Department of Computer Science & Engineering

Scheme of Examination and Syllabus for
Under Graduate Programme

Under Multiple Entry and Exit, Internship and
CBCS-LOCF as per NEP-2020
w.e.f. session 2024-25 (in phased manner)

Subject: Computer Science

Guru Jambheshwar University of Science &Technology
Hisar-125001, Haryana

(A+ NAAC Accredited State Govt. University)

Guru Jambheshwar University of Science and Technology

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Scheme of Examination and Syllabus for Under Graduate Programme w.e.f. session 2024-25
For affiliated Degree Colleges according to National Education Policy-2020

Subject: Computer Science

First Year

SEMESTER-I								
Type of Course	**Course Code**	**Nomenclature of Paper/Course**	**Credits**	**Contact Hours**	**Internal Marks**	**External Marks**	**Total Marks**	**Duration of Exam (Hrs)**
Discipline SpecificCourse	C24COS101T	Fundamentals of Computer andProgramming in C	3	3	20	50	70	2.5
	C24COS101P	Programming in C Lab	1	2	10	20	30	3
Minor Course/ Vocational Course	C24MIC102T	Computer Programming Fundamentals	2	2	15	35	50	2
Minor Course/ Vocational Course#	C24MIN102T	Problem Solving using C	3	3	20	50	70	2.5
	C24MIN102P	Problem Solving using C Lab	1	2	10	20	30	3
Multidisciplinary Course	C24MDC105T	Information Technology	2	2	15	35	50	2.5
	C24MDC105P	Information Technology Lab	1	2	10	15	25	3
Skill Enhancement Course	C24SEC103T	Office Tools	2	2	15	35	50	2
	C24SEC103P	Office Tools Lab	1	2	10	15	25	3
		OR						
	C24SEC203T	Digital Efficiency Tools	2	2	15	35	50	2
	C24SEC203P	Digital Efficiency Tools Lab	1	2	10	15	25	3
Value Added Course	C24VAC109T	Digital Empowerment	2	2	15	35	50	2
SEMESTER-II								
Type of Course	**Course Code**	**Nomenclature of Paper/Course**	**Credits**	**Contact Hours**	**Internal Marks**	**External Marks**	**Total Marks**	**Duration of Exam (Hrs)**
Discipline SpecificCourse	C24COS201T	Data Structure Using C	3	3	20	50	70	2.5
	C24COS201P	Data Structure Using C Lab	1	2	10	20	30	3
Minor Course/ Vocational Course	C24MIC202T	Internet and Web Design	2	2	15	35	50	2
Minor Course/ Vocational Course#	C24MIN202T	Internet and Web Design	3	3	20	50	70	2.5
	C24MIN202P	Internet and Web Design Lab	1	2	10	20	30	3
Multidisciplinary Course	C24MDC205T	Internet and Web Design	2	2	15	35	50	2
	C24MDC205P	Internet and Web Design Lab	1	2	10	15	25	3
Skill Enhancement Course	C24SEC103T	Office Tools	2	2	15	35	50	2
	C24SEC103P	Office Tools Lab	1	2	10	15	25	3
		OR						
	C24SEC203T	Digital Efficiency Tools	2	2	15	35	50	2
	C24SEC203P	Digital Efficiency Tools Lab	1	2	10	15	25	3
Value Added Course	C24VAC109T	Digital Empowerment	2	2	15	35	50	2

#For Scheme C only

Computer Science
Fundamentals of Computer and Programming in C (Semester-I)
Discipline Specific Course (DSC)

Paper Code: C24COS101T
45 Hrs (3 Hrs /Week) **External Marks : 50**
Credits: 3 **Internal Marks : 20**
Exam. Time: 2.5 Hrs **Total Marks: 70**

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of five short questions covering the entire syllabus consisting of 2 marks each. In addition to this, eight more questions (each question may be of 2-3 parts) will be set consisting of two questions from each unit. The student/candidate is required to attempt five questions in all selecting one from each unit consisting of 10 marks each in addition to the compulsory Question No.1. All questions carry equal marks.

Course Objective: The course covers an introduction to computer fundamentals, including hardware and software components. It then transitions into programming basics in C, covering data types, variables, operators, control structures, functions, arrays, pointers and structure in C programming.

Unit-I

Basics of Computers: Definition of a Computer - Characteristics and Applications of Computers – Block Diagram of a Digital Computer – Classification of Computers based on size and working – Central Processing Unit – I/O Devices.
Storage: Primary, Auxiliary and Cache Memory – Memory Devices. Software, Hardware, Firmware.
Operating System – Definition and Functions of an Operating System – MS-DOS – MS Windows – Desktop, Computer, Documents, Pictures, Music, Videos, Recycle Bin, Task Bar – Control Panel.

Unit-II

C Programming Fundamentals: Keywords, Variables and Constants, Structure of a C Program, Input/Output.
Operators & Expressions: Arithmetic, Unary, Logical. Bit-wise, Assignment & Conditional Operators
Decision Making: Decision making using if...else. Else If Ladder; Switch, break. Continue and Goto statements.
Loop Control Structure: While and do-while, for loop and Nested for loop, Decision using switch; goto, break and continue statements.

Unit-III

Functions: Introduction, using functions – Function declaration/ prototype – Function definition function call – return statement – Passing parameters, Recursive functions
Arrays: Introduction, Declaration of Arrays, Accessing elements of the Array – Storing Values in Array, Passing array element to a function: Call by Value and Call by Reference, One dimensional array -declaration, initialization, Accessing one dimensional array, Two dimensional Arrays-declaration, initialization, Accessing two dimensional arrays.

Unit-IV

Strings: Introduction, String and Character functions**,** String Operations using String functions- strcat() , strcmp() , strcpy() , strlen().
Pointers: Declaring Pointer Variable, Pointer Expressions and Pointer Arithmetic, Passing Arguments to Functions using Pointers. Dynamic Memory Allocation: malloc(), calloc(), realloc(), free() functions
Structures and Unions: Declaration of structures, Structure Initialization, Accessing structure members, Arrays of structure, Nested structures, Structure with pointers, Union

Text/ Reference Books:

1. P. K. Sinha, “Computer Fundamentals”, 6th edition
2. E. Balaguruswamy, “Fundamentals of Computer” (First Edition- 2009), McGraw-Hill
3. Yashvant Kanetkar, “Let Us C”, 15th Edition, BPB Publications
4. E. Balaguruswami : Programming with C Language, Tata McGraw Hill, New Delhi.

