ANDHRA LOYOLA COLLEGE (AUTONOMOUS)::VIJAYAWADA

B.Sc., COMPUTER SCIENCE STRUCTURE & SYLLABUS

DEPARTMENT OF COMPUTER SCIENCE

DEPARTMENT OF COMPUTER SCIENCE – COURSE STRUCTURE SEMESTER I, II, III, IV, V & VI (REVISED CBCS) B. Sc., – Maths, Physics, Computer Science; Maths, Statistics, Computer Science; Maths, Computer Science, Electronics B. Sc., – Electronic Technology, Computer Science					
Year	**Semester**	**Course**	**Title of the Course**	**No. of Hrs/W**	**No. of Credits**
1	I	1	Problem Solving using Computers & Python Programming	4	3
			Python Programming Lab	2	2
		LSC	Computer Applications	2	2
	II	2	Data Structures	4	3
			Data Structures using 'C' Lab	2	2
		LSC	Computer Applications	2	2
2	III	3	Database Management Systems	4	3
			MySQL Lab	2	2
	IV	4	Operating System	4	3
			Unix Lab	2	2
		5	Object Oriented Programming with Java	4	3
			Java lab	2	2
3	V	6A	Web Interface Designing Technologies	3	3
			Web Technology lab (HTML & CSS)	3	2
		7A	Web Applications Development using PHP& MYSQL	3	3
			PHP & MySql LAB)	3	2
	VI		INTERNSHIP		

ANDHRA LOYOLA COLLEGE (AUTONOMOUS) VIJAYAWADA-520008

DEPARTMENT OF COMPUTER SCIENCE

FOR B.Sc., (MPCs, MStCs, MElCs & METCs)

(Revised CBCS 2020-21 Batch onwards)

I B.Sc., - SEMESTER 1 **CORE PAPER** **Course Code: CS111PPP**

Title of the Course: PROBLEM SOLVING USING COMPUTERS & PYTHON PROGRAMMING

Total Hrs / Semester:60 **MaxMarks:100**

Hrs/W:4 **Total Credits:3**

COURSE OUTCOMES: By successful completion of the course, students will be able to:

- ***Learn to apply fundamental problem solving techniques.***
- ***Describe the core syntax and semantics of Python programming language.***
- ***Learn and understand python looping, control statements and string manipulations.***
- ***Define and demonstrate the use of built-in data structures lists, dictionaries, tuples and sets***
- ***Understand the Python programming language and it's rich set of libraries, applications where Python programming is effective***

SYLLABUS

Unit I: **(12Hrs)**

Planning the Computer Program: Concept of problem solving, Problem definition, Program design, Debugging, Types of errors in programming, Documentation.

Techniques of Problem Solving: Flowcharting, decision table, algorithms, Structured programming concepts, Programming methodologies viz. top-down and bottom-up

Unit II: **(12Hrs)**

Overview of Programming: Structure of a Python Program, programming. Elements of Python.

Introduction to Python: Python Interpreter, Using Python as calculator, Python shell, Indentation. Atoms, Identifiers and keywords, Literals, Strings, Operators (Arithmetic operator, Relational operator, Logical or Boolean operator, Assignment, Operator, Ternary operator, Bit wise operator, Increment or Decrement operator

Unit III: **(12Hrs)**

Creating Python Programs: Input and Output Statements, Control statements (Looping- while Loop, for Loop Loop Control, Conditional Statement- if...else, Difference between break, continue and pass).

Unit IV: **(12Hrs)**

Structures: Numbers, Strings, Lists, Tuples, Dictionary, Date & Time, Modules, Defining Functions, Exit function, default arguments.

Unit V: **(12Hrs)**

Introduction to Advanced Python: Objects and Classes, Inheritance, Regular Expressions

REFERENCE BOOKS:

1. P. K. Sinha & Priti Sinha, "**Computer Fundamentals**", BPB Publications, 2007.
2. Dr. Anita Goel, "**Computer Fundamentals**", Pearson Education, 2010.
3. T. Budd "**Exploring Python**", TMH, 1st Edition, 2011
4. Mark Lutz "**Python Pocket Reference**", O'Reilly 5th Edition 2016
5. Martin C. Brown "**Python The Complete Reference**" Mc Graw Hill

WEB LEARNING RESOURCES:

- **i.** https://docs.python.org/tutorial/
- **ii.** https://www.learn python.org
- **iii.** https://www.w3schools.com

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. Others

RECOMMENDED CONTINUOUS ASSESSMENT METHODS:

Some of the following suggested assessment methodologies could be adopted;

- ✔ The oral and written examinations (Scheduled and surprise tests),
- ✔ Closed-book test,
- ✔ Programming exercises,
- ✔ Practical assignments and laboratory reports,
- ✔ Observation of practical skills,

