Syllabus: Certificate in C Programming Language

- **Duration:** 3 Months
- **Eligibility:** 10th Pass

Evaluation Scheme

- **Full Marks:** 200
- **Theory:** 100 Marks
- **Practical/Project Works:** 80 Marks
- **Internal Assessment/Viva (Oral Test):** 20 Marks

Course Syllabus

This course provides a solid foundation in procedural programming using the C language, covering everything from basic syntax to advanced topics like pointers and file handling.

Module 1: Fundamentals of C Programming

- Introduction to Programming: Algorithms and Flowcharts.
- History and Features of C.
- Structure of a C Program.
- Data Types, Variables, and Constants.
- Operators: Arithmetic, Relational, Logical, and Assignment.
- Basic Input/Output operations (printf, scanf).

Module 2: Control Flow Statements

- **Decision Making:** if, if-else, nested if-else, switch-case.
- **Looping:** for, while, do-while loops.
- Branching statements: break, continue, goto.

Module 3: Functions and Arrays

- **Functions:** Declaration, Definition, and Calling.
- Function parameters and return values.
- Recursion.
- **Arrays:** One-dimensional and two-dimensional arrays.
- Passing arrays to functions.

Module 4: Pointers, Strings, and Structures

- **Pointers:** Introduction to pointers, pointer arithmetic.
- Pointers and Arrays.
- **Strings:** Working with strings and string library functions.
- **Structures:** Defining and using structures and unions.

Module 5: File Handling & Final Project

- **File I/O:** Opening, closing, reading from, and writing to files.
- Introduction to Preprocessor Directives.
- **Final Project:** Develop a console-based application to demonstrate the concepts learned.
- **Example Project:** A simple "Student Record System" or "Library Management System" that uses files to store data.