

# **G. VENKATASWAMY NAIDU COLLEGE, KOVILPATTI-628502**

**(AUTONOMOUS)**

(Re-Accredited with “A” Grade by NAAC)

## **Department of Computer Applications**

(for those who joined from the Academic year 2023-2024 and onwards)

### **VISION**

To Be Renewed Potential Academic Excellence toward Betterment of Society.

### **MISSION**

To Develop Students with Innovative Ideas, Talent, Problem-Solving Abilities, and Leadership Qualities.

To Establish Industrial interaction in Order to improve Entrepreneurship Skills.

To Train Students with the Latest Trends, Tools, and Technologies.

To Promote Knowledge for holistic development in Social Events and Ethics.

### **Programme Outcomes - (PO) (Aligned with Graduate Attributes)**

At the completion of the Undergraduate Programme, the student will be able to accomplish the following outcomes:

**PO1:** Acquires knowledge of Computing Fundamentals, Basic Mathematics, Computing Specialization, and Domain Knowledge of proper computing models from defined problems.

**PO2:** Analysis and synthesizes computing systems through quantitative and qualitative techniques.

**PO3:** Modern tool usage for Design and Development - Able to analyse and identify the customer requirements in multidisciplinary domains, create high level design and implement robust software applications using the latest technological skills.

**PO4:** Capable of adapting to new technologies and constantly upgrading their skills with an attitude towards independent and lifelong learning.

**PO5:** Communicates effectively in both verbal and written form.

**PO6:** Perform professionally with social, cultural and ethical responsibility as an individual as well as in multifaceted teams with a positive attitude.

**PO7:** Develop practical skills that will allow you to provide solutions to industry, society, and business.

## **Programme Educational Objectives (PEOs)**

**The objectives of this Programme is to equip/prepare the students as a**

**PEO1:** Graduates are prepared for employment in the IT industry by demonstrating the required domain knowledge. (50%)

**PEO2:** Graduates are motivated to become global leaders through practical training, hands-on and project experience, and career and entrepreneurial skill development. (30%)

**PEO3:** Graduates are addressed and trained to be creative, to develop innovative ideas about social issues, and to be directed toward problems with solutions. (20%)

## **Programme Specific Outcomes (PSOs)**

A graduate with a B.C.A. in the Computer Application program

**PSO1:** Prepares students for roles that require them to develop programming skills, networking skills, learning applications, programming languages, Web development, hardware and troubleshooting, software skills, and modern techniques related to computer applications and the IT industry.

**PSO2:** Develop your knowledge and skills not only in computers and real-world application software but also in common organizations and management.

**PSO3:** Bachelor in Computer Applications (B.C.A.) gives a number of opportunities for individuals to shine in their lives and a few of them, like software programmers, system developers, network administrators, web designers, and faculty for Computer Science and Computer Applications.

## **Graduate Attributes**

**GA1:** Ability to apply mathematics, logic, and statistics to the design, development, and analysis of software systems to the knowledge of the discipline to develop and update domain knowledge relevant to choose the IT Industry.

**GA2:** Demonstrate Computer Applications used industry/enterprise/community by conveying ideas clearly, effectively and professionally to the satisfaction of all the stakeholders for the quality manner.

**GA3:** Ability to design components, systems and/or processes to meet required specifications in Computer Application.

**GA4:** Apply latest technology competently and appropriately as and when required to apply relevant problem-solving methodologies for lifelong solutions.

**GA5:** Ability to communicates effectively, comprehending and writing effective reports and design documentation, summarizing information, making effective oral presentations and giving and receiving clear oral instructions and demonstrate English proficiency in the industry/company to meet the communication skills.

**GA6:** Ability to develop creative and effective responses to intellectual, professional and social challenge and to be open-minded about cultural diversity, linguistic difference, and the complex nature of our world in the positive manner.

**GA7:** Ability to demonstrate competence in the practical art of computing in by showing in design, an understanding of the practical methods, and using modern design tools competently for complex real-life IT problem

**Programme Structure for First Year BCA**  
(For those admitted from the academic year 2023-24 and onwards)

| Category    | Course Type                                       | Course Code | Course Title                                   | Contact Hours | Exam Hours | Marks |     |             | Credit |
|-------------|---------------------------------------------------|-------------|------------------------------------------------|---------------|------------|-------|-----|-------------|--------|
|             |                                                   |             |                                                |               |            | CIA   | ESE | Total Marks |        |
| SEMESTER-I  |                                                   |             |                                                |               |            |       |     |             |        |
| PART-I      | Language                                          | U23TA1L1    | Tamil– I                                       | 6             | 3          | 25    | 75  | 100         | 3      |
| PART-II     | English                                           | U23EN1L1    | English – I                                    | 6             | 3          | 25    | 75  | 100         | 3      |
| PART-III    | Core-1                                            | U23CA101    | Python Programming                             | 5             | 3          | 25    | 75  | 100         | 5      |
|             | Core-2                                            | U23CA1P1    | Python Programming Lab                         | 5             | 3          | 40    | 60  | 100         | 5      |
|             | Elective Generic-1                                | U23CA1A1    | RDBMS with PL/SQL                              | 4             | 3          | 25    | 75  | 100         | 3      |
| PART-IV     | Skill Enhancement Courses SEC1 (NME – I)          | U23CA1S1    | Fundamentals of Information Technology         | 2             | -          | 50    | -   | 50          | 2      |
|             | Foundation Course (FC)                            | U23CAFC1    | Structured programming in C                    | 2             | -          | 50    | -   | 50          | 2      |
| TOTAL       |                                                   |             |                                                | 30            | -          | -     | -   | 600         | 23     |
| SEMESTER-II |                                                   |             |                                                |               |            |       |     |             |        |
| PART-I      | Language                                          | U23TA2L2    | Tamil– II                                      | 6             | 3          | 25    | 75  | 100         | 3      |
| PART-II     | English                                           | U23EN2L2    | English – II                                   | 6             | 3          | 25    | 75  | 100         | 3      |
| PART-III    | Core-3                                            | U23CA202    | Object oriented Programming Concepts using C++ | 5             | 3          | 25    | 75  | 100         | 5      |
|             | Core-4                                            | U23CA2P2    | C++ programming Lab                            | 5             | 3          | 40    | 60  | 100         | 5      |
|             | Elective Generic -2                               | U23CA2AP    | PL/SQL Lab                                     | 4             | 3          | 40    | 60  | 100         | 3      |
|             | Comprehension - 1(Self Study Course- Online Exam) | U23CA2C1    | Comprehension in Computer Applications – I     | -             | 1          | -     | 50  | 50          | 1      |
| PART-IV     | Skill Enhancement Courses SEC2(NME – II)          | U23CA2S2    | Introduction to HTML                           | 2             | -          | 50    | -   | 50          | 2      |
|             | Skill Enhancement Courses (DS) SEC3               | U23CA2S3    | Office Automation                              | 2             | 2          | -     | 50  | 50          | 2      |
| TOTAL       |                                                   |             |                                                | 30            | -          | -     | -   | 650         | 24     |