- ✔ Individual and group project reports.
- ✔ Efficient delivery using seminar presentations,
- ✔ Viva voce interviews.
- ✔ Computerized adaptive testing, literature surveys and evaluations,
- ✔ Peers and self-assessment, outputs form individual and collaborative work

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DEPARTMENT OF COMPUTER SCIENCE

FOR B.Sc., (MPCs, MStCs, MElCs & METCs)

(Revised CBCS 2020-21 Batch onwards)

I B.Sc., - SEMESTER 1 **PRACTICAL** **Course Code: CS111PPP(P)**

Title of the Course: PYTHON PROGRAMMING LAB

No. of Hrs 2 / W **Total No. of Hrs 30 / Sem** **No. of Credits: 2**

COURSE OUTCOMES: On successful completion of this practical course, the student will be able to:

- ***Describe the core syntax and semantics of Python programming language***
- ***Work with the control flow statements***
- ***discover the need for working with the strings and functions***
- ***Illustrates the process of structuring the data using lists, dictionaries, tuples and sets***
- ***understand the Python programming language and it's rich set of libraries, applications where Python programming is effective***
- ***understand object oriented programming concepts***

List of Experiments:

1. Write a Python Program to print prime number up to a given range
2. Write a Python Program to check whether the given number is Armstrong number or not
3. Write a Python Program to print perfect number
4. Write a Python Program to check whether the given number is palindrome or not
5. Write a Python Program to check whether the given number is Strong Number
6. Write a menu driven program to convert the given temperature from Fahrenheit to Celsius and vice versa depending upon User's choice.

7. WAP to calculate total marks, percentage and grade of a student. Marks obtained in each of the three subjects are to be input by the user. Assign grades according to the following criteria:

Grade A: Percentage >=80 Grade B: Percentage>=70 and <80

Grade C: Percentage>=60 and <70 Grade D: Percentage>=40 and <60

Grade E: Percentage<40

8. Write a menu-driven program, using user-defined functions to find the area of rectangle, square, circle and triangle by accepting suitable input parameters from user.

9. Write a Python Program to display the first n terms of Fibonacci series.

10. Write a Python Program to find factorial of the given number.

11. Write a Python Program to find the factors of a given number.

12. Write a Python Program to calculate the sum and product of two compatible matrices.

13. Write a Python Program to find the biggest, second biggest, smallest and second smallest among the given numbers

14. Write a Python Program to Mathematical table up to 20

15. Write a menu-driven program to implement data types list, tuple and dictionary

16. Write a menu-driven program to 1.function with arguments 2. Function without arguments

17. Write a Python Program to draw shapes of line, circle and rectangle

18. Write a Python Program to print the pattern 1 11 111 1111 11111...

19. Write a Python Program to find factorial of the given number using recursion.

20. Write a menu-driven program by using user-defined functions to find the

velocity (v = u+at),

distance write time (s = ut+1/2*a*t*t),

distance write velocity (s = v*v-u*u)/(2*a)

21. Write a python program to implement class and objects

22. Write a python program to implement inheritance

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DEPARTMENT OF COMPUTER SCIENCE

FOR B.Sc., (MPCs, MStCs, MElCs & METCs)

(Revised CBCS 2020-21 Batch onwards)

II B.Sc., - SEMESTER III **CORE PAPER** **Course Code: CS233DBMS**

Title of the Course: DATABASE MANAGEMENT SYSTEMS

Total Hrs / Semester:60 **MaxMarks:100**

Hrs/W:4 **Total Credits:3**

COURSE OUTCOMES: On completing the subject, students will be able to:

- ***Understand the fundamental concepts of DBMS with special emphasis on relational data model.***
- ***Demonstrate an understanding of normalization theory and apply such knowledge to the normalization of a database***
- ***Model database using ER Diagrams and design database schemas based on the model.***
- ***Create a small database using SQL.***
- ***Store, Retrieve data in database.***

SYLLABUS

Unit I: **(12Hrs)**

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: **(12Hrs)**

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 modelling.

Unit III: **(12Hrs)**

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, relational calculus, tuple relational calculus, domain relational Calculus (DRC), Functional dependencies and normal forms upto 3rd normal form.

Unit IV: **(12Hrs)**

Structured Query Language: Introduction, History of SQL Standard, 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 : **(12Hrs)**

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.