Course Outcomes:

At the end of the course , the students would be able to :

CO1: **Recall** components and classification of computer systems.
CO2: **Explain** CPU functions, I/O devices, and memory types.
CO3: **Apply** software, hardware, and firmware concepts in computing.
CO4: **Analyze** and compare programming constructs such as loops and operators.
CO5: **Evaluate** advanced programming concepts such as functions, array.
CO6*: **Develop** programs based on learned concepts.

Mapping of COs with POs: (C24COS101T)

Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1								
CO2								
CO3								
CO4								
CO5								
CO6								

S=Strong, M=Medium, W=Weak

Programming in C Lab

Paper Code: C24COS101P
30 Hrs (2 Hrs /Week) **External Marks: 20**
Credits: 1 **Internal Marks: 10**
Exam.Time: 3 Hrs **Total Marks: 30**

The following activities be carried out/ discussed in the lab during the semester.

List of Experiments: C Programming Lab

1. Write a C program to find roots of quadratic equation.
2. Program to accept a positive integer and find the sum of the digits in it.
3. Program to check whether the given number is Prime or Not.
4. Program to Check whether given number is Palindrome or Not.
5. Program to perform i) Matrix Addition ii) Matrix Multiplication.
6. Program to find GCD and LCM using non-recursive function.
7. Program to find largest number in the array.
8. Program to find factorial of a given number using functions.
9. Program to accept and display Student Details using Structures
10. Program to swap two numbers using different parameter passing techniques.

Note: In addition to the above experiments, the teacher may add more programs on the behalf of the theory syllabus.

Course Outcomes:

At the end of the course , the students would be able to :

CO1. **Develop** basic C programs using appropriate syntax and semantics.
CO2. **Analyze and debug** C programs to identify and fix errors effectively.
CO3. **Evaluate** the impact of different coding practices on the performance and readability of C programs.
CO4. **Design and execute** programs involving control structures, arrays, and functions.
CO5. **Create** lab assignment record that includes problem definitions, solutions, results, and conclusions.
CO6. **Demonstrate** ethical practices while solving problems individually or in groups.

Mapping of COs with POs: (C24COS101P)

Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1								
CO2								
CO3								
CO4								
CO5								
CO6								

S=Strong, M=Medium, W=Weak

Computer Science
Computer Programming Fundamentals (Semester-I)
Minor Course (MIC)

Paper Code: C24MIC102T
30 Hrs (2 Hrs /Week) **External Marks : 35**
Credits: 2 **Internal Marks : 15**
Exam. Time: 2 Hrs **Total Marks: 50**

Note: The examiner is required to set five questions in all. The first question will be compulsory consisting of five short questions covering the entire syllabus consisting of 3 marks each. In addition to this, four more questions (each question may be of 2-3 parts) will be set consisting of two questions from each unit. The student/candidate is required to attempt three questions in all selecting one from each unit in consisting of 10 marks in addition to the compulsory Question No.1.

Course Objective: This introduces core concepts like variables, loops, and conditionals, essential for all aspiring programmers. This course covers the building blocks of coding, emphasizing problem-solving and algorithmic thinking.

Unit - I

Introduction to Programming: Overview of programming concepts, **Computer Languages**: Machine Language, Assembly Language, High Level Language; Source code, Compiler, Interpreter, Object Code; Algorithm, Flow Chart and pseudocode, Basics of problem-solving in programming, Debugging, **Error**: Types of Error.

Unit – II

Programming fundamentals: Data types: Integers, floating-point numbers, strings, and Booleans, Variables and constants, Input/output operations, Operators and expressions, **Conditional statements**: if, else if, else, **Loops:** while loops, for loops; Control structures: break, continue;

T**ext and Reference Books:**

1. E. Balagurusamy, Fundamentals of Computer and Programming, Tata McGraw-Hill Education
2. J.B. Dixit, Fundamentals of Computer Programming and IT, Laxmi Publications
3. P. K. Sinha, “Computer Fundamentals”, 6th edition, 2003.

Course Outcomes
At the end of the course, the students would be able to :
CO1: **Recall** fundamental programming language concepts. (LOTS: Level 1 - Remember)
CO2: **Define** data types input/output operations, and control structures. (LOTS: Level 2 -Understand)
CO3: **Apply** problem-solving techniques in programming (LOTS: Level 3 - Apply)
CO4: **Compare** various conditional and control statements. (HOTS: Level 4 – Analyze)
CO5: **Evaluate** advanced programming concepts to solve complex programming problems effectively. (HOTS: Level 5 - Evaluate)

Mapping of COs with POs: C24MIC102T:

Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1								
CO2								
CO3								
CO4								
CO5								

S=Strong, M=Medium, W=Weak

Computer Science
Problem Solving using C (Semester-I)
Minor Course (MIN)

Paper Code: C24MIN102T
45 Hrs (3 Hrs /Week) **External Marks : 50**
Credits: 3 **Internal Marks : 20**
Exam. Time: 2.5 Hrs **Total Marks: 70**

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of five short questions covering the entire syllabus consisting of 2 marks each. In addition to this, eight more questions (each question may be of 2-3 parts) will be set consisting of two questions from each unit. The student/candidate is required to attempt five questions in all selecting one from each unit consisting of 10 marks each in addition to the compulsory Question No.1. All questions carry equal marks.

Course Objective: Programming for problem Solving is a basic and important for every graduate in Engineering. This course introduces basic constructs of programming language like algorithms, conversion of algorithms to programs etc. By studying this course students will get to know about C programming language with its various programming paradigms like branching, looping, arrays, functions, recursion, structure, pointers, etc. to be implemented for solving real world problems. It includes various sorting and searching algorithms as well with notion of order of complexity through simple programs
.

Unit - I

Introduction to Programming: Introduction to components of a computer system (disks, memory, processor, where a program is storedand executed, operating system, compilers etc.).
Idea of Algorithm: steps to solve logical and numerical problems. Representation of Algorithm: Flowchart/Pseudo code with examples.
From algorithms to programs; source code, variables (with data types) variables and memory locations,Syntax and Logical Errors in compilation, object and executable code.