**Part-III BCA / Semester – I / Core-1: Python Programming  
(Course Code: U23CA101)**

|                                   |              |                       |            |
|-----------------------------------|--------------|-----------------------|------------|
| <b>Lecture Hours</b>              | <b>: 75</b>  | <b>Tutorial Hours</b> | <b>: -</b> |
| <b>Practical Hours</b>            | <b>:-</b>    | <b>No. of Credit</b>  | <b>:5</b>  |
| <b>Contact Hours per Semester</b> | <b>: 75</b>  |                       |            |
| <b>Contact hours per Week</b>     | <b>: 5</b>   |                       |            |
| <b>Internal Marks</b>             | <b>: 25</b>  |                       |            |
| <b>External Marks</b>             | <b>: 75</b>  |                       |            |
| <b>Total Marks</b>                | <b>: 100</b> |                       |            |

**Objectives of the course**

The course aims at giving an overall view of the

- To make students understand the concepts of Python programming.
- To apply the OOPs concept in PYTHON programming.
- To impart knowledge on demand and supply concepts.
- To make the students learn best practices in PYTHON programming.
- To know the costs and profit maximization.

**Course Learning Outcomes (for Mapping with Pos and PSOs)**

Upon completion of the course the students would be able to

**CO1:** Learn the basics of python, Do simple programs on python, learn how to use an array.

**CO2:** Develop program using selection statement, Work with Looping and jump statements, Do programs on Loops and jump statements.

**CO3:** Concept of function, function arguments, implementing the concept strings in various applications, Significance of Modules, Work with functions, Strings and modules.

**CO4:** Work with List, tuples and dictionary; Write program using list, Tuples and dictionary.

**CO5:** Usage of File handlings in python, Concept of reading and writing files, Do programs using files.

### CO-PO Mapping (Course Articulation Matrix)

| CO/PSO                                            | PO1   | PO2   | PO3   | PO4   | PO5   | PO6   | PO7   | PSO1 | PSO2 | PSO3  |
|---------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|
| CO1                                               | 3     | 2     | 2     | 3     | 3     | 3     | 3     | 3    | 3    | 3     |
| CO2                                               | 3     | 2     | 2     | 2     | 2     | 3     | 2     | 3    | 3    | 3     |
| CO3                                               | 3     | 2     | 3     | 3     | 2     | 2     | 2     | 3    | 3    | 3     |
| CO4                                               | 2     | 2     | 2     | 2     | 2     | 3     | 2     | 3    | 3    | 3     |
| CO5                                               | 3     | 2     | 2     | 2     | 3     | 3     | 3     | 3    | 3    | 2     |
| Total Contribution of COs to POs and PSOs         | 14    | 10    | 11    | 12    | 12    | 14    | 12    | 15   | 15   | 14    |
| Weighted percentage of Course Contribution to POs | 93.33 | 66.67 | 73.33 | 80.00 | 80.00 | 93.33 | 80.00 | 100  | 100  | 93.33 |

0- No Correlation; 1-Weak; 2-Moderate; 3-Strong

### COURSE CONTENT

#### UNIT- I: Basics of Python Programming

(L-15 Hours)

History of Python - Features of Python - Literal-Constants-Variables – Identifiers – Keywords - Built-in Data Types - Output Statements – Input Statements-Comments –Indentation- Operators Expressions-Type conversions. Python Arrays: Defining and Processing Arrays–Array methods.

#### UNIT- II: Control Statements

(L-15 Hours)

Selection/Conditional Branching statements: if, if-else, nested if and else if-else statements. Iterative Statements: while loop, for loop, else suite in loop and nested loops. **Jump Statements:** break, continue and pass statements.

#### UNIT- III: Functions

(L-18 Hours)

Function Definition – Function Call – Variable Scope and its Lifetime-Return Statement.

Function Arguments: Required Arguments, Keyword Arguments, Default Arguments and Variable Length Arguments- Recursion.

Python Strings: String operations- Immutable Strings - Built-in String Methods and Functions - String Comparison. Modules: import statement- The Python module – dir() function - Modules and Namespace–Defining our own modules.

## **UNIT- IV: Lists**

**(L-15 Hours)**

Creating list-Access values in List-Updating values in Lists-Nested lists-Basic list operations List Methods. Tuples: Creating, Accessing, Updating and Deleting Elements in a tuple–Nested tuples – Difference between lists and tuples. Dictionaries: Creating, Accessing, Updating and Deleting Elements in a Dictionary Functions and Methods-Difference between Lists and Dictionaries.

## **UNIT- V: Python File Handling**

**(L-12 Hours)**

Types of files in Python -Opening and Closing files-Reading and Writing files: write () and write lines () methods- append () method–read () and read lines () methods–with keyword–Splitting words – File Methods-File Positions-Renaming and deleting files.

### **Recommended Text**

1. Reema Thareja,—”*Python Programming using problem solving approach*”, First Edition, 2017,Oxford University Press.
2. Dr.R.NageswaraRao, — “*Core Python Programming*”, First Edition, 2017, Dreamtech Publishers.

### **Reference Books**

1. Vamsi Kurama, —”*Python Programming*”: A Modern Approach, Pearson Education.
2. MarkLutz, “*Learning Python*”, Orielly.
3. Adam Stewarts, —”*Python Programming*”, Online.
4. FabioNelli, —”*Python Data Analytics*”, A Press.
5. KennethA.Alembert,—”*Fundamentals of Python*”—First Programs, CENGAGE Publication.

### **Website ande-learning source**

1. <https://www.programiz.com/python-programming>
2. <https://www.guru99.com/python-tutorials.html>
3. [https://www.w3schools.com/python/python\\_intro.asp](https://www.w3schools.com/python/python_intro.asp)
4. <https://www.geeksforgeeks.org/python-programming-language/>
5. [https://en.wikipedia.org/wiki/Python\\_\(programming\\_language\)](https://en.wikipedia.org/wiki/Python_(programming_language))

**Part-III BCA / Semester – I / Core-2: Practical - PYTHON LAB**  
**(Course Code: U23CA1P1)**

|                                   |              |                       |           |
|-----------------------------------|--------------|-----------------------|-----------|
| <b>Lecture Hours</b>              | <b>:-</b>    | <b>Tutorial Hours</b> | <b>:-</b> |
| <b>Practical Hours</b>            | <b>: 75</b>  | <b>No. of Credit</b>  | <b>:5</b> |
| <b>Contact Hours per Semester</b> | <b>:75</b>   |                       |           |
| <b>Contact hours per Week</b>     | <b>:5</b>    |                       |           |
| <b>Internal Marks</b>             | <b>: 40</b>  |                       |           |
| <b>External Marks</b>             | <b>: 60</b>  |                       |           |
| <b>Total Marks</b>                | <b>: 100</b> |                       |           |

**Objectives of the course**

This course aims at providing knowledge on

- Be able to design and program Python applications.
- Be able to create loops and decision statements in Python.
- Be able to work with functions and pass arguments in Python.
- Be able to build and package Python modules for reusability.
- Be able to read and write files in Python.

