



Course Code	Course Name	Credits
20MCACC107	Core Practical 2: Fundamental of Programming using C	02

❖ Aim of the Course:

- 1 The aim of this course is to introduce to the students the rudiments of structured programming using C language. Students will become familiar with problem solving techniques and algorithm development.

❖ Course Overview and Context:

- 1 The course is divided into five units. The first units deal with basic introduction of the programming and basics of C. Unit-2 designed to learn concepts of control statements and arrays. Unit-3 is designed to learn the concept of functions and pointers. Unit-4 is designed to learn the concept of file handling and User Defined Data Types. Unit-5 is an introductory unit for singly linked list, bitwise operators and C Pre-processor statements.

❖ Course Outcomes:

Sr #	Course Outcome	Cognitive Level
1	To illustrate and explain basic concepts of programming	Understand
2	To understand the concept of control statements.	Understand
3	To translate the real-life situations in programming form and solve them using some fundamentals of Programming.	Understand, Apply
4	To translate the real-life situations in programming form and solve them by storing data into files and analysed user defined data types and test and detect that it is optimized applications.	Understand, Apply Analyze Evaluate
5	To understand the real-life situation in programming and solve it using concepts of linked list bitwise operators and c preprocessor statements.	Understand, Apply

❖ Content of the Course:

Unit-1 Introduction to Programming & Basics of C

- Concepts of Algorithm & Flowcharts
- Process of Compilations
- Generic of Language, Basic features of C Language like indenter, keyword, variable, data types, operators and expression, Basic Screen and Keyboard I/O.

Unit-2 Control Statements, Arrays & String

- Test Condition
- Conditional execution and selection
- Iteration and Repetitive Executions
- Nested Loops
- Introduction to contiguous data types
- One dimensional arrays, multidimensional arrays
- Array as strings
- Multidimensional character arrays
- Operations on strings

Unit-3 Function and Pointers



- Concept of modular programming
- Using functions
- Scope of data
- Recursive functions
- Command line arguments
- Need of pointer
- Types and uses of pointer
- Array and Pointers
- Pointers and strings
- Pointer to Pointer
- Pointers and functions
- other aspect of pointers.

Unit-4 User Defined Data Types and File Handling

- Introduction to structures
- Usage of structure
- Nested structures
- Union and its usage
- Enumeration types
- Bit fields.
- Types of files
- Working with files
- Usage of file management functions.

Unit-5 Introduction to Linked List and Other Features of C

- Introduction to dynamic memory allocation
- Singly link list
- Operations on singly link list
- Bitwise operators and its usage
- C Pre-processor statements

❖ Learning Resources:

Sr #	Textbook References Internet Links
1	Programming in C, by Pradip Dey & Manas Ghosh, Publisher – Oxford
2	C: The Complete Reference, by Herbert Schildt, Publisher – Tata McGraw Hill.
3	Let us C, by Yashwant Kanitkar, Publisher – BPB Publication
4	Schaum's Outline of Programming with C, By: Byron Gottfried, Publisher Shaum Series
5	Programming with ANSI and Turbo C, by Ashok N Kamthane, Publisher – Pearson Education

❖ Assignments (Optional):

Sr #	Description	Available From (Date)	Submission Date
1	Basics of C, Control Statements	After 3 Weeks	Within 10 Days
2	Functions, Pointers, User Defined Data Types	After 6 Weeks	Within 7 Days