Unit – II

Arithmetic expressions and precedence, Conditional Branching and Loops: Writing and evaluation of conditionals and consequent branching,Iteration and loops.
Arrays: Arrays (1-D, 2-D), Character arrays and Strings, Basic Algorithms: Searching, Basic Sorting Algorithms (Bubble, Insertion and Selection), Finding roots of equations, notion of order of complexity through example programs (no formal definition required).

Unit-III

Function: Functions (including using built in libraries), Parameter passing in functions, call by value, passing arrays to functions: idea of call by reference.
Structure: Structures, Defining structures and Array of Structures.

Unit-IV

Pointers: Idea of pointers, Defining pointers, Use of Pointers in self-referential structures, notion of linkedlist (no implementation)
File handling (only if time is available, otherwise should be done as part of the lab)

T**ext and Reference Books:**

1. E. Balagurusamy, Fundamentals of Computer and Programming, Tata McGraw-Hill Education
2. J.B.Dixit, Fundamentals of Computer Programming and IT, Laxmi Publications
3. P. K. Sinha, “Computer Fundamentals”, 6th edition, 2003.

Course Outcomes

At the end of the course , the students would be able to :

CO1**. Describe** the algorithms to programs (in C language) to test and execute the programs and correct syntax and logical errors.
CO2. **Demonstrate** the use of conditional branching, iteration and recursion.
CO3. **Apply** programming to solve matrix addition and multiplication problems and searching and sorting problem, apply programming to solve simple numerical method problems, namely root finding of function, differentiation of function and simple integration.
CO4. **Compare** the suitability of arrays, pointers and structures to formulate algorithms and programs for various problem situations
CO5. **J ustify** a problem into functions and synthesize a complete program using divide and conquer approach.

Mapping of COs with POs: C24MIN102T:

Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1								
CO2								
CO3								
CO4								
CO5								

S=Strong, M=Medium, W=Weak

Problem Solving using C Lab

Paper Code: C24MIN102P
30 Hrs (2 Hrs /Week) **External Marks: 20**
Credits: 1 **Internal Marks: 10**
Exam.Time: 3 Hrs **Total Marks: 30**

The following activities be carried out/ discussed in the lab during the semester.

List of Experiments: C Programming Lab

1. One assignment to familiarize with programming environment.
2. One assignment on simple computational problems using arithmetic expressions.
3. One assignment on problems involving if-then-else structures.
4. One assignment on iterative problems e.g., sum of series.
5. One assignment on One Dimensional Array manipulation.
6. One assignment on different Matrix problems, String operations.
7. One assignment on implementing simple functions.
8. One assignment on Recursive functions.
9. One assignment on pointers and structures.
10. One assignment on file operations

Note: In addition to the above experiments, the teacher may add more programs on the behalf of the theory syllabus.

Course Outcomes:

At the end of the course , the students would be able to :

CO1. Implement simple, iterative as well as recursive programs. (LOTS: Level 3: Apply)
CO2. Analyze given algorithms to a working and correct program. (LOTS: Level 4: Analyze)
CO3. Compare solutions on the basis of the appropriateness of data structure used like arrays, strings and structures and manipulate through implementation. (HOTS: Level 5: Evaluate)
CO4. Integrate knowledge of programming with identification and correcting logical errors encountered at run time. (HOTS: Level 6: Create)
CO5. Create written records for the given assignments with problem definition, design of solution and conclusions.. (HOTS: Level 6: Create)
CO6. **Demonstrate** ethical practices while solving problems individually or in groups (LOTS: Level 3: Apply).

Mapping of COs with POs: (C24MIN102P)

Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1								
CO2								
CO3								
CO4								
CO5								
CO6								

S=Strong, M=Medium, W=Weak

Computer Science
Information Technology (Semester-I)
Multidisciplinary Course (MDC)

Paper Code: C24MDC105T
30 Hrs (2 Hrs /Week) **External Marks : 35**
Credits: 2 **Internal Marks : 15**
Exam. Time: 2 Hrs **Total Marks: 50**

Note: The examiner is required to set five questions in all. The first question will be compulsory consisting of five short questions covering the entire syllabus consisting of 3 marks each. In addition to this, four more questions (each question may be of 2-3 parts) will be set consisting of two questions from each unit. The student/candidate is required to attempt three questions in all selecting one from each unit in consisting of 10 marks in addition to the compulsory Question No.1.

Course Objective: To make student understanding in various components of Information Technology and Learn IT Concepts.

Unit – I

Introduction to Computers, Characteristics and Limitations of Computers, Block Diagram of Computer, Classification of Computers, Hardware and Software, Types of software, Computer Languages. Data and information, Types of data & information, Data processing using Computer.
Units of a Computer, CPU, ALU, Types of Memory and Memory Hierarchy, Registers, Input Output devices, Mother Board. Processing numerical data using Spreadsheets, Processing and displaying textual data using word processor.

Unit – II

Societal impact of IT, social use of WWW, privacy security and integrity of Information, Internet, Web Browsers, Internet Connection Types, How Internet Works, ISPs, Search Engines, Emails and Its Working, Internet Security, Uses of Internet, Introduction to Cloud and its Applications.

Text and Reference Books:

1. Introduction to Information Technology by V. Rajaraman., PHI
2. Information Technology by P.K. Sinha, PHI
3. ITL Education Solutions Limited, “Introduction to Computer Science”, Pearson Education, 2nd Edition 2012.

Course Outcome

At the end of the course , the students would be able to :

CO1: **Recognize** Computer system components and classifications. (LOTS: Level 1 - Remember)
CO2: **Understand** Computer System functions.(LOTS: Level 2Understand)
CO3: **Explore** Software productivity tools such as MS word and Excel. (LOTS: Level 3 - Explore)
CO4: **Insights** The Internet and Cloud Computing concepts.(HOTS: Level4-Analyze)
CO5: **Evaluate** Advanced IT concepts and MS office. (HOTS: Level 5 - Evaluate)
CO6: **Create** Programs based on acquired knowledge.(HOTS: Level 6– Create)

Mapping of COs with POs: (C24MDC105T)

Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1								
CO2								
CO3								
CO4								
CO5								
CO6								

S=Strong,M=Medium,W=Weak

Information Technology Lab

Paper Code: C24MDC105P
30 Hrs (2 Hrs /Week) **External Marks : 15**
Credits: 1 **Internal Marks : 10**
Exam. Time: 3 Hrs **Total Marks: 25**

Course Objective: To make student understand various components of computer and their working, Learn Basic IT Concepts.