**Course Learning Outcomes (for Mapping with Pos and PSOs)**

Upon completion of the course the students would be able to:

**CO1:** Demonstrate the understanding of syntax and semantics

**CO2:** Identify the problem and solve using PYTHON programming techniques.

**CO3:** Identify suitable programming constructs for problem solving.

**CO4:** Analyze various concepts of PYTHON language to solve the problem in an efficient way.

**CO5:** Develop a PYTHON program for a given problem and test for its correctness.

### CO-PSO Mapping (Course Articulation Matrix)

| CO/PSO                                            | PO1   | PO2   | PO3   | PO4   | PO5   | PO6   | PO7   | PSO1 | PSO2 | PSO3  |
|---------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|
| CO1                                               | 2     | 2     | 2     | 2     | 3     | 2     | 3     | 3    | 3    | 3     |
| CO2                                               | 2     | 1     | 3     | 3     | 2     | 2     | 2     | 3    | 3    | 3     |
| CO3                                               | 3     | 3     | 1     | 2     | 1     | 3     | 2     | 3    | 3    | 3     |
| CO4                                               | 2     | 3     | 3     | 1     | 2     | 1     | 2     | 3    | 3    | 3     |
| CO5                                               | 3     | 2     | 3     | 2     | 3     | 2     | 2     | 3    | 3    | 2     |
| Total Contribution of COs to POs and PSOs         | 12    | 11    | 12    | 10    | 11    | 10    | 11    | 15   | 15   | 14    |
| Weighted percentage of Course Contribution to POs | 80.00 | 73.33 | 80.00 | 66.67 | 73.33 | 66.67 | 73.33 | 100  | 100  | 93.33 |

**0- No Correlation;    1-Weak;                    2-Moderate;                    3-Strong**

### LIST OF PYTHON PROGRAMMING LAB

1. Program using variables, constants, I/O statements in Python.
2. Program using Operators in Python.
3. Program using Conditional Statements.
4. Program using Loops.
5. Program using Jump Statements.
6. Program using Functions.
7. Program using Recursion.
8. Program using Arrays.
9. Program using Strings.
10. Program using Modules.
11. Program using Lists.
12. Program using Tuples.
13. Program using Dictionaries.
14. Program for File Handling.

**Part-III BCA / Semester – I / Elective Generic-1: RDBMS with PL/SQL  
(Course Code: U23CA1A1)**

|                                   |              |                       |             |
|-----------------------------------|--------------|-----------------------|-------------|
| <b>Lecture Hours</b>              | <b>:50</b>   | <b>Tutorial Hours</b> | <b>: 10</b> |
| <b>Practical Hours</b>            | <b>:-</b>    | <b>No. of Credit</b>  | <b>:3</b>   |
| <b>Contact Hours per Semester</b> | <b>:60</b>   |                       |             |
| <b>Contact hours per Week</b>     | <b>: 4</b>   |                       |             |
| <b>Internal Marks</b>             | <b>: 25</b>  |                       |             |
| <b>External Marks</b>             | <b>: 75</b>  |                       |             |
| <b>Total Marks</b>                | <b>: 100</b> |                       |             |

**Objectives of the course**

This course aims at providing an overall view of the

- Describe basic concepts of database system.
- Design a Data model and Schemas in RDBMS.
- Competent in use of SQL
- Analyze functional dependencies for designing robust Database
- Describe basic concepts of database system

**Course Learning Outcomes (for Mapping with Pos and PSOs)**

On completion of this course, students will;

**CO1:** Understand basic concepts of database system

**CO2:** Design a Data model and Schemas in RDBMS.

**CO3:** Understand Competent in use of SQL

**CO4:** Analyze functional dependencies for designing Robust Database

**CO5:** Understand basic concepts of database system.

## CO-PSO Mapping (Course Articulation Matrix)

| CO/PSO                                            | PO1   | PO2   | PO3   | PO4   | PO5   | PO6   | PO7   | PSO1 | PSO2 | PSO3  |
|---------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|
| CO1                                               | 3     | 2     | 3     | 3     | 2     | 2     | 3     | 3    | 3    | 3     |
| CO2                                               | 1     | 3     | 2     | 2     | 3     | 1     | 2     | 3    | 3    | 3     |
| CO3                                               | 3     | 2     | 1     | 3     | 2     | 2     | 1     | 3    | 3    | 3     |
| CO4                                               | 3     | 1     | 2     | 1     | 2     | 3     | 2     | 3    | 3    | 3     |
| CO5                                               | 3     | 2     | 3     | 3     | 2     | 2     | 3     | 3    | 3    | 2     |
| Total Contribution of COs to POs and PSOs         | 13    | 10    | 11    | 12    | 11    | 10    | 11    | 15   | 15   | 14    |
| Weighted percentage of Course Contribution to POs | 86.66 | 66.67 | 73.33 | 80.00 | 73.33 | 66.66 | 73.33 | 100  | 100  | 93.33 |

0- No Correlation;

1-Weak;

2-Moderate;

3-Strong

## COURSE CONTENT

### UNIT-I: Introduction to DBMS

(L-10+T-2 Hours)

Data and Information - Database – Database Management System–Objectives-Advantages–Components-Architecture. **ER Model:** Building blocks of ER Diagram – Relationship Degree–Classification–ER diagram to Tables–IS A relationship–Constraints–Aggregation and Composition–Advantages.

### UNIT-II: Relational Model

(L-10+T-2 Hours)

CODD's Rule-Relational Data Model-Key-Integrity–Relational Algebra Operations–Advantages and limitations–Relational Calculus– Domain Relational Calculus - QBE.

### UNIT-III: Structure of Relational Database

(L-10+T-2 Hours)

Introduction to Relational Database Design-Objectives–Tools–Redundancy and Data Anomaly–Functional Dependency-Normalization–1NF–2NF–3NF–BCNF.Transaction Processing–Database Security.

### UNIT-IV : SQL

(L-10+T-2 Hours)

Commands – Data types-DDL - Selection, Projection, Join and Set Operations–Aggregate Functions–DML–Modification-Truncation-Constraints–Sub query.

## **UNIT-V: PL/SQL**

**(L-10+T-2 Hours)**

Structure-Elements–Operators    Precedence–Control    Structure–Iterative    Control-Cursors-Procedure-  
Function-Packages–Exceptional Handling-Triggers.

### **Recommended Text**

1. S.Sumathi, S.Esakirajan,-"*Fundamentals of Relational Database Management System*," Springer International Edition 2007.

### **Reference Books**

1. Abraham Silberchatz, Henry F.Korth, S.Sudarshan,- "*Database System Concepts*," Mc Graw Hill 2019, 7th Edition.
2. Alexis Leon & Mathews Leon,- "*Fundamentals of DBMS*" , Vijay Nicole Publications 2014, 2<sup>nd</sup> Edition.