REFERENCE BOOKS:

1. Abraham Silberschatz, Henry Korth, and S. Sudarshan "**Database Systems Concepts**", Mc Graw Hill
2. Raghu Rama krishnan "**Database Management System**s", 3rd Edition, Mc Grawhill
3. J. D. Ullman "**Principles of Database Systems**" Galgotia, 3rd Edition 2008
4. R. Elmasri and S. Navathe "**Fundamentals of Database Systems**", 7th Edition, Pearson
5. Steve Tale "**SQL: The Ultimate Beginners Guide**"
6. Sharad Maheshwari "**Introduction to SQL and PL / SQL**", 1st Edition, Laxmi, 2016

WEB LEARNING RESOURCES:

1. www.geeksforgeeks.org/dbms
2. www.w3schools.com/sql
3. www.javapoint.com/pl-sql-tutorial

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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
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RECOMMENDED CONTINUOUS ASSESSMENT METHODS:

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- ✔ Efficient delivery using seminar presentations,
- ✔ Viva voce interviews.
- ✔ Computerized adaptive testing, literature surveys and evaluations,
- ✔ Peers and self-assessment, outputs form individual and collaborative work

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(Revised CBCS 2020-21 Batch onwards)

II B.Sc., - SEMESTER III **PRACTICAL** **Course Code: CS233DBMS(P)**

Title of the Course: MySQL LAB

No. of Hrs. 3 /W **Total No. of Hrs. 30 / Sem** **No.of Credits: 2**

COURSE OUTCOMES: On successful completion of this practical course, the student will be able to;

- ***Understand how to create and maintain database using SQL Commands***
- ***Using DDL Commands (Create, Alter, Drop, Truncate and Rename)***
- ***Using DML Commands (Select, Insert, Update and Delete)***
- ***Working with SQL Queries using where clause and Operators in, between, like etc.***

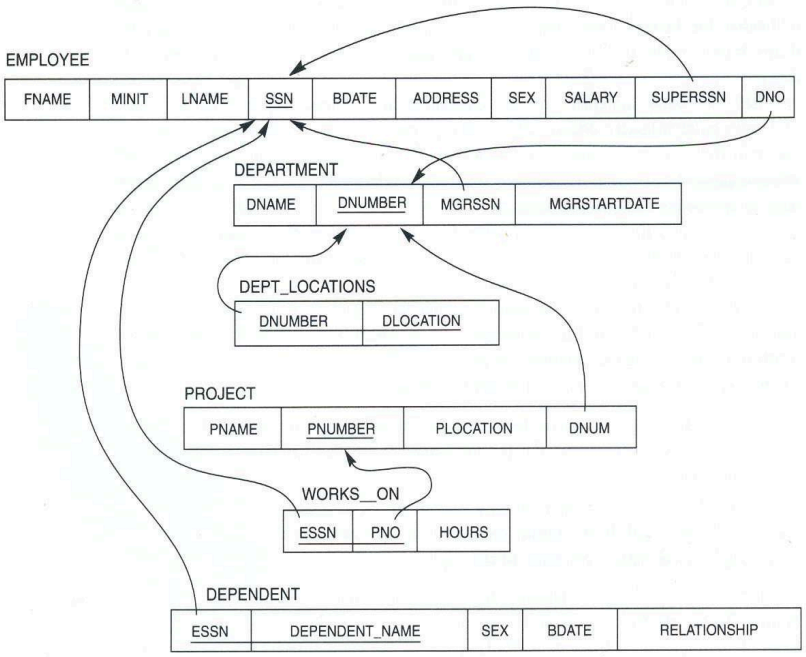
- ***Working with Joins , Nested Queries ,Triggers and Pl/SQL Programs***

List of Experiments:

Draw ER diagram for hospital administration

1. Creation of college database and establish relationships between tables
2. 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 name is '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 'ProductX' 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 within each department ordered alphabetically by employee first name.

20. Select the names of employees whose salary does not match with salary of any employee in 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.

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DEPARTMENT OF COMPUTER SCIENCE

FOR B.Sc., (MPCs, MStCs, MElCs & METCs)

(Revised CBCS 2020-21 Batch onwards)

III B.Sc., - SEMESTER V **CORE PAPER** **Course Code: CS356WDT**

Title of the Course: **Web Interface Designing Technologies**

Total Hrs / Semester: 50 **MaxMarks:100**

Hrs/W: 3 **Total Credits:3**

Learning Outcomes: Students after successful completion of the course will be able to:

- Understand and appreciate the web architecture and services.
- Gain knowledge about various components of a website.
- Demonstrate skills regarding creation of a static website and an interface to dynamic website.
- Learn how to install word press and gain the knowledge of installing various plugins to use in their

websites.

SYLLABUS

Unit – I **(10 hours)**

HTML: Introduction to web designing, difference between web applications and desktop applications, introduction to HTML, HTML structure, elements, attributes, headings, paragraphs, styles, colours, HTML formatting, Quotations, Comments, images, tables, lists, blocks and classes, HTML CSS, HTML frames, file paths, layout, symbols, HTML responsive.

Unit – II **(10 hours)**

HTML forms: HTML form elements, input types, input attributes, HTML5, HTML graphics, HTML media – video, audio, plug INS, you tube.

HTML API'S: Geo location, Drag/drop, local storage, HTML SSE.

CSS: CSS home, introduction, syntax, colours, back ground, borders, margins, padding, height/width, text, fonts, icons, tables, lists, position, over flow, float, CSS combinators, pseudo class, pseudo elements, opacity, tool tips, image gallery, CSS forms, CSS counters, CSS responsive.