The following activities to be carried out/discuss in the Lab during the practical.

List of Experiments:

1. Create a class timetable using table option in MS- Word.
2. Make your resume in MS-Word.
3. Create worksheet of 10 students and apply basic formula and functions in MS Excel.
4. Create worksheet of a company employee and calculate their salary and other benefits.
5. Basics knowledge about Internet and Google's applications (including Google Chrome, Google Docs, Gmail, Google weather, google sheet etc.).
6. To Compose and send an email to single person and multiple recipients. Also use CC and BCC option of email.
7. To send an email with an attachment.
8. To use Digilocker app and Google drive.

Note: In addition to above experiments, the teacher concerned may add more experiments based on theory syllabus

Course Outcome

At the end of the course, the students would be able to:

CO1. **Develop** basic programs with MS Word, Excel& IT Concepts
CO2.**Explore**programs to identify formatting effectively.
CO3.**Evaluate** the impact of formatting documents.
CO4.**Design**programsinvolvingformulas, functions.
CO5. **Create** lab assignment record that includes problem definitions, solutions, results, and conclusions.
CO6.**Demonstrate** ethical practices while solving problems individually or in groups.

Mapping of COs with POs: (C24MDC105P)

Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1								
CO2								
CO3								
CO4								
CO5								
CO6								

S=Strong, M=Medium, W=Weak

Computer Science
Office Tools (Semester-I/II)
Skill Enhancement Course (SEC)

Paper Code: C24SEC103T
30 Hrs. (2 Hrs /Week) **External Marks: 35**
Credits: 2 **Internal Marks: 15**
Exam. Time: 2 Hrs **Total Marks: 50**

Note: The examiner is required to set five questions in all. The first question will be compulsory consisting of five short questions covering the entire syllabus consisting of 3 marks each. In addition to this, four more questions (each question may be of 2-3 parts) will be set consisting of two questions from each unit. The student/candidate is required to attempt three questions in all selecting one from each unit in consisting of 10 marks in addition to the compulsory Question No.1.

About the Course: To impart the basic knowledge about the software and hardware. The student will learn about the basics of operating systems and spreadsheets.

Unit I

Operating System - Definition, Functions, Types of Operating System, Basics of Popular Operating Systems, The User Interface, Exploring Computer, Icons, taskbar, desktop, Using Menu and Menu-selection, managing files and folders, Control panel – display properties, add/remove software and hardware, Common utilities.
Basic Word Processing - Introduction to Word Processing, Menus, Creating, Editing & Formatting Document, Spell Checking, Printing.

Unit II

Advanced Word Processing: Views, Tables, modifying page setup, applying document themes, applying document style sets, Inserting headers and footers
Spread Sheet: Elements of Electronics Spread Sheet, Applications, Creating and Opening of Spread Sheet, Menus, Manipulation of cells: Enter texts numbers and dates, Cell Height and Widths, copying of cells, Mathematical, Statistical and Financial function, Drawing different types of charts, Sort and Filter Data. Creating Presentation, Type of presentation views. Using sound, Animation, Working with Objects, Printing.

Text books and references:

1. Help files from Apache Open Office, https://wiki.openoffice.org/wiki/Documentation
2. Channelle Andy, “Beginning OpenOffice 3: From Novice to Professional”, a Press Publications
3. Beginning OpenOffice 3: From Novice to Professional, Andichannele, Apress.
4. Microsoft Office 2016 Step by Step: MS Office 2016 Step by Step, By Joan Lambert,
5. Curtis Frye
6. Computer Fundamentals - By Pradeep K. Sinha, Priti Sinha, BPB Publications, 6th Edition
7. Getting Started with Libre Office, Friends of Open Documents Inc.,
8. https://www.freetechbooks.com/friends-of-opendocument-inc-p1851.html
9. Documentation from LibreOffice, https://documentation.libreoffice.org/en/englishdocumentation

Course Outcome

At the end of the course a student is able to:
CO1: Recall classification of operating system.
CO2: Define basic functions of operating systems and word processing.
CO3: Apply editing and formatting in a document.
CO4: Compare working of word processor and spread-sheets.
CO5: Evaluate the spread-sheets using built-in functions.

Mapping of COs with POs: (C24SEC103T)

Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1								
CO2								
CO3								
CO4								
CO5								

S=Strong, M=Medium, W=Weak

Office Tools Lab (Semester-I/II)

Paper Code: C24SEC103P

30 Hrs (2 Hrs /Week) **External Marks : 15**

Credits: 1 **Internal Marks : 10**

Exam. Time: 3 Hrs **Total Marks: 25**

The following activities to be carried out/discuss in the Lab during the practical.

Operating System:

- Starting with basics of Operating Systems and its functionalities

Word Processing:

- Create and format word documents.
- Use tables, word Art and other features in your documents.
- Use macros to simplify the tasks in a document.
- Use mail merge to write once for many.

Spread Sheet:

- Use spreadsheet for basic data handling
- Apply formulas to sheet for automation.
- Use Charts & Shapes for better visualization of the data.
- Use sorting and filtering of the data

Presentation Software:

- Prepare and format presentations.
- Apply slide transitions, animations and sequencing for slides.
- Apply different formatting and insert options to make presentation better.
- Appling sound and animation.

Note: In addition to above experiments, the teacher concerned may add more experiments based on theory syllabus

Course Outcome

At the end of the course a student is able to:

CO1: Basic working and functions of operating system.
CO2: Effective use of formatting skills on paragraphs, tables, lists, and pages.
CO3: Demonstrate the mechanics and uses of Word tables to organize and present data.
CO4: To evaluate accounting operations.
CO5: Utility of functions and formulas on excel spreadsheet.
CO6: Manipulate data using data names and ranges, filters and sort, and validation lists.