### **Website and e-learning source**

1. [NPTEL & MOOC courses titled Relational Database Management Systems](#)
2. <https://nptel.ac.in/courses/106106093/>
3. <https://nptel.ac.in/courses/106106095/>

**Part-IV BCA / Semester – I / SEC-1- Fundamentals of Information  
Technology (Course Code: U23CA1S1)**

|                                   |             |                       |           |
|-----------------------------------|-------------|-----------------------|-----------|
| <b>Lecture Hours</b>              | <b>: 25</b> | <b>Tutorial Hours</b> | <b>:5</b> |
| <b>Practical Hours</b>            | <b>:-</b>   | <b>No. of Credit</b>  | <b>:2</b> |
| <b>Contact Hours per Semester</b> | <b>:30</b>  |                       |           |
| <b>Contact hours per Week</b>     | <b>:2</b>   |                       |           |
| <b>Internal Marks</b>             | <b>: 50</b> |                       |           |
| <b>External Marks</b>             | <b>: -</b>  |                       |           |
| <b>Total Marks</b>                | <b>:50</b>  |                       |           |

**Objectives of the course**

- Understand basic concepts and terminology of information technology.
- Have a basic understanding of personal computers and their operation
- Be able to identify data storage and its usage
- Get great knowledge of software and its functionalities
- Understand about operating system and their uses.

**Course Learning Outcomes (for Mapping with POs and PSOs)**

On completion of this course, students will;

- CO1:** Learn the basics of computer, Construct the structure of the required things in computer, learn how to use it.
- CO2:** Develop organizational structure using for the devices present currently under input or output unit.
- CO3:** Concept of storing data in computer using two headers namely RAM and ROM with different types of ROM with advancement in storage basis.
- CO4:** Work with different software, Write program in the software and Applications of software.
- CO5:** Usage of Operating system in information technology which really acts  
As interpreter between software and hardware.

### CO-PO Mapping (Course Articulation Matrix)

| CO/PSO                                            | PO1   | PO2   | PO3   | PO4   | PO5   | PO6   | PO7   | PSO1 | PSO2 | PSO3  |
|---------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|
| CO1                                               | 2     | 3     | 2     | 2     | 1     | 1     | 2     | 3    | 3    | 3     |
| CO2                                               | 3     | 2     | 3     | 2     | 3     | 3     | 3     | 3    | 3    | 3     |
| CO3                                               | 3     | 2     | 2     | 2     | 2     | 3     | 2     | 3    | 3    | 3     |
| CO4                                               | 2     | 3     | 3     | 3     | 3     | 1     | 2     | 3    | 3    | 3     |
| CO5                                               | 3     | 3     | 3     | 3     | 3     | 2     | 2     | 3    | 3    | 2     |
| Total Contribution of COs to POs and PSOs         | 13    | 13    | 13    | 12    | 12    | 10    | 11    | 15   | 15   | 14    |
| Weighted percentage of Course Contribution to POs | 86.66 | 86.66 | 86.66 | 80.00 | 80.00 | 66.67 | 73.33 | 100  | 100  | 93.33 |

**0- No Correlation;    1-Weak;                    2-Moderate;                    3-Strong**

### **COURSE CONTENT**

#### **UNIT-I: Introduction to Computers**

**(L-5+T-1 Hours)**

Generations of Computer–Data and Information – Components of Computer – Software – Hardware – Input Devices–Output Devices–Types of Operating System..

#### **Unit-II: MSWord**

**(L-5+T-1 Hours)**

Introduction–Elements of Window–Files, Folders and Directories – Text Manipulating: Cut, Copy, Paste, Drag and Drop – Text Formatting: Font – Style, Size, Face and Colors (Both foreground and background)–Alignment–Bullets and Numbering–Header and footer–watermark–inserting objects (images, other application document)–Table creation – Mail merge.

#### **Unit-III: MS-Excel**

**(L-5+T-1 Hours)**

Introduction–Insert in rows and columns–Sizing rows and columns Implementing formulas–Generating series–Functions in excel–Creation of Chart–Inserting objects–Filter Sorting–Inserting worksheet.

## **Unit-IV: MS Power Point**

**(L-5+T-1 Hours)**

Introduction–Slides Manipulation (Inserting new, Copy, paste, delete and duplicate slides) – Slide show– Types of Views – Types of Animations–Inserting Objects–Implementing multimedia (Video and Audio)–Templates (Built-in and User-Defined).

## **Unit-V: Internet**

**(L-5+T-1 Hours)**

Introduction to Internet and Intranet–Services of Internet-Domain Name – URL – Browser – Types of Browsers – Search Engine -E-Mail – Basic Components of E-Mail –.How to send group mail.

**E-Commerce:** Digital Signature–Digital Currency–Online shopping and transaction.

## **Recommended Text**

1. Anoop Mathew, S.Kavitha Murugesan (2009),—"*Fundamental of Information Technology*", Majestic Books.
2. AlexisLeon, MathewsLeon, "*Fundamental of Information Technology*", 2<sup>nd</sup> Edition.
3. S.K Bansal,—"*Fundamental of Information Technology*"

## **Reference Books**

1. Bhardwaj Sushil Puneet Kumar,—"*Fundamental of Information Technology*"
2. GGWILKINSON,—"*Fundamentals of Information Technology*", Wiley-Blackwell
3. ARavichandran,—"*Fundamentals of Information Technology*", Khanna Book Publishing

## **Website and e-learning source**

1. <https://testbook.com/learn/computer-fundamentals>
2. <https://www.tutorialsmate.com/2020/04/computer-fundamentals-tutorial.html>
3. <https://www.javatpoint.com/computer-fundamentals-tutorial>
4. [https://www.tutorialspoint.com/computer\\_fundamentals/index.htm](https://www.tutorialspoint.com/computer_fundamentals/index.htm)
5. <https://www.nios.ac.in/media/documents/sec229new/Lesson1.pdf>

## **Part-IV BCA / Semester – I / Foundation Course: Structured Programming in C (Course Code: U23CAFC1)**

|                                   |             |                       |           |
|-----------------------------------|-------------|-----------------------|-----------|
| <b>Lecture Hours</b>              | <b>:30</b>  | <b>Tutorial Hours</b> | <b>:-</b> |
| <b>Practical Hours</b>            | <b>:</b>    | <b>No. of Credit</b>  | <b>:2</b> |
| <b>Contact Hours per Semester</b> | <b>:30</b>  |                       |           |
| <b>Contact hours per Week</b>     | <b>:2</b>   |                       |           |
| <b>Internal Marks</b>             | <b>: 50</b> |                       |           |
| <b>External Marks</b>             | <b>: -</b>  |                       |           |
| <b>Total Marks</b>                | <b>: 50</b> |                       |           |

### **Objectives of the course**

To familiarize the students with the Programming basics and the fundamentals of C,

- Data types in C, Mathematical and logical operations.
- To understand the concept using if statements and loops
- This unit covers the concept of Arrays
- This unit covers the concept of Functions
- To understand the concept of implementing pointers.

