and techniques, G.Kotonya and, I.Sommerville,1998, Wiley
2. Design Patterns, E.Gamma, R. Helm, R. Johnson, and J. Vlissides
3. The Unified Modeling Language Reference Manual, J. Rumbaugh, I.Jacobson and G. Booch, Addison Wesley

SUGGESTED CO-CURRICULAR ACTIVITIES & EVALUATION METHODS: Unit 1: Activity: Group Activity: Design and implement a small OOP project
Evaluation Method: Presentation evaluation rubric, Project evaluation based on OOP principles.
Unit 2: Activity: Use Case Scenario Presentation & Peer Activity: Review and provide feedback on each other's use case diagrams
Evaluation Method: Presentation evaluation rubric, Peer feedback assessment. Unit 3: Activity: Poster Presentation: Illustrate TDD principles and benefits
Evaluation Method: Poster presentation evaluation
Unit 4: Activity: Peer Activity: Analyze and discuss different maintenance strategies Evaluation Method: Peer discussion participation evaluation
Unit 5: Activity: Seminar on Design Patterns
Evaluation Method: Depth of research, clarity of explanations, ability to addressquestions and engage the audience.

IV Semester
Course 10: Object Oriented Software Engineering
Credits -1

Suggested Software Tools: StarUML/UMLGraph/Topcased/Umberollo/ArgoUML/ Eclipse IDE,

Visual Paradigm for UML/Rational Software Architect/Any other Open Source Tool

List of Experiments:

Select domain of interest (e.g. College Management System) and identify multi-tier software application to work on (e.g. Online Fee Collection). Analyze, design and develop this application using OOSE approach:
1. Develop an IEEE standard SRS document. Also develop risk management and project plan (Gantt chart).
2. Understanding of System modeling: Data model i.e. ER – Diagram and draw the ER Diagram with generalization, specialization and aggregation of specified problem statement
3. Understanding of System modeling: Functional modeling: DFD level 0 i.e. ContextDiagram and draw it
4. Understanding of System modeling: Functional modeling: DFD level 1 and DFD level 2 and draw it.
5. Identify use cases and develop the use case model.
6. Identify the business activities and develop an UML Activity diagram.
7. Identity the conceptual classes and develop a domain model with UML Class diagram.
8. Using the identified scenarios find the interaction between objects and represent them using UML Interaction diagrams.
9. Draw the state chart diagram.
10. Identify the user interface, domain objects, and technical services. Draw the partial layered, logical architecture diagram with UML package diagram notation.
11. Implement the technical services layer.
12. Implement the domain objects layer.
13. Implement the user interface layer.
14. Draw component and deployment diagrams.

V Semester
Course 13: Web Applications Development using PHP & MYSQL
Credits -3

Learning Objectives:

To enable students to understand open-source tools to create dynamic web pages, implement user interactivity, and gain proficiency in developing web sites

Learning Outcomes: On successful completion of the course, students will be able to

1. Write simple programs in PHP.

2. Understand how to use regular expressions, handle exceptions, and validate data using PHP.

3. Apply In-Built functions and Create User defined functions in PHP programming.

4. Write PHP scripts to handle HTML forms.

5. Know how to use PHP with a MySQL database and can write database driven web pages.

UNIT-I
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: Creating functions, Calling functions, Returning the values from User- Defined Functions, Variable Scope, Saving state between Function calls with the static statement,arguments of functions
UNIT-II
Working with Arrays: Creating Arrays, Some Array-Related Functions.
Working with Objects: Creating Objects, Accessing Object Instances, Working with Strings, Dates and Time: Formatting 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, Redirectingthe user, Sending Mail on Form Submission, and Working with File Uploads, Managing files onserver, Exception handling.
UNIT-IV
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-V
Interacting with MySQL using PHP: MySQL Versus MySQLi Functions, connecting to MySQL with PHP, Working with MySQL Data. Planning and Creating Database Tables, Creating Menu, Creating Record Addition Mechanism, Viewing Records, Creating the Record Deletion Mechanism.