Mapping of COs with POs: (C24SEC103P)

Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1								
CO2								
CO3								
CO4								
CO5								
CO6								

S=Strong, M=Medium, W=Weak

Computer Science
Digital Efficiency Tools (Semester-I/II)
Skill Enhancement Course (SEC)

Paper Code: C24SEC203T
30 Hrs. (2 Hrs /Week) **External Marks: 35**
Credits: 2 **Internal Marks: 15**
Exam. Time: 2 Hrs **Total Marks: 50**

Note: The examiner is required to set five questions in all. The first question will be compulsory consisting of five short questions covering the entire syllabus consisting of 3 marks each. In addition to this, four more questions (each question may be of 2-3 parts) will be set consisting of two questions from each unit. The student/candidate is required to attempt three questions in all selecting one from each unit in consisting of 10 marks in addition to the compulsory Question No.1.

Course Objective: This course introduces simple and practical techniques to improve digital productivity. Students will learn about basic time management tools, digital collaboration using G Suite applications, organizing files, and handling digital distractions. The course aims to help students streamline their digital tasks, reduce distractions, and increase efficiency.

Unit-I

Introduction to Digital Efficiency: What is Digital Efficiency? Benefits of Being Digitally Efficient, Handling Digital Distractions. **Basic Time Management Tools:** Using Digital Calendars (Google Calendar), Google Tasks.
Email management and File organisation: Basics of Digital Note-Taking (Google Keep), Simple File and Folder Organization, Managing Emails Effectively (Gmail).

Unit – II

Digital Collaboration with G Suite: File sharing and storage (Google Drive), Online Meetings (Google Meet), Collaborative Document Editing (Google Docs, Google Sheets), Using Google Classroom for Education, Creating Surveys and Forms (Google Forms)

Text and Reference:

1. Newport, C., Digital Minimalism: Choosing a Focused Life in a Noisy World, Portfolio, 2019
2. Google keep: https://support.google.com/keep/answer/2888240?hl=en&co=GENIE.Platform%3DAndroid&sjid=12352778224802636 84-AP
3. Google drive: https://support.google.com/drive/answer/2424384?hl=en&co=GENIE.Platform%3DAndroid&sjid=12352778224802636 84-AP
4. Google meet: https://support.google.com/a/users/answer/9282720?hl=en&sjid=1235277822480263684-AP
5. Google docs: https://support.google.com/a/users/answer/9282664?hl=en&sjid=1235277822480263684-AP
6. Google sheet: https://support.google.com/a/users/answer/9282959?hl=en
7. Google forms:https://support.google.com/a/users/answer/9303071?hl=en
8. Managing Emails Effectively: https://support.google.com/a/users/answer/9260550?hl=en
9. Google classroom: https://sites.google.com/view/classroom-workspace/

Course Outcomes

At the end of the course students will be able to:

CO1. **Define** basic concepts of digital efficiency.
CO2. **Explain** simple tools and strategies for managing digital tasks.
CO3. **Apply** basic digital tools to improve personal productivity.
CO4. **Compare** different digital tools for specific tasks.
CO5. **Develop** a simple digital efficiency plan using selected tools.

Mapping of COs with POs:

Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1								
CO2								
CO3								
CO4								
CO5								

S=Strong, M=Medium, W=Weak

Digital Efficiency Tools Lab (Semester-I/II)

Paper Code: C24SEC203P
30 Hrs (2 Hrs /Week) **External Marks : 15**
Credits: 1 **Internal Marks : 10**
Exa. Time: 3 Hrs **Total Marks: 25**

Course Objective: This lab course provides hands-on practice with tools and techniques covered in the Digital Efficiency course. Students will gain practical experience in using digital productivity tools, managing files, and collaborating effectively using G Suite applications.

List of experiments/assignments:

1. **Setting Up Google Calendar:** Create a Google account if not already done. Set up Google Calendar and explore its interface. Add personal events, set reminders, and manage notifications.
2. **Task Management with Google Tasks:** Sign up for Google Tasks or a similar task management tool. Create task lists for daily, weekly, and long-term goals. Prioritize tasks using labels, due dates, and priority levels.
3. **Managing Emails with Gmail:** Use Gmail to manage emails effectively. Organize emails using labels, folders, and filters. Practice archiving, deleting, and searching for emails.
4. **Digital Note-Taking with Google Keep:** Explore Google Keep for creating and organizing notes. Use labels, colours, and reminders for better organization. Share notes with peers and collaborate on a note-taking activity.
5. **File Management with Google Drive:** Upload files to Google Drive and organize them into folders. Share files with specific permissions (view, edit, comment).Practice searching for files and using advanced features like offline access.
6. **Collaborative Document Editing:** Collaborate on a document using Google Docs. Edit the document simultaneously with peers. Use comments, suggestions, and version history features.
7. **Online Meetings with Google Meet:** Schedule an online meeting using Google Calendar. Host and join meetings using Google Meet. Share screens, collaborate on documents, and record meetings for future reference.

Note: In addition to the above experiments, the teacher may add more programs on the behalf of the theory syllabus.

Course Outcomes

At the end of the course, students will be able to:

CO1. **Apply** digital tools for efficient personal organization and productivity.
CO2. **Analyse** and prioritize tasks using task management strategies.
CO3. **Critique** the usability and user experience of each tool based on practical use.
CO4. **Design** comprehensive digital documentation.
CO5. **Create** lab assignment record that includes problem definitions, solutions, results, and conclusions.
CO6. **Demonstrate** ethical practices while solving problems individually or in groups.

Mapping of COs with POs: (C24SEC203P)

Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1								
CO2								
CO3								
CO4								
CO5								
CO6								

S=Strong, M=Medium, W=Weak

Computer Science
Digital Empowerment (Semester-I/Semester-II)
Value Aided Courses (VAC)

Paper code: C24VAC109T
30 Hrs. (2 Hrs /week) **External Marks: 35**
Credits: 2 **Internal Marks: 15**
Exam. Time: 2 Hrs **Total Marks: 50**

Note: The examiner is required to set five questions in all. The first question will be compulsory consisting of five short questions covering the entire syllabus consisting of 3 marks each. In addition to this, four more questions (each question may be of 2-3 parts) will be set consisting of two questions from each unit. The student/candidate is required to attempt three questions in all selecting one from each unit in consisting of 10 marks in addition to the compulsory Question No.1.

Course Objective: The course aims to promote digital empowerment by understanding the digital landscape, creating awareness of Digital India, and emphasizing cyber safety and security for effective communication and collaboration in cyberspace.