### **Course Learning Outcomes (for Mapping with POs and PSOs)**

On completion of this course, students will;

**CO1:** Remember the program structure of C with its syntax and semantics

**CO2:** Understand the programming principles in C (data types, operators, branching and looping, arrays, functions, structures, pointers and files)

**CO3:** Apply the programming principles learnt in real-time problems

**CO4:** Analyze the various methods of solving a problem and choose the best method

**CO5:** Code, debug and test the programs with appropriate Test cases

## CO-PO Mapping (Course Articulation Matrix)

| CO/PSO                                            | PO1   | PO2   | PO3   | PO4   | PO5   | PO6   | PO7   | PSO1 | PSO2 | PSO3  |
|---------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|
| CO1                                               | 1     | 3     | 2     | 2     | 3     | 1     | 2     | 3    | 3    | 3     |
| CO2                                               | 2     | 2     | 3     | 3     | 2     | 2     | 2     | 3    | 3    | 3     |
| CO3                                               | 3     | 2     | 2     | 1     | 2     | 2     | 2     | 3    | 3    | 3     |
| CO4                                               | 3     | 2     | 3     | 2     | 2     | 2     | 3     | 3    | 3    | 3     |
| CO5                                               | 1     | 2     | 2     | 2     | 2     | 3     | 2     | 3    | 3    | 2     |
| Total Contribution of COs to POs and PSOs         | 10    | 11    | 12    | 10    | 11    | 10    | 11    | 15   | 15   | 14    |
| Weighted percentage of Course Contribution to POs | 66.66 | 73.33 | 80.00 | 66.67 | 73.33 | 66.67 | 73.33 | 100  | 100  | 93.33 |

0- No Correlation; 1-Weak; 2-Moderate; 3-Strong

## COURSE CONTENT

### UNIT-I: Overview of C

(L-6 Hours)

Importance of C, sample C program, C program structure, executing C program.

Constants, Variables, and Data Types: Character set, C tokens, keywords and identifiers, constants, variables, data types, declaration of variables, Assigning values to variables-Assignment statement, declaring a variable as constant, as volatile. Operators and Expression.

### UNIT-II: Decision Making and Branching

(L-6 Hours)

Decision making with If, simple IF, IF ELSE, nested IF ELSE, ELSE IF ladder, switch, GOTO statement.

**Decision Making and Looping:** While, Do-While, For, Jumps in loops.

### UNIT-III: Arrays

(L-6 Hours)

Declaration and accessing of one & two-dimensional arrays, initializing two dimensional arrays, multidimensional arrays.

### UNIT-IV: Functions

(L-6 Hours)

The form of C functions, Return values and types, calling a function, categories of functions, Nested functions, Recursion, functions with arrays, call by value, call by reference, storage classes-character arrays and string functions.

## **UNIT-V: Pointers**

**(L-6 Hours)**

Definition, declaring and initializing pointers, accessing a variable through address and through pointer, pointer expressions, pointer increments and scale factor, pointers and arrays, pointers and functions, pointers and structures.

### **Recommended Text**

1. E.Balagurusamy, “*Programming in ANSI C*”, Fifth Edition, Tata McGraw-Hill, 2010.

### **Reference Books**

1. Byron Gottfried, Schaum’s *Outline Programming with C*, Fourth Edition, Tata Mc Graw-Hill, 2018.
2. Kernighan and Ritchie, “*The C Programming Language*”, Second Edition, Prentice Hall, 1998
3. Yashavant Kanetkar, “*Let Us*” Eighteenth Edition, BPB Publications, 2021

### **Website ande-learning source**

1. <https://codeforwin.org/>
2. <https://www.geeksforgeeks.org/c-programming-language/>
3. <http://en.cppreference.com/w/c>
4. <http://learn-c.org/>
5. <https://www.cprogramming.com/>

### **Part-III BCA / Semester – II / Core-3: Object Oriented Programming Concepts Using C++ (Course Code: U23CA202)**

|                                   |              |                       |            |
|-----------------------------------|--------------|-----------------------|------------|
| <b>Lecture Hours</b>              | <b>: 65</b>  | <b>Tutorial Hours</b> | <b>:10</b> |
| <b>Practical Hours</b>            | <b>:-</b>    | <b>No. of Credit</b>  | <b>: 5</b> |
| <b>Contact Hours per Semester</b> | <b>: 75</b>  |                       |            |
| <b>Contact hours per Week</b>     | <b>: 5</b>   |                       |            |
| <b>Internal Marks</b>             | <b>: 25</b>  |                       |            |
| <b>External Marks</b>             | <b>: 75</b>  |                       |            |
| <b>Total Marks</b>                | <b>: 100</b> |                       |            |

#### **Objectives of the course**

The course aims at giving an overall view of the

- Describe the procedural and object-oriented paradigm with concepts of streams, classes, functions, data and objects
- Understand dynamic memory management techniques using pointers, constructors, destructors, etc
- Describe the concept of function overloading, operator overloading, virtual functions and polymorphism
- Classify inheritance with the understanding of early and late binding, usage of exception handling, generic programming
- Demonstrate the use of various OOPs concepts with the help of programs

#### **Course Learning Outcomes (for Mapping with Pos and PSOs)**

Upon completion of the course the students would be able to

**CO1:** Remember the program structure of C with its syntax and semantics

**CO2:** Understand the programming principles in C (data types, operators, branching and looping, arrays, functions, structures, pointers and files)

**CO3:** Apply the programming principles learnt in real-time problems

**CO4:** Analyze the various methods of solving a problem and choose the best method

**CO5:** Code, debug and test the programs with appropriate test cases

## CO-PSO Mapping (Course Articulation Matrix)

| CO/PSO                                            | PO1   | PO2   | PO3   | PO4   | PO5   | PO6   | PO7   | PSO1 | PSO2 | PSO3  |
|---------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|
| CO1                                               | 3     | 3     | 3     | 2     | 3     | 1     | 2     | 3    | 3    | 3     |
| CO2                                               | 3     | 2     | 2     | 2     | 3     | 2     | 3     | 3    | 3    | 3     |
| CO3                                               | 2     | 3     | 3     | 2     | 2     | 3     | 2     | 3    | 3    | 3     |
| CO4                                               | 3     | 3     | 3     | 3     | 3     | 3     | 3     | 3    | 3    | 3     |
| CO5                                               | 2     | 2     | 2     | 2     | 2     | 1     | 1     | 3    | 3    | 2     |
| Total Contribution of COs to POs and PSOs         | 13    | 13    | 13    | 11    | 13    | 10    | 11    | 15   | 15   | 14    |
| Weighted percentage of Course Contribution to POs | 86.66 | 86.66 | 86.66 | 73.33 | 86.66 | 66.67 | 73.33 | 100  | 100  | 93.33 |

0- No Correlation;

1-Weak;

2-Moderate;

3-Strong

## COURSE CONTENT

### UNIT- I: Introduction to C++

(L-13+T-2 Hours)

Key concepts of Object-Oriented Programming –Advantages – Object Oriented Languages – I/O in C++ - C++ Declarations. Control Structures: - Decision Making and Statements: If ..else, jump, goto, break, continue, Switch case statements – Loops in C++: for, while, do – functions in C++ - inline functions – Function Overloading.