Unit – III **(10 hours)**

Client side Validation: 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. DHTML with JavaScript **-** Data validation, opening a new window, messages and confirmations, the status bar, different frames, rollover buttons, moving images.

Unit – IV **(10 hours)**

Word press: Introduction to word press, servers like wamp, bitnami e.tc, installing and configuring word press, understanding admin panel, working with posts and pages, using editor, text formatting with shortcuts, working with media-Adding, editing, deleting media elements, working with widgets, menus.

Unit – V **(10 hours)**

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 , protecting word press website from hackers.

References

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).
3. Head First HTML and CSS, Elisabeth Robson, Eric Freeman, O'Reilly Media Inc.
4. An Introduction to HTML and JavaScript: for Scientists and Engineers, David R. Brooks.

Springer, 2007
5. Schaum's Easy Outline HTML, David Mercer, Mcgraw Hill Professional.
6. Word press for Beginners, Dr.Andy Williams.
7. Professional word press, Brad Williams, David damstra, Hanstern.
8. Web resources:
    1. http://www.codecademy.com/tracks/web
    2. http://www.w3schools.com
    3. https://www.w3schools.in/wordpress-tutorial/
    4. http://www.homeandlearn.co.uk
9. Other web sources suggested by the teacher concerned and the college librarian including reading material.

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DEPARTMENT OF COMPUTER SCIENCE

FOR B.Sc., (MPCs, MStCs, MElCs & METCs)

(Revised CBCS 2020-21 Batch onwards)

III B.Sc., - SEMESTER V **PRACTICAL** **Course Code: CS356WDT(P)**

Title of the Course: **Web Interface Designing Technologies LAB**

Total Hrs / Semester: 30 **MaxMarks:100**

Hrs/W: 3 **Total Credits:2**

I. **Learning Outcomes:** On successful completion of this practical course, student shall be able to:

- Create a basic website with the help of HTML and CSS.
- Acquire the skill of installing word press and various plugins of Word press.
- Create a static website with the help of Word press.
- Create an interface for a dynamic website.
- Apply various themes for their websites using Word press.

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:**

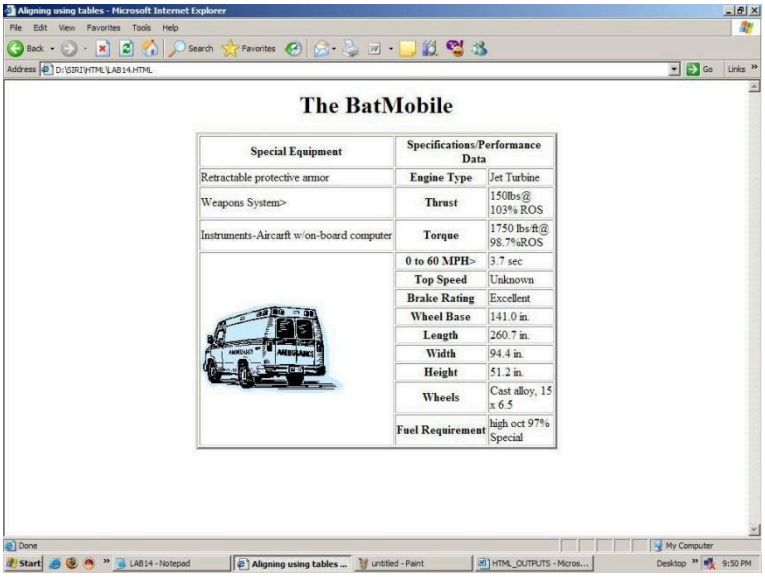
5. Create a menu form using html.
6. Style the menu buttons using css.
7. Create a form using HTML which has the following types of controls:
   (a) Text Box (b) Option/radio buttons (c) Check boxes (d) Reset and Submit buttons
8. Embed a calendar object in your web page.

9. Create an applet that accepts two numbers and perform all the arithmetic operations on them.

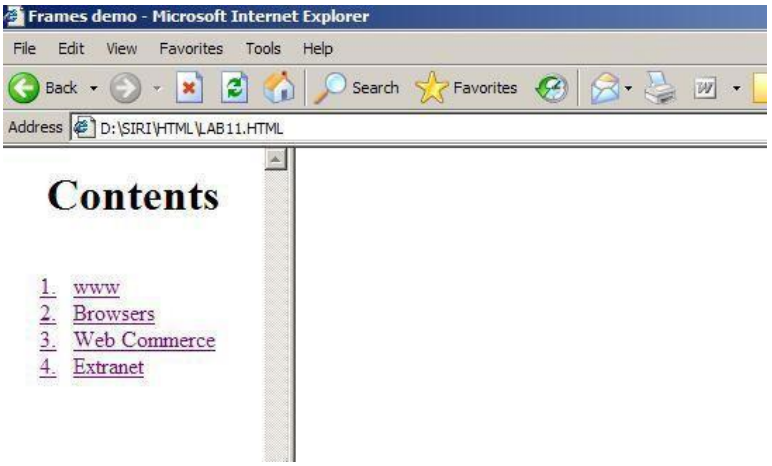
10. Create nested table to store your curriculum.