Unit - I

Digital Empowerment: Needs and challenges, Vision of Digital India: DigiLocker, E-Hospitals, e-Pathshala, BHIM, e-Kranti (Electronic Delivery of Services), e-Health Campaigns; Public utility portals of Govt. of India such as RTI, Health, Finance, Income Tax filing, Education.

Unit – II

Electronic Communication: Electronic mail, blogs, social media, Tools/platforms for online learning, Collaboration using file sharing, messaging, video conferencing; **Safe and Secure Cyberspace:** Online security and privacy, Data breach and Cyber Attacks, Security Initiatives by the Govt of India, Ethics in Cyberspace.

Text and Reference Books:

1. Rodney H. Jones, Christoph A. Hafner, Understanding Digital Literacies: A Practical Introduction, Routledge Books, 2nd Edition, 2021
2. David Sutton, Cyber Security: A practitioner's guide, BCS Learning & Development Limited, UK, 2017

Course Outcomes

At the end of the course students will be able to:

CO1: **Recall** fundamental concepts of digital empowerment.
CO2: **Understand** different initiatives of digital empowerment.
CO3: **Apply** electronics communication tools like Email and social media.
CO4: **Analyze** different types cyber attack and security concerns.

Mapping of COs with POs: (C24VAC109T)

Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1								
CO2								
CO3								
CO4								

S=Strong, M=Medium, W=Weak

Computer Science
Data Structure using C (Semester-II)
Discipline Specific Course (DSC)

Paper Code: C24COS201T
45 Hrs (3 Hrs /Week) **External Marks : 50**
Credits: 3 **Internal Marks : 20**
Exam. Time: 2.5 Hrs **Total Marks: 70**

Note: The examiner is required to set nine questions in all. The first question will be compulsory consisting of five short questions covering the entire syllabus consisting of 2 marks each. In addition to this, eight more questions (each question may be of 2-3 parts) will be set consisting of two questions from each unit. The student/candidate is required to attempt five questions in all selecting one from each unit consisting of 10 marks each in addition to the compulsory Question No.1. All questions carry equal marks.

Course Objective: Achieve an understanding of fundamental data structures, which allow one to store collections of data with fast updates and queries. Study theoretical analysis, implementation and application of data structures.

Unit I

Introduction: Data Structures Definition and its types, Data Structure operations, Static and dynamic memory storage, Algorithms complexity and time-space tradeoff, Big-O notation. **Strings:** Introduction, storing strings, String operations, Pattern matching algorithms.

Unit II

Arrays: one-dimensional arrays, matrices, sparse matrices, multi-dimensional arrays, operations on arrays, Linear search, Binary search, Insertion sort, selection sort, Bubble sort, Merge sort.

Linked List: Array vs linked list, Types (singly, doubly, singly circular, header, doubly circular,), Operations on Lists – create, insert, delete, search, Applications of linked lists.

Unit III

Stack: Definition, Array implementation of stacks, Linked implementation of stacks, Applications of Stacks: Infix, Postfix and prefix expression, conversions and evaluation of expressions, Recursion, Quick Sort.

Queue: Definition, Array implementation of queues, Linked implementation of queues, Circular queues, Priority queues, Double-ended queues, Applications of queue.

Unit IV

Trees: Binary Trees and their properties, Linked and static Representation of binary trees, Complete Binary Tree, Threaded Binary tree, Different tree traversal algorithms, Binary Search Tree (create, delete, search, insert, display).

Graph: Definition, Array and linked representation of graphs, Graph Traversal (BFS and DFS), Adjacency matrix and adjacency lists, path matrix, Finding Shortest Path - Warshall's Algorithm.

Text and Reference Books:

1. Seymour Lipschutz, “Data Structures”, Tata McGraw- Hill Publishing Company Limited, Schaum’s Outlines, New Delhi.
2. Yedidyan Langsam, Moshe J. Augenstein, and Aaron M. Tenenbaum, “Data Structures Using C”, Pearson Education., New Delhi.
3. Bala Guruswamy, “Data Structures Using C”, TMH.
4. Mark Allen Weiss, “Data Structures and Algorithm Analysis in C”, Addison- Wesley.

Course Outcome:

At the end of the course , the students would be able to :

CO1: **Identify** components and classifications of computer systems.
CO2: **Understand** CPU functions, I/O devices, and memory types.
CO3: **Apply** software, hardware, and firmware concepts in computing.
CO4: **Analyze and compare** programming constructs like loops and operators.
CO5: **Evaluate** advanced programming concepts including functions and arrays.
CO6: **Develop** programs based on learned concepts. (HOTS: Level 6 – Create)

Mapping of CO's with PO's: (C24COS201T)

Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1								
CO2								
CO3								
CO4								
CO5								
CO6								

S=Strong, M=Medium, W=Weak

Data Structure using C Lab

Paper Code: C24COS201P
30 Hrs (2 Hrs /Week) **External Marks: 20**
Credits: 1 **Internal Marks: 10**
Exam. Time: 3 Hrs **Total Marks: 30**

Course: Achieve an understanding of fundamental data structures, which allow one to store collections of data with fast updates and queries. Study theoretical analysis, implementation and application of data structures.

The following activities be carried out/ discussed in the lab during the initial period of the semester.

List of Laboratory Assignments Data Structure Using C:

1. Write a program to insert an element in an array.
2. Write a program to delete an element from an array.
3. Write a program for Pattern Matching Algorithm.
4. Write a program for Bubble Sort/ Selection Sort/ Insertion Sort.
5. Write a program for Linear Search/ Binary search.
6. Write a program to insert a node in linked list at beginning, end, after a given node, before a given node.
7. Write a program to delete the starting node, last node or a given node from a linked list.
8. Write a program to implement push and pop operation in a stack using array.
9. Write a program to implement push and pop operation in stack using Linked List.
10. Write a program for Quick Sort.
11. Write a program to insert and delete an element in Queue using array.
12. Write a program to insert and delete an element in Queue using Linked List.

Note: In addition to the above experiments, the teacher may add more programs on the behalf of the theory syllabus.