### UNIT- II: Classes and Objects

(L-13+T-2 Hours)

Declaring Objects – Defining Member Functions – Static Member variables and functions – array of objects –friend functions – Overloading member functions – Bit fields and classes – Constructor and destructor with static members.

### UNIT- III: Operator Overloading

(L-13+T-2 Hours)

Overloading unary, binary operators – Overloading Friend functions –type conversion – Inheritance: Types of Inheritance – Single, Multilevel, Multiple, Hierarchal, Hybrid, Multi path inheritance – Virtual base Classes – Abstract Classes.

## **UNIT- IV: Pointers**

**(L-13+T-2 Hours)**

Declaration – Pointer to Class , Object – this pointer – Pointers to derived classes and Base classes – Arrays – Characteristics – array of classes – Memory models – new and delete operators – dynamic object – Binding, Polymorphism and Virtual Functions.

## **UNIT- V: Files**

**(L-13+T-2 Hours)**

File stream classes – file modes – Sequential Read / Write operations – Binary and ASCII Files – Random Access Operation – Templates – Exception Handling – String – Declaring and Initializing string objects – String Attributes – Miscellaneous functions.

### **Recommended Text**

1. E. Balagurusamy, “*Object-Oriented Programming with C++*”, TMH 2013, 7<sup>th</sup> Edition.

### **Reference Books**

1. Ashok N Kamthane, “*Object-Oriented Programming with ANSI and Turbo C++*”, Pearson Education 2003.
2. Maria Litvin& Gray Litvin, “*C++ for you*”, Vikas publication 2002.

### **Website ande-learning source**

1. <https://alison.com/course/introduction-to-c-plus-plus-programming>
2. <https://www.geeksforgeeks.org/object-oriented-programming-in-cpp/>
3. [https://www.w3schools.com/cpp/cpp\\_oop.asp](https://www.w3schools.com/cpp/cpp_oop.asp)

**Part-III BCA / Semester – II / Core-4: Practical - C++ Programming Lab**  
**(Course Code: U23CA2P2)**

|                                   |              |                         |
|-----------------------------------|--------------|-------------------------|
| <b>Lecture Hours</b>              | <b>:-</b>    | <b>Tutorial Hours:-</b> |
| <b>Practical Hours</b>            | <b>: 75</b>  | <b>No. of Credit :5</b> |
| <b>Contact Hours per Semester</b> | <b>:75</b>   |                         |
| <b>Contact hours per Week</b>     | <b>:5</b>    |                         |
| <b>Internal Marks</b>             | <b>: 40</b>  |                         |
| <b>External Marks</b>             | <b>: 60</b>  |                         |
| <b>Total Marks</b>                | <b>: 100</b> |                         |

**Objectives of the course**

This course aims at providing knowledge on

- Describe the procedural and object oriented paradigm with concepts of streams, classes, functions, data and objects
- Understand dynamic memory management techniques using pointers, constructors, destructors, etc
- Describe the concept of function overloading, operator overloading, virtual functions and polymorphism
- Classify inheritance with the understanding of early and late binding, usage of exception handling, generic programming
- Demonstrate the use of various OOPs concepts with the help of programs

**Course Learning Outcomes (for Mapping with Pos and PSOs)**

Upon completion of the course the students would be able to:

**CO1:** Remember the program structure of C with its syntax and semantics

**CO2:** Understand the programming principles in C (data types, operators, branching and looping, arrays, functions, structures, pointers and files)

**CO3:** Apply the programming principles learnt in real-time problems.

**CO4:** Analyze the various methods of solving a problem and choose the best method

**CO5:** design and develop the simple application.

### CO-PSO Mapping (Course Articulation Matrix)

| CO/PSO                                                   | PO1          | PO2        | PO3        | PO4        | PO5          | PO6          | PO7          | PSO1       | PSO2       | PSO3         |
|----------------------------------------------------------|--------------|------------|------------|------------|--------------|--------------|--------------|------------|------------|--------------|
| CO1                                                      | 3            | 3          | 3          | 3          | 2            | 3            | 2            | 3          | 3          | 3            |
| CO2                                                      | 2            | 3          | 3          | 3          | 2            | 2            | 2            | 3          | 3          | 3            |
| CO3                                                      | 2            | 3          | 3          | 3          | 3            | 3            | 2            | 3          | 3          | 3            |
| CO4                                                      | 2            | 3          | 3          | 3          | 2            | 2            | 3            | 3          | 3          | 3            |
| CO5                                                      | 2            | 3          | 3          | 3          | 1            | 2            | 2            | 3          | 3          | 2            |
| <b>Total Contribution of COs to POs and PSOs</b>         | <b>11</b>    | <b>15</b>  | <b>15</b>  | <b>15</b>  | <b>10</b>    | <b>12</b>    | <b>11</b>    | <b>15</b>  | <b>15</b>  | <b>14</b>    |
| <b>Weighted percentage of Course Contribution to POs</b> | <b>73.33</b> | <b>100</b> | <b>100</b> | <b>100</b> | <b>66.67</b> | <b>80.00</b> | <b>73.33</b> | <b>100</b> | <b>100</b> | <b>93.33</b> |

**0- No Correlation;**

**1-Weak;**

**2-Moderate;**

**3-Strong**

### LIST OF PROGRAMMING IN C++ PROGRAMMING LAB

1. Write a C++ program to demonstrate function overloading, Default Arguments and Inline function.
2. Write a C++ program to demonstrate Class and Objects
3. Write a C++ program to demonstrate the concept of Passing Objects to Functions
4. Write a C++ program to demonstrate the Friend Functions.
5. Write a C++ program to demonstrate the concept of Passing Objects to Functions
6. Write a C++ program to demonstrate Constructor and Destructor
7. Write a C++ program to demonstrate Unary Operator Overloading
8. Write a C++ program to demonstrate Binary Operator Overloading
9. Write a C++ program to demonstrate:
  - Single Inheritance
  - Multilevel Inheritance
  - Multiple Inheritance
  - Hierarchical Inheritance
  - Hybrid Inheritance
10. Write a C++ program to demonstrate Virtual Functions.
11. Write a C++ program to manipulate a Text File.

12. Write a C++ program to perform Sequential I/O Operations on a file.
13. Write a C++ program to find the Biggest Number using Command Line Arguments
14. Write a C++ program to demonstrate Class Template
15. Write a C++ program to demonstrate Function Template.
16. Write a C++ program to demonstrate Exception Handling.

### **Recommended Text**

1. E. Balagurusamy, "*Object-Oriented Programming with C++*", TMH 2013, 7<sup>th</sup> Edition.

### **Reference Books**

1. Ashok N Kamthane, "*Object-Oriented Programming with ANSI and Turbo C++*", Pearson Education 2003
2. Maria Litvin & Gray Litvin, "*C++ for you*", Vikas publication 2002.
3. "*Object-Oriented Programming Using C++*" by Alok Kumar Jagadev , Amiya Kumar Rath , Satchidananda Dehuri , PHI Learning, 2017.