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

12. Design the page as follows:



13. Create a help file as follows:



14. Create a webpage containing your bio data (assume the form and fields).

15. Write a html program including style sheets.

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

17. Create a static webpage.

Word press:

18. Installation and configuration of word press.

19. Create a site and add a theme to it.

20. 20 Create child theme

21. Create five pages on COVID – 19 and link them to the home page. .

22. Create a simple post with featured image.

23. Add an external video link with size 640 X 360.

24. Create a user and assign a role to him.

25. Create a login page to word press using custom links
26. Create a website for your college.

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(Revised CBCS 2020-21 Batch onwards)

III B.Sc., - SEMESTER V **CORE PAPER** **Course Code: CS357WAD**

Title of the Course: **Web Applications Development using PHP & MYSQL**

Total Hrs / Semester:50 **MaxMarks:100**

Hrs/W: 3 **Total Credits:3**

Learning Outcomes:

Students after successful completion of the course will be able to:

- Write simple programs in PHP.
- Understand how to use regular expressions, handle exceptions, and validate data using PHP.
- Apply In-Built functions and Create User defined functions in PHP programming.
- Write PHP scripts to handle HTML forms.
- Write programs to create dynamic and interactive web based applications using PHP and MYSQL.
- Know how to use PHP with a MySQL database and can write database driven web pages.

SYLLABUS

Unit-1: **(10 hours)**

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: **(10 hours)**

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: **(10 hours)**

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, and 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: **(10 hours)**

Working with Files and Directories: Including Files with inclue(), Validating Files, Creating and Deleting Files, Opening a File for Writing, Reading or Appending, Reading from Files, Writing or Appending to a File, Working with Directories, Open Pipes to and from Process Using popen(), Running Commands with exec(), Running Commands with system() or passthru().

Working with Images: Understanding the Image-Creation Process, Necessary Modifications to PHP, Drawing a New Image, Getting Fancy with Pie Charts, Modifying Existing Images, Image Creation from User Input.

Unit-5: **(10 hours)**

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.

References

1. Julie C. Meloni, SAMS Teach yourself PHP MySQL and Apache, Pearson Education (2007).
2. Steven Holzner , PHP: The Complete Reference, McGraw-Hill
3. Robin Nixon, Learning PHP, MySQL, JavaScript, CSS & HTML5, Third Edition O'reilly, 2014
4. Xue Bai Michael Ekedahl, The web warrior guide to Web Programming, Thomson (2006).
5. Web resources:
    e. http://www.codecademy.com/tracks/php
    f. http://www.w3schools.com/PHP
    g. http://www.tutorialpoint.com
6. Other web sources suggested by the teacher concerned and the college librarian including reading material.

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(Revised CBCS 2020-21 Batch onwards)

III B.Sc., - SEMESTER V **PRACTICAL** **Course Code: CS357WAD(P)**

Title of the Course: **Web Applications Development using PHP & MYSQL LAB**

Total Hrs / Semester:30 **MaxMarks:100**

Hrs/W: 3 **Total Credits:2**

I. Learning Outcomes:

On successful completion of this practical course, student shall be able to:

- Write, debug and implement the Programs by applying concepts and error handling techniques of PHP.
- Create an interactive and dynamic website.
- Create a website with reports generated from a database.
- Write programs to create an interactive website for e-commerce sites like online shopping, etc.

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. Write a PHP program to generate the multiplication of two matrices.
7. Create student registration form using text box, check box, radio button, select, submit button. And display user inserted value in new PHP page.
8. Create Website Registration Form using text box, check box, radio button, select, submit button. And display user inserted value in new PHP page.
9. Write PHP script to demonstrate passing variables with cookies.
10. Write a program to keep track of how many times a visitor has loaded the page.
11. Write a PHP application to add new Rows in a Table.
12. Write a PHP application to modify the Rows in a Table.
13. Write a PHP application to delete the Rows from a Table.
14. Write a PHP application to fetch the Rows in a Table.
15. Develop an PHP application to implement the 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.
16. Write a PHP script to connect MySQL server from your website.
17. Write a program to read customer information like cust-no, cust-name, item- purchased, and mob-no, from customer table and display all these information in table format on output screen.

18. Write a program to edit name of customer to “Kiran” with cust-no =1, and to delete record with cust-no=3.
19. Write a program to read employee information like emp-no, emp-name, designation and salary from EMP table and display all this information using table format in your website.
20. Create a dynamic web site using PHP and MySQL.

