Gujarat University
K. S. School of Business Management and Information Technology
[Five Years' (Full – Time) M.Sc. (CA&IT) Integrated Degree Course]
First Year M.Sc. (CA&IT) (Semester - I)

Course Name: Fundamental of Programming

Course code: DSC-C-IMSCIT-111T

Course Credit: 4

Course Outcomes:

- ➢ Able to formulate algorithm / flowchart for given problem.
- ➢ Able to understand basic concepts of programming.
- ➢ Able to handle possible errors during program execution.
- ➢ Develop modular applications using C programming language.

Contents:

Unit No.	Course Content	Hours	Credits
1	**Basics of C:** **Introduction To Programming:** Understanding logic using flowchart, Algorithms. **Programming With C:** History of C, Basic Structure of C, Execution of C using Flowchart. Constant, Variables and Data types, character set & C tokens, Keywords & Identifiers, Comments, operators & expressions, Type Casting. **Decision Making Structure:** Simple if Statements, if-else, Nested if-else, else if ladder, Conditional Operators, switch, break And continue, goto statement.	15	1
2	**Looping and Array:** **Loop Control Structure:** While Statement, Do-While Statement, For Statement , Nested Loop, Jumps in Loops. **Array:** Concept of array, declaration & Initialization of Array, One Dimensional, Two Dimensional. **Character Arrays and Strings:** String handling and different operation on String.	15	1
3	**Function and Structure, unions:** **Function:** Concepts of user defined functions, call by value, call by reference, recursion. **Structure:** Defining Structure, Declaring Structure Variables, Accessing Structure Members, Structure Initialization, Structure Within Structures, union.	15	1

4	**Pointers and File Management:** **Pointers:** Concept of pointers, pointer variables, Pointer Expressions, Array of Pointers. **File Management:** Introduction to File management, Creating a file, Reading and Writing Data from file. Command line Arguments	**15**	**1**

Reference Books:

1. Programming ANSI C
   By E Balagurusamy, Tata McGraw-Hill Publication and GCC manuals available on UNIX/LINUX
2. C Complete Reference
   By Herbert Scheildt, Tata McGraw-Hill Publication.
3. Programming With C,
   By Gottfried, Tata McGraw-Hill Publishing.
4. 'C How to program'
   By Deitel and Deitel, Pearson.
5. Programming For Problem Solving.
   By Dr. S. M. Shah and Dr. P. P. Kotak.

Accomplishments of the student after completing the Course:

After completion of this course Student would be able to

- Gain a comprehensive understanding of the C programming language and its foundational concepts.
- Be adept at writing, debugging, and optimizing C programs for a variety of tasks.
- Have the ability to translate real-world problems into efficient algorithms and then implement them using C.
- Be proficient in using advanced data structures like structures, unions, pointers, and arrays.
- Have the skills to manage files and handle various file operations using C.