### **Website and learning source**

1. <https://alison.com/course/introduction-to-c-plus-plus-programming>
2. <https://www.geeksforgeeks.org/object-oriented-programming-in-cpp/>
3. [https://www.w3schools.com/cpp/cpp\\_oop.asp](https://www.w3schools.com/cpp/cpp_oop.asp)

**Part-III BCA / Semester – II / Elective Generic-2: PL/SQL Lab  
(Course Code: U23CA2AP)**

|                                   |              |                       |            |
|-----------------------------------|--------------|-----------------------|------------|
| <b>Lecture Hours</b>              | <b>:</b>     | <b>Tutorial Hours</b> | <b>:</b>   |
| <b>Practical Hours</b>            | <b>: 60</b>  | <b>No. of Credit</b>  | <b>: 3</b> |
| <b>Contact Hours per Semester</b> | <b>:60</b>   |                       |            |
| <b>Contact hours per Week</b>     | <b>: 4</b>   |                       |            |
| <b>Internal Marks</b>             | <b>: 40</b>  |                       |            |
| <b>External Marks</b>             | <b>: 60</b>  |                       |            |
| <b>Total Marks</b>                | <b>: 100</b> |                       |            |

**Objectives of the course**

This course aims at providing an overall view of the

- To enable the students to learn the designing of database systems, foundation on the
- Relational model of data and normal forms.
- To understand the concepts of database management system, design simple Database
- To learn and understand to write queries using SQL, PL/SQL.
- To enable the students to learn the designing of database systems, foundation on the
- Relational model of data and normal forms.
- To understand the concepts of database management system, design simple Database Models

**Course Learning Outcomes (for Mapping with POs and PSOs)**

On completion of this course, students will;

- CO1:** Understand the various basic concepts of Database System. Difference between file system and DBMS and compare various data models.
- CO2:** Define the integrity constraints. Understand the basic concepts of Relational Data Model, Entity-Relationship Model.
- CO3:** Design database schema considering normalization and relationships within database. understand and construct database using Structured Query Language. Attain a good practical skill of managing and retrieving of data using Data Manipulation Language.(DML)
- CO4:** Classify the different functions and various join operations and enhance the knowledge of handling multiple tables.
- CO5:** Learn to design Database operations and implement using PL/SQL programs. Learn basics of PL/SQL and develop programs using Cursors, Exceptions

### CO-PSO Mapping (Course Articulation Matrix)

| CO/PSO                                                  | PO1   | PO2   | PO3   | PO4 | PO5   | PO6   | PO7   | PSO1 | PSO2 | PSO3  |
|---------------------------------------------------------|-------|-------|-------|-----|-------|-------|-------|------|------|-------|
| CO1                                                     | 3     | 3     | 3     | 3   | 2     | 2     | 2     | 3    | 3    | 3     |
| CO2                                                     | 2     | 3     | 3     | 3   | 2     | 2     | 2     | 3    | 3    | 3     |
| CO3                                                     | 2     | 3     | 3     | 3   | 2     | 2     | 2     | 3    | 3    | 3     |
| CO4                                                     | 2     | 2     | 2     | 3   | 3     | 3     | 3     | 3    | 3    | 3     |
| CO5                                                     | 2     | 3     | 3     | 3   | 1     | 2     | 3     | 3    | 3    | 2     |
| Total Contribution of<br>COs to POs and PSOs            | 11    | 14    | 14    | 15  | 10    | 11    | 12    | 15   | 15   | 14    |
| Weighted percentage<br>of Course Contribution<br>to POs | 73.33 | 93.33 | 93.33 | 100 | 66.67 | 73.33 | 80.00 | 100  | 100  | 93.33 |

0- No Correlation;

1-Weak;

2-Moderate;

3-Strong

### COURSE CONTENT

#### I. SQL

1. DDL COMMANDS
2. DML COMMANDS
3. TCL COMMANDS

#### II. PL/SQL

4. FIBONACCI SERIES
5. FACTORIAL
6. STRING REVERSE
7. SUM OF SERIES
8. TRIGGER

#### III. CURSOR

9. STUDENT MARK ANALYSIS USING CURSOR

#### IV. APPLICATION

10. LIBRARY MANAGEMENT SYSTEM
11. STUDENT MARK ANALYSIS

### **Recommended Text**

1. Coronel, Morris, Rob, "*Database Systems, Design, Implementation and Management*", Ninth Edition
2. Nilesh Shah, "*Database Systems Using Oracle*", 2<sup>nd</sup> edition, Pearson Education India, 2016

### **Reference Books**

1. Abraham Silberschatz, Henry F. Korth and S. Sudarshan, "*Database System Concepts*", McGraw Hill International Publication, VI Edition.
2. Shio Kumar Singh, "*Database Systems*", Pearson publications, II Edition

### **Website and e-learning source**

1. Web resources from NDL Library, E-content from open-source libraries

**Part-IV BCA / Semester – II / SEC –2: INTRODUCTION TO HTML**  
**(Course Code: U23CA2S2)**

|                                   |             |                       |            |
|-----------------------------------|-------------|-----------------------|------------|
| <b>Lecture Hours</b>              | <b>:25</b>  | <b>Tutorial Hours</b> | <b>:5</b>  |
| <b>Practical Hours</b>            | <b>:</b>    | <b>No. of Credit</b>  | <b>: 2</b> |
| <b>Contact Hours per Semester</b> | <b>:30</b>  |                       |            |
| <b>Contact hours per Week</b>     | <b>: 2</b>  |                       |            |
| <b>Internal Marks</b>             | <b>: 50</b> |                       |            |
| <b>External Marks</b>             | <b>: -</b>  |                       |            |
| <b>Total Marks</b>                | <b>: 50</b> |                       |            |

**Objectives of the course**

This course aims at providing an overall view of the:

- Insert a graphic with in a web page
- Create a link with in a webpage.
- Create a table with in a webpage.
- Insert heading levels within a webpage.
- Insert ordered and unordered lists within a web page. Create a webpage.

**Course Learning Outcomes (for Mapping with POs and PSOs)**

On completion of this course, students will;

**CO1:** Knows the basic concept in HTML Concept of resources in HTML

**CO2:** Knows Design concept. Concept of Meta Data Understand the concept of saves the files.

**CO3:** Understand the page formatting. Concept of list

**CO4:** Creating Links. Know the concept of creating link to email address

**CO5:** Concept of adding images understand the table creation

## CO-PSO Mapping (Course Articulation Matrix)

| CO/PSO                                            | PO1   | PO2 | PO3   | PO4   | PO5 | PO6 | PO7   | PSO1 | PSO2 | PSO3  |
|---------------------------------------------------|-------|-----|-------|-------|-----|-----|-------|------|------|-------|
| CO1                                               | 3     | 3   | 3     | 3     | 3   | 3   | 2     | 3    | 3    | 3     |
| CO2                                               | 3     | 3   | 2     | 3     | 3   | 3   | 2     | 3    | 3    | 3     |
| CO3                                               | 2     | 3   | 3     | 3     | 3   | 3   | 3     | 3    | 3    | 3     |
| CO4                                               | 3     | 3   | 3     | 3     | 3   | 3   | 3     | 3    | 3    | 3     |
| CO5                                               | 3     | 3   | 3     | 2     | 3   | 3   | 2     | 3    | 3    | 2     |
| Total Contribution of COs to POs and PSOs         | 14    | 15  | 14    | 14    | 15  | 15  | 12    | 15   | 15   | 14    |
| Weighted percentage of Course Contribution to POs | 93.33 | 100 | 93.33 | 93.33 | 100 | 100 | 80.00 | 100  | 100  | 93.33 |

0- No Correlation;

1-Weak;

2-Moderate;

3-Strong

## COURSE CONTENT

### UNIT-I: Introduction

(L- 5+T-1 Hours)

Web Basics: What is an Internet–Web browser–What is Web page–HTML Basics: Understanding tags.