Course Outcome:
At the end of the course, the students would be able to :
CO1. **Develop** basic data structure programs using appropriate syntax and semantics in C.
CO2. **Analyze and debug** programs to identify and debug errors.
CO3. **Explore** how various coding practices affect the performance and readability of C programs.
CO4. **Design and execute** programs that include control structures, arrays, and functions.
CO5. **Create** lab assignment record that includes problem definitions, solutions, results, and conclusions.
CO6. **Demonstrate** ethical practices while solving problems individually or in groups.

Mapping of COs with POs: (C24COS201P)

Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1								
CO2								
CO3								
CO4								
CO5								
CO6								

S=Strong, M=Medium, W=Weak

Computer Science
Internet and Web Design (Semester-II)
Minor Course (MIC)

Paper Code: C24MIC202T
30 Hrs (2 Hrs /Week) **External Marks : 35**
Credits: 2 **Internal Marks : 15**
Exam. Time: 2 Hrs **Total Marks: 50**

Note: The examiner is required to set five questions in all. The first question will be compulsory consisting of five short questions covering the entire syllabus consisting of 3 marks each. In addition to this, four more questions (each question may be of 2-3 parts) will be set consisting of two questions from each unit. The student/candidate is required to attempt three questions in all selecting one from each unit in consisting of 10 marks in addition to the compulsory Question No.1.

Course Objective: This course introduces core concepts of Internet and web designing emphasizing on HTML.

Unit I

Introduction to Internet: Internet Evolution and Concept, Internet Vs Intranet, Growth of Internet, Internet Service Provider (ISP) & its Function, Connectivity- Dialup, Leased line; URL, Protocols.
E-MAIL: Email Basics, Address, Features, Sending & Receiving email, Email Protocols, Labels in Email, Email services providers, Internet chatting - Voice chat, Text chat
World Wide Web (www): History of WWW, Web Browser, Web server, Search Engines, working of Search Engine, Web Protocols (HTTP, FTP, SNMP etc.), TCP/IP layer with protocols.

Unit II

Web Designing: Steps for developing a Website; contents selection; Webpage, Home page; Domain Names; website publishing.
HTML: Concepts of Hypertext, Versions of HTML, Elements of HTML, Syntax, Tags & Attributes, Head & Body Sections, Inserting Texts, Images, Hyperlinks, Backgrounds and Color Controls, Different HTML Tags, Table Layout and Presentation, Creating Lists, Use of Font Size & Attributes, List Types and Its Tags, Use of Frames and Forms in Web Pages.

Text and Reference Books:

1. Raj Kamal, Internet and Web Technologies, Tata McGraw- Hill, 2002.
2. Wendy Willard, HTML Beginners Guide, Tata McGraw- Hill, 2009.
3. Deitel and Goldberg, Internet and World Wide Web, How to Program, PHI, 2004.

Course Outcomes

At the end of the course, the students would be able to:
CO1: **Recall** the basic concepts of Internet and WWW.
CO2: **Explain** ISPs and different connection types for networking
CO3: **Apply** basic web designing tool: HTML.
CO4: **Analyze** and discuss various components of a web page.
CO5: **Evaluate** and prepare a report describing or making recommendations for a website design.
CO6: **Design** a basic webpage having different elements of HTML.

Mapping of COs with POs: (C24MIC202T)

Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1								
CO2								
CO3								
CO4								
CO5								
CO6								

S=Strong, M=Medium, W=Weak

Computer Science
Internet and Web Design (Semester-II)
Minor Course (MIN)

Paper Code: C24MIN202T
45 Hrs (3 Hrs /Week) **External Marks : 50**
Credits: 3 **Internal Marks : 20**
Exam. Time: 2.5 Hrs **Total Marks: 70**

Note: The examiner is required to set five questions in all. The first question will be compulsory consisting of five short questions covering the entire syllabus consisting of 3 marks each. In addition to this, four more questions (each question may be of 2-3 parts) will be set consisting of two questions from each unit. The student/candidate is required to attempt three questions in all selecting one from each unit in consisting of 10 marks in addition to the compulsory Question No.1.

Course Objective: This course introduces core concepts of Internet and web designing emphasizing on HTML.

Unit I

Introduction to Internet: Internet Evolution and Concept, Internet Vs Intranet, Growth of Internet, Internet Service Provider (ISP) & its Function, Connectivity- Dialup, Leased line; URL, Protocols.
E-MAIL: Email Basics, Address, Features, Sending & Receiving email, Email Protocols, Labels in Email, Email services providers, Internet chatting - Voice chat, Text chat

Unit-II

World Wide Web (www): History of WWW, Web Browser, Web server, Search Engines, working of Search Engine, Web Protocols (HTTP, FTP, SNMP etc.), TCP/IP layer with protocols.

Unit III

Web Designing: Steps for developing a Website; contents selection; Webpage, Home page; Domain Names; website publishing.

Unit-IV

HTML: Concepts of Hypertext, Versions of HTML, Elements of HTML, Syntax, Tags & Attributes, Head & Body Sections, Inserting Texts, Images, Hyperlinks, Backgrounds and Color Controls, Different HTML Tags, Table Layout and Presentation, Creating Lists, Use of Font Size & Attributes, List Types and Its Tags, Use of Frames and Forms in Web Pages.

Text and Reference Books:

- Raj Kamal, Internet and Web Technologies, Tata McGraw- Hill, 2002.
- Wendy Willard, HTML Beginners Guide, Tata McGraw- Hill, 2009.
- Deitel and Goldberg, Internet and World Wide Web, How to Program, PHI, 2004.

Course Outcomes

At the end of the course, the students would be able to:

CO1: **Recall** the basic concepts of Internet and WWW. (LOTS: Level 1 - Remember)
CO2: **Explain** ISPs and different connection types for networking (LOTS: Level 2 - Understand)
CO3: **Apply** basic web designing tool: HTML. (LOTS: Level 3 - Apply)
CO4: **Analyze** and discuss various components of a web page. (HOTS: Level 4 - Analyze)
CO5: **Evaluate** and prepare a report describing or making recommendations for a website design. (HOTS: Level 5 - Evaluate)
CO6: **Design** a basic webpage having different elements of HTML (HOTS: Level 6 – Create)

Mapping of COs with POs: (C24MIN202T)

Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1								
CO2								
CO3								
CO4								
CO5								
CO6								

S=Strong, M=Medium, W=Weak

Internet and Web Design Lab

Paper Code: C24MIN202P
30 Hrs (2 Hrs /Week) **External Marks : 20**
Credits: 1 **Internal Marks : 10**
Exam. Time: 3 Hrs **Total Marks: 30**

The following activities to be carried out/discuss in the Lab during the practical.
List of Experiments:

1. Use the HTML tags for Font features.
2. Create Ordered and Unordered List in Table.
3. Create a simple webpage using HTML.
4. Designing of registration form with table and use of hyperlink.
5. Design a page with frames to include Images and Videos.
6. Add a cascading style sheet for designing the web page.
7. Use user defined function to get array of values and sort them in ascending order on web page
8. Demonstrate Request and Response object using HTML Form.
9. Register your website domain with DNS Provider.