SCHEME OF EVALUATION

CORE PAPERS

MODEL QUESTION PAPER FORMAT

Time: 3 Hrs **Max. Marks: 100M**

SECTION- A

I. Answer the following questions **5 x 16 M = 80**

Each answer carries 16 marks (2 questions from each Unit with Internal choice)

I **(A)**

Or UNIT I

(B)

II. **(A)**

Or UNIT II

(B)

III (A)

Or UNIT III

(B)

IV **(A)**

Or UNIT IV

(B)

V **(A)**

Or UNIT V

(B)

SECTION- B

II Answer all the Questions **10 x 2 = 20 M**

Each answer carries 2 marks (2 questions from each Unit)

ANDHRA LOYOLA COLLEGE (AUTONOMOUS) VIJAYAWADA-520008

DEPARTMENT OF COMPUTER SCIENCE

FOR B.Sc., (MPCs, MStCs, MElCs & METCs)

(Revised CBCS 2020-21 Batch onwards)

I B.Sc., - SEMESTER 1 LIFE SKILL COURSE Course Code: LSC111CA

Title of the Course: COMPUTER APPLICATIONS

Total Hrs / Semester: 30 **MaxMarks:50**
Hrs/W:3 **Total Credits:2**

Course Objectives:

This course aims at providing exposure to students in skill development towards basic office applications.

Course Outcomes:*On successful completion of the course, students will be able to:*
After successful completion of the course, student will be able to:

- ***Demonstrate basic understanding of computer hardware and software.***
- ***Apply skills and concepts for basic use of a computer.***
- ***Identify appropriate tool of MS office to prepare basic documents, charts, spreadsheets and presentations.***
- ***Create personal, academic and business documents using MS office.***
- ***Create spreadsheets, charts and presentations.***
- ***Analyse data using charts and spread sheets.***

SYLLABUS

Unit-I: **(05 hrs)**

Basics of Computers: Definition of a Computer-Characteristics of computers, Applications of Computers – Block Diagram of a Digital Computer – I/O Devices, hardware, software human ware, application software, system software, Memories - Primary, Auxiliary and Cache Memory.

Unit – II **(03 hrs)**

MS Windows – Desktop, Recycle bin, My Computer, Documents, Pictures, Music, Videos, Task Bar, Control Panel.

Unit-III: **(08 hrs)**

MS-Word: Features of MS-Word-MS-Word Window Components-Creating, Editing, Formatting and Printing of Documents – Headers and Footers – Insert/Draw Tables, Table Auto format – Page Borders and Shading – Inserting Symbols, Shapes, Word Art, Page Numbers, and Mail Merge.

Unit-IV: **(05 hrs)**

MS-Excel : Overview of Excel features – Creating a new worksheet, Selecting cells, Entering and editing Text, Numbers, Inserting Rows/Columns –Changing column widths and row heights, Formulae, Referencing cells, Changing font sizes and colors, Insertion of Charts, Auto fill, Sort.

Unit-V: **(05 hrs)**

MS-PowerPoint: Features of PowerPoint – Creating a Presentation-Inserting and Deleting Slides in a Presentation – Adding Clip Art/Pictures -Inserting Other Objects, Audio, and Video-Resizing and scaling of an Object – Slide Transition – Custom Animation.

REFERENCE BOOKS:

1. Ron Mansfield "**Working in Microsoft Office**", TMH Publications
2. Sanjay Saxena "**MS Office 2007 in a Nutshel**l", Vikas Publishing House.
3. Michael Price "**Excel 2020 in easy steps**", TMH Publications

ANDHRA LOYOLA COLLEGE (AUTONOMOUS)::VIJAYAWADA

B.Sc., COMPUTER SCIENCE STRUCTURE & SYLLABUS

EVEN SEMESTER

DEPARTMENT OF COMPUTER SCIENCE

PAPER CODE: CSC122DS **(2020 - 23 BATCH)**

ANDHRA LOYOLA COLLEGE (AUTONOMOUS): VIJAYAWADA – 520 008

I – B. Sc., II Semester, COMPUTER SCIENCE - PAPER- 2

DATA STRUCTURES- SYLLABUS

To introduce the fundamental concept of data structures and to emphasize the importance of various data structures in developing and implementing efficient algorithms.

Course Objectives:

To introduce the fundamental concept of data structures and to emphasize the importance of various data structures in developing and implementing efficient algorithms.