### UNIT-II: Tags

(L- 5+T-1 Hours)

Tags for Document structure (HTML, Head, and Body Tag). Block level text elements: Headings paragraph (<p>tag)–Font style elements :( bold, italic, font, small, strong, strike, big tags)

### UNIT-III: Lists

(L- 5+T-1 Hours)

Types of lists: Ordered, Unordered–Nesting Lists –Other tags: Marquee, HR, BR–Using Images–Creating Hyperlinks.

### UNIT-IV: Tables

(L- 5+T-1 Hours)

Creating basic Table, Table elements, Caption–Table and cell alignment–Row span, Col span –Cell padding.

### UNIT-V: Frames:

(L- 5+T-1 Hours)

Frame set–Targeted Links–No frame–Forms: Input, Text area, Select, Option.

## **Recommended Text**

1. *Mastering HTML5 and CSS3 Made Easy*, Teach U Comp Inc., 2014.
2. Thomas Michaud, *“Foundations of Web Design: Introduction to HTML & CSS”*

## **Reference Books**

1. *HTML & CSS: The Complete Reference*, Thomas A. Powell, Fifth Edition.
2. *Web Technologies: HTML, JAVASCRIPT, PHP, JAVA, JSP, ASP.NET, XML and Ajax, Black Book*, January 2009 by Kogent Learning Solutions Inc.

## **Website and learning source**

1. <https://www.teachucomp.com/samples/html/5/manuals/Mastering-HTML5-CSS3.pdf>
2. <https://www.w3schools.com/html/default.asp>

**Part-IV BCA/Semester – II/ SEC–3: Office Automation**  
**(Course Code: U23CA2S3)**

|                                   |             |                       |           |
|-----------------------------------|-------------|-----------------------|-----------|
| <b>Lecture Hours</b>              | <b>: 25</b> | <b>Tutorial Hours</b> | <b>:5</b> |
| <b>Practical Hours</b>            | <b>:</b>    | <b>No. of Credit</b>  | <b>:2</b> |
| <b>Contact Hours per Semester</b> | <b>:30</b>  |                       |           |
| <b>Contact hours per Week</b>     | <b>: 2</b>  |                       |           |
| <b>Internal Marks</b>             | <b>: -</b>  |                       |           |
| <b>External Marks</b>             | <b>:50</b>  |                       |           |
| <b>Total Marks</b>                | <b>: 50</b> |                       |           |

**Objectives of the course**

This course aims at providing an overall view of the

- Understand the basics of computer systems and its components.
- Understand and apply the basic concepts of a word processing package
- Understand and apply the basic concepts of electronic spreadsheet software.
- Understand and apply the basic concepts of database management system.
- Understand and create a presentation using PowerPoint tool.

**Course Learning Outcomes (for Mapping with POs and PSOs)**

On completion of this course, students will;

**CO1:** Possess the knowledge on the basics of computers and its components

**CO2:** Gain knowledge on Creating Documents, spreadsheet and presentation.

**CO3:** Learn the concepts of Database and implement the Query in Database.

**CO4:** Demonstrate the understanding of different automation tools

**CO5:** Utilize the automation tools for documentation, calculation and presentation purpose

### CO-PSO Mapping (Course Articulation Matrix)

| CO/PSO                                            | PO1   | PO2   | PO3   | PO4   | PO5   | PO6   | PO7   | PSO1 | PSO2 | PSO3 |
|---------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|------|
| CO1                                               | 2     | 3     | 1     | 3     | 3     | 1     | 3     | 3    | 3    | 3    |
| CO2                                               | 3     | 2     | 2     | 3     | 3     | 3     | 2     | 3    | 3    | 3    |
| CO3                                               | 3     | 2     | 3     | 2     | 1     | 3     | 2     | 3    | 3    | 3    |
| CO4                                               | 3     | 3     | 3     | 2     | 2     | 1     | 3     | 3    | 3    | 3    |
| CO5                                               | 2     | 2     | 1     | 3     | 1     | 3     | 2     | 3    | 3    | 2    |
| Total Contribution of COs to POs and PSOs         | 13    | 12    | 10    | 13    | 10    | 11    | 12    | 15   | 15   | 14   |
| Weighted percentage of Course Contribution to POs | 86.66 | 80.00 | 66.67 | 86.66 | 66.67 | 73.33 | 80.00 | 100  | 100  | 93.3 |

0

0 - No Correlation;

1-Weak;

2-Moderate;

3-Strong

### COURSE CONTENT

#### UNIT -I: Introductory concepts

(L- 5+T-1 Hours)

Memory unit– CPU-Input Devices: Key board, Mouse and scanner. Output devices: Monitor, Printer. Introduction to Operating systems & its features: DOS– UNIX Windows. Introduction to Programming Languages.

#### UNIT- II: Word Processing

(L- 5+T-1 Hours)

Open, Save and close word document; Editing text –tools, formatting, bullets; Spell Checker- Document formatting–Paragraph alignment, indentation, headers and footers, numbering; printing– Preview, options, merge.

#### UNIT- III: Spreadsheets

(L- 5+T-1 Hours)

Excel–opening, entering text and data formatting, navigating; Formulas–entering, handling and copying; Charts–creating, formatting and printing, analysis tables, preparation of financial statements, introduction to data analytics.

#### UNIT -IV: Database Concepts

(L- 5+T-1 Hours)

The concept of data base management system; Data field, records, and files, Sorting and indexing data; Searching records. Designing queries, and reports; Linking of data files; Understanding Programming environment in DBMS; Developing menu drive applications in query language (MS–Access).

## **UNIT -V: Power point**

**(L- 5+T-1 Hours)**

Introduction to Power point - Features – Understanding slide typecasting & viewing slides–creating slide shows. Applying special object – including objects & pictures – Slide transition–Animation effects, audio inclusion, timers.

### **Recommended Text**

1. Peter Norton, –*Introduction to Computers*–Tata McGraw-Hill.

### **Reference Book**

1. Jennifer Ackerman Kettel, Guy Hat-Davis, Curt Simmons, –*Microsoft 2003*, Tata Mc Graw Hill.

### **Website and e-learning source**

1. <https://www.udemy.com/course/office-automation-certificate-course/>
2. <https://www.javatpoint.com/automation-tools>