Note: In addition to above experiments, the teacher concerned may add more experiments based on theory syllabus

Course Outcome

At the end of the course, the students would be able to:

CO1. **Develop** Different Web pages using appropriate syntax and semantics. (LOTS: Level 3: Apply)
CO2. **Analyze and debug** webpage and fix errors effectively. (LOTS: Level 4: Analyze)
CO3. **Evaluate** the impact of different coding practices on the performance and readability of HTML tags. (HOTS: Level 5: Evaluate)
CO4. **Design and execute** programs inserting image, videos etc in webpage. (HOTS: Level 6: Create)
CO5. **Create** lab assignment record that includes problem definitions, solutions, results, and conclusions. (HOTS: Level 6: Create)
CO6. **Demonstrate** ethical practices while creating website projects individually or in groups (LOTS: Level 3: Apply).

Mapping of COs with POs: (C24MIN202P)

Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1								
CO2								
CO3								
CO4								
CO5								
CO6								

S=Strong, M=Medium, W=Weak

Computer Science
Internet and Web Design (Semester-II)
Multidisciplinary Course (MDC)

Paper Code: C24MDC205T
30 Hrs (2 Hrs /Week) **External Marks : 35**
Credits: 2 **Internal Marks : 15**
Exam. Time: 2 Hrs **Total Marks: 50**

Note: The examiner is required to set five questions in all. The first question will be compulsory consisting of five short questions covering the entire syllabus consisting of 3 marks each. In addition to this, four more questions (each question may be of 2-3 parts) will be set consisting of two questions from each unit. The student/candidate is required to attempt three questions in all selecting one from each unit in consisting of 10 marks in addition to the compulsory Question No.1.

Course Objective: This course introduces core concepts of Internet and web designing emphasizing on HTML& CSS.

Unit I

Introduction to Internet: Internet Evolution and Concept, Internet Vs Intranet, Growth of Internet, Internet Service Provider (ISP) & its Function, Connectivity- Dialup, Leased line; URL, Protocols.
E-MAIL: Email Basics, Address, Features, Sending & Receiving Email, Email Protocols, Lables in Email, Email services providers, Internet chatting - Voice chat, Text chat.
World Wide Web (www): History of WWW, Web Browser, Webserver, Search Engines, working of Search Engine, Web Protocols (HTTP, FTP, SNMP etc.), TCP/IP layer with protocols.
Web Designing: Steps for developing a Website; contents selection; Webpage, Home page; Domain Names; website publishing.

Unit II

HTML: Concepts of Hypertext, Versions of HTML, Elements of HTML, Syntax, Tags & Attributes, Head & Body Sections, Inserting Texts, Images, Hyperlinks, Backgrounds and Color Controls, Different HTML Tags, Table Layout and Presentation, Creating Lists, Use of Font Size & Attributes, List Types and Its Tags,Use of Frames and Forms in Web Pages.
Cascading Style sheets : Introduction to CSS**,** External Style sheet**,** Internal style sheet**,** Inline style sheet**,** CSS Syntax- Selector, Property, Value**,** Overriding, Comments, color, background, Font, images.

Text and Reference Books:

1. Raj Kamal, Internet and Web Technologies, Tata McGraw- Hill, 2002.
2. Wendy Willard, HTML Beginners Guide, Tata McGraw- Hill, 2009.
3. Deitel and Goldberg, Internet and World Wide Web, How to Program, PHI, 2004.

Course Outcomes

At the end of the course , the students would be able to :
CO1: **Recall** the basic concepts of Internet and WWW.
CO2: **Explain** ISPs and different connection types for networking.
CO3: **Apply** basic web designing tool: HTML.
CO4: **Analyze** and discuss various components of a web page.
CO5: **Evaluate** and prepare a report describing or making recommendations for a website design.
CO6: **Design** a basic webpage having different elements of HTML& CSS.

Mapping of COs with POs: (C24MDC205T)

Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1								
CO2								
CO3								
CO4								
CO5								
CO6								

S=Strong, M=Medium, W=Weak

Internet and Web Design Lab

Paper Code: C24MDC205P
30 Hrs (2 Hrs /Week) **External Marks : 15**
Credits: 1 **Internal Marks : 10**
Exam. Time: 3 Hrs **Total Marks: 25**

The following activities to be carried out/discuss in the Lab during the practical.
List of Experiments:

10. Use the HTML tags for Font features.
11. Create Ordered and Unordered List in Table.
12. Create a simple webpage using HTML.
13. Designing of registration form with table and use of hyperlink.
14. Design a page with frames to include Images and Videos.
15. Add a cascading style sheet for designing the web page.
16. Use user defined function to get array of values and sort them in ascending order on web page
17. Demonstrate Request and Response object using HTML Form.
18. Register your website domain with DNS Provider.

Note: In addition to above experiments, the teacher concerned may add more experiments based on theory syllabus

Course Outcome
At the end of the course, the students would be able to :
CO1. **Develop** Different Web pages using appropriate syntax and semantics.
CO2. **Analyze and debug** webpage and fix errors effectively.
CO3. **Evaluate** the impact of different coding practices on the performance and readability of HTML tags.
CO4. **Design and execute** programs inserting image, videos etc in webpage.
CO5. **Create** lab assignment record that includes problem definitions, solutions, results, and conclusions.
CO6. **Demonstrate** ethical practices while creating website projects individually or in groups.

Mapping of COs with POs: (C24MDC205P)

Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1								
CO2								
CO3								
CO4								
CO5								
CO6								

S=Strong, M=Medium, W=Weak