Course Learning Outcomes:

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

1. Understand available Data Structures for data storage and processing.
2. Comprehend Data Structure and their real-time applications - Stack, Queue, Linked List, Trees and Graph
3. Choose a suitable Data Structures for an application
4. Develop ability to implement different Sorting and Search methods
5. Have knowledge on Data Structures basic operations like insert, delete, search, update and traversal
6. Design and develop programs using various data structures
7. Implement the applications of algorithms for sorting, pattern matching etc

UNIT – I:

Introduction to Data Structures: Introduction to the Theory of Data Structures, Data Representation, Abstract Data Types, Data Types, Primitive Data Types, Data Structure and Structured Type, Atomic Type, Difference between Abstract Data Types, Data Types, and Data Structures, Refinement Stages

Principles of Programming and Analysis of Algorithms: Software Engineering, Program Design, Algorithms, Different Approaches to Designing an Algorithm, Complexity, Big 'O' Notation, Algorithm Analysis, Structured Approach to Programming, Recursion, Tips and Techniques for Writing Programs in 'C'

UNIT – II:

Arrays: Introduction to Linear and Non- Linear Data Structures, One- Dimensional Arrays, Array Operations, Two-Dimensional arrays, Multidimensional Arrays, Pointers and Arrays, an Overview of Pointers

Linked Lists: Introduction to Lists and Linked Lists, Dynamic Memory Allocation, Basic Linked List Operations, Doubly Linked List, Circular Linked List, Atomic Linked List, Linked List in Arrays, Linked List versus Arrays

UNIT – III:

Stacks: Introduction to Stacks, Stack as an Abstract Data Type, Representation of Stacks through Arrays, Representation of Stacks through Linked Lists, Applications of Stacks, Stacks and Recursion

Queues: Introduction, Queue as an Abstract data Type, Representation of Queues, Circular Queues, Double Ended Queues- Deques, Priority Queues, Application of Queues

UNIT – IV:

Binary Trees: Introduction to Non- Linear Data Structures, Introduction Binary Trees, Types of Trees, Basic Definition of Binary Trees, Properties of Binary Trees, Representation of Binary Trees, Operations on a Binary Search Tree, Binary Tree Traversal, Counting Number of Binary Trees, Applications of Binary Tree

UNIT – V:

Searching and sorting: Sorting – An Introduction, Bubble Sort, Insertion Sort, Merge Sort, Searching – An Introduction, Linear or Sequential Search, Binary Search, Indexed Sequential Search, Analysis of Sorting Techniques

Graphs: Introduction to Graphs, Terms Associated with Graphs, Sequential Representation of Graphs, Linked Representation of Graphs, Traversal of Graphs, Spanning Trees, Shortest Path, Application of Graphs.

BOOKS:

1. "Data Structures using C", ISRD group Second Edition, TMH
2. "Data Structures through C", YashavantKanetkar, BPB Publications
3. "Data Structures Using C" Balagurusamy E. TMH

GENERAL

ANDHRA LOYOLA COLLEGE (AUTONOMOUS): VIJAYAWADA – 520 008

II – B. Sc., IV Semester, COMPUTER SCIENCE - PAPER- 4

Title of the Course: OPERATING SYSTEMS

Course Objectives:

This course aims to introduce the structure and organization of a file system. It emphasizes various functions of an operating system like memory management, process management, device management, etc.

Course Learning Outcomes:

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

1. Know Computer system resources and the role of operating system in resource management with algorithms
2. Understand Operating System Architectural design and its services.
3. Gain knowledge of various types of operating systems including Unix and Android.
4. Understand various process management concepts including scheduling, synchronization, and deadlocks. 5. Have a basic knowledge about multithreading.
6. Comprehend different approaches for memory management.
7. Understand and identify potential threats to operating systems and the security features design to guard against them.
8. Specify objectives of modern operating systems and describe how operating systems have evolved over time.
9. Describe the functions of a contemporary operating system

SYLLABUS

UNIT- I

What is Operating System? History and Evolution of OS, Basic OS functions, Resource Abstraction, Types of Operating Systems– Multiprogramming Systems, Batch Systems, Time Sharing Systems; Operating Systems for Personal Computers, Workstations and Hand-held Devices, Process Control & Real time Systems.

UNIT- II

Processor and User Modes, Kernels, System Calls and System Programs, System View of the Process and Resources, Process Abstraction, Process Hierarchy, Threads, Threading Issues, Thread Libraries; Process Scheduling, Non-Preemptive and Preemptive Scheduling Algorithms.

UNIT III

Process Management: Deadlock, Deadlock Characterization, Necessary and Sufficient Conditions for Deadlock, Deadlock Handling Approaches: Deadlock Prevention, Deadlock Avoidance and Deadlock Detection and Recovery.

Concurrent and Dependent Processes, Critical Section, Semaphores, Methods for Inter- process Communication; Process Synchronization, Classical Process Synchronization Problems: Producer-Consumer, Reader-Writer.

UNIT IV

Memory Management: Physical and Virtual Address Space; Memory Allocation Strategies– Fixed and -Variable Partitions, Paging, Segmentation, Virtual Memory.

UNIT V

File and I/O Management, OS security : Directory Structure, File Operations, File Allocation Methods, Device Management, Pipes, Buffer, Shared Memory, Security Policy Mechanism, Protection, Authentication and Internal Access Authorization

Introduction to Android Operating System, Android Development Framework, Android Application Architecture, Android Process Management and File System, Small Application Development using Android Development Framework.