Text Book(s)
1. Julie C. Meloni, SAMS Teach yourself PHP MySQL and Apache, Pearson Education (2007). 2. Steven Holzner , PHP: The Complete Reference, McGraw-Hill
Reference Books

1. Robin Nixon, Learning PHP, MySQL, JavaScript, CSS & HTML5, Third Edition O'reilly, 2014
2. Xue Bai Michael Ekedahl, The web warrior guide to Web Programming, Thomson (2006). SUGGESTED CO-CURRICULAR ACTIVITIES & EVALUATION METHODS:
Unit 1: Activity: Infographic explanation of client-server architecture and different server-side scripting languages.
Evaluation Method: Assess the accuracy, visual design, clarity, creativity, use of visual elements, presentation of the infographic explaining the benefits of server-side scripting languages.
Unit 2: Activity: Presentation on various open-source frameworks available in LAMP model Evaluation Method: Content knowledge, organization, clarity, presentation skills, visual
aids, audience engagement Unit 3: Activity: Code snippets Challenge.
Evaluation Method: Accuracy, functionality, efficiency, code readability, and problem-solving approach of the PHP code snippets
Unit 4: Activity: Group discussion on Session Management in PHP
Evaluation Method: Active participation, knowledge sharing, critical thinking, and demonstration of Session Management
Unit 5: Activity: Hands-on Lab Session on MYSQL Queries
Evaluation Method: Lab Performance and Correctness of solution Implementation

V Semester
Course 13: Web Applications Development using PHP & MYSQL
Credits -1

List of Experiments:

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 display Fibonacci series.

4. Write a PHP Program to read the employee details.

5. Write a PHP program to prepare the student marks list.

6. Create student registration form using text box, check box, radio button, select, submit button.And display user inserted value in new PHP page.
7. Create Website Registration Form using text box, check box, radio button, select, submitbutton. And display user inserted value in new PHP page.
8. Write PHP script to demonstrate passing variables with cookies.
9. Write a PHP script to connect MySQL server from your website.
10. Write a program to keep track of how many times a visitor has loaded the page.
11. Write a PHP application to perform CRUD (Create, Read, Update and Delete) operations on a database table.
12. Create a web site using any open-source framework built on PHP and MySQL – It is a team activity wherein students are divided into multiple groups and each group comes up with theirown website with basic features.

Government College for Women(Autonomous)Srikakulam

Reaccredited by NAAC with 'A' Grade during 3rd Cycle (CGPA 3.09)

RESOLUTIONS/MINUTES OF BOARD OF STUDIES MEETING HELD ON 27TH SEPTEMBER,2023

1. It is resolved to adopt CBCS for all semesters
2. It is resolved to approve Major subjects and Minor subjects syllabi and Model question papers for 2023-24 admitted batch
3. It is resolved to ratify syllabi and Model question papers for 2021-22, 2022-23 admitted batches
4. It is resolved to ratify semester mode pattern of examination for all students.
5. It is resolved to ratify Continuous Assessment System (CAS) for all admitted batches
6. 60-40 pattern for 2022-23, 2023-24 admitted batches (Blue print)
7. 75-25 pattern for 2021-22, 2020-21 admitted batches (Blue print)
8. It is resolved to ratify Life skill, Multidisciplinary and Skill development courses for 2023-24 admitted batch for all semesters
9. It is resolved to ratify Life skill and Skill enhanced courses for 2021-22 & 2022-23 admitted batches
10. It is resolved to ratify LSC, SDC for 50 marks external pattern (No Internals)
11. It is resolved to approve List of examiners,List of Paper setters
12. It is resolved to approve Innovative learning and evaluation techniques
13. It is resolved to approve students seminars, workshops, fieldtrips & student centric activities, student projects and student research
14. It is resolved to approve ICT Mode of learning
15. It is resolved to encourage students to join extension activities i.e., JKC, NSS etc…
16. It is resolved to encourage students for Certificate courses, Mou's, outreach programmes etc..
17. It is resolved to approve CSP after second semester, short term internship after IVth semester and long term internship in VIth semester for all admitted students.

Member 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. S. Jhansi Rani Designation: Associate 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:Dr.V.S.Krishna College(A),Vishakhapatnam	
4.	Subject Expert (Nominated By Academic Council)	Name : Smt J.Sharmila Rani Lecturer in Computer Applications GDC, Gajapathinagaram	
5.	Member of Industrial	Name : Mr.I.V.Anil Kumar Designation :Principal Team Lead, Zebra Technologies, Banglore	
6.	Member of Alumni	Name: Kum.M.GayatriVarshitha Pursuing M.Sc Computer Science Dr.BR.AmbedakarUniversity,Etcherla	
7.	Members of Department	1) Smt S.Vani Kumari, Lecturer in Computer Applications GCW(A),Srikaulam 2)Smt. S. MadhaviLatha, Lecturer in Computer Applications GCW(A),Srikaulam 3)Smt G. SumaLatha, Lecturer in Computer Science, GCW(A),Srikaulam	