REFERENCE BOOKS:

1. Operating System Principles by Abraham Silberschatz, Peter Baer Galvin and Greg Gagne (7thEdition) Wiley India Edition.
2. Operating Systems: Internals and Design Principles by Stallings (Pearson)
3. Operating Systems by J. Archer Harris (Author), Jyoti Singh (Author) (TMH)
4. Online Resources for UNIT V

GENERAL

ANDHRA LOYOLA COLLEGE (AUTONOMOUS): VIJAYAWADA – 520 008

II – B. Sc., III Semester, COMPUTER SCIENCE - PAPER- 5

Title of the Course: OBJECT ORIENTATED PROGRAMMING THROUGH JAVA

Course Objectives:

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

Course Learning Outcomes:

At the end of this course student will:

1. Understand the benefits of a well-structured program
2. Understand different computer programming paradigms
3. Understand underlying principles of Object-Oriented Programming in Java
4. Develop problem-solving and programming skills using OOP concepts
5. Develop the ability to solve real-world problems through software development in high-level programming language like Java

SYLLABUS

UNIT – I

Introduction to Java: Features of Java, The Java virtual Machine, Parts of Java

Naming Conventions and Data Types: Naming Conventions in Java, Data Types in Java, Literals

Operators in Java: Operators, Priority of Operators

Control Statements in Java: if... else Statement, do... while Statement, while Loop, for Loop, switch Statement, break Statement, continue Statement, return Statement

Input and Output: Accepting Input from the Keyboard, Reading Input with Java.util.Scanner Class, Displaying Output with System.out.printf(), Displaying Formatted Output with String.format()

Arrays: Types of Arrays, Three Dimensional Arrays (3D array), arrayname.length, Command Line Arguments

UNIT – II

Strings: Creating Strings, String Class Methods, String Comparison, Immutability of Strings **Introduction to OOPs:** Problems in Procedure Oriented Approach, Features of Object- Oriented Programming System (OOPS)

Classes and Objects: Object Creation, Initializing the Instance Variables, Access Specifiers, Constructors

Methods in Java: Method Header or Method Prototype, Method Body, Understanding Methods, Static Methods, Static Block, The keyword „this", Instance Methods, Passing Primitive Data Types to Methods, Passing Objects to Methods, Passing Arrays to Methods, Recursion, Factory Methods

Inheritance: Inheritance, The keyword „super", The Protected Specifier, Types of Inheritance

UNIT – III

Polymorphism: Polymorphism with Variables, Polymorphism using Methods, Polymorphism with Static Methods, Polymorphism with Private Methods, Polymorphism with Final Methods, final Class

Type Casting: Types of Data Types, Casting Primitive Data Types, Casting Referenced Data Types, The Object Class

Abstract Classes: Abstract Method and Abstract Class

Interfaces: Interface, Multiple Inheritance using Interfaces

Packages: Package, Different Types of Packages, The JAR Files, Interfaces in a Package, Creating Sub Package in a Package, Access Specifiers in Java, Creating API Document **Exception Handling:** Errors in Java Program, Exceptions, throws Clause, throw Clause, Types of Exceptions, Re – throwing an Exception

UNIT – IV

Streams: Stream, Creating a File using FileOutputStream, Reading Data from a File uingFileInputStream, Creating a File using FileWriter, Reading a File using FileReader, Zipping and Unzipping Files, Serialization of Objects, Counting Number of Characters in a File, File Copy, File Class

Threads: Single Tasking, Multi Tasking, Uses of Threads, Creating a Thread and Running it, Terminating the Thread, Single Tasking Using a Thread, Multi Tasking Using Threads, Multiple Threads Acting on Single Object, Thread Class Methods, Deadlock of Threads,

Thread Communication, Thread Priorities, thread Group, Daemon Threads, Applications of Threads, Thread Life Cycle

UNIT – V

Applets: Creating an Applet, Uses of Applets, <APPLET> tag, A Simple Applet, An Applet with Swing Components, Animation in Applets, A Simple Game with an Applet, Applet Parameters

Java Database Connectivity: Database Servers, Database Clients, JDBC (Java Database Connectivity), Working with Oracle Database, Working with MySQL Database, Stages in a JDBC Program, Registering the Driver, Connecting to a Database, Preparing SQL Statements, Using jdbc–odbc Bridge Driver to Connect to Oracle Database, Retrieving Data from MySQL Database, Retrieving Data from MS Access Database, Stored Procedures and Callable Statements, Types of Result Sets

BOOKS:

- Core Java: An Integrated Approach, Authored by Dr. R. Nageswara Rao &Kogent Learning Solutions Inc.
- E.Balaguruswamy, Programming with JAVA, A primer, 3e, TATA McGraw- Hill Company.
- John R. Hubbard, Programming with Java, Second Edition, Schaum‟s outline Series, TMH.

- Deitel&Deitel. Java TM: How to Program, PHI (2007)