Course Code- **MC1102** Course Title- **Computer Programming**

| Teaching Scheme | | | | Examination Scheme | | | |
|---|---|---|---|---|---|---|---|
| Lectures | Tutorials | Practicals | Credits | CT | TA | ESE | Total |
| 3 | 1 | - | 4 | 20 | 20 | 60 | 100 |

**Course Objectives**

1 To provide complete knowledge of C programming language to the students.
2 Students will be able to develop the logic to create programs.
3 To provide exposure to problem solving through programming.

**Course Outcomes-** After studying this course, students will be able

CO 1 To demonstrate an understanding of computer programming language concepts.
CO 2 To define data types and use them in data processing applications.
CO 3 To use the comparison and limitations of various programming constructs and choose the right one for the task.
CO 4 To understand the dynamic behaviour of memory by use of pointers.
CO 5 To write programs, edit, compile, debug, correct, recompile and run.

## Course Contents

| Unit No | Detailed Contents | Contact Hours |
|---|---|---|
| 1 | **Introduction to C Language:** The C character set, Identifiers and keywords, Data types, Variables and Constants, Statements, Symbolic constants, Operators and expressions, Type conversion, Data input and output | 6 |
| 2 | **Control statement:** Branching - if else statement, Looping, Nested control structure, Switch statement, Break statement, Continue statement, Goto statement.<br>**Arrays:** Defining an array, one and two dimensional arrays, Strings: One dimensional character array, array of strings | 6 |
| 3 | **Functions:** Overview, function prototypes, function definition, passing arguments to a function, scope of variable names, recursion.<br>**Program structure:** Storage classes, automatic variables, external variables, static variables, multifile program.<br>**Arrays:** Passing array to functions, String manipulation. | 6 |
| 4 | **Pointers:** Fundamentals, operation on pointers, accessing arrays through pointers, dynamic memory allocation, pointers and strings, pointers to function.<br>**Structures and unions:** Defining a structure, operations on structures, passing structuresas function arguments. Union. | 6 |
| 5 | **File Manipulation:** Opening and closing a data file, reading and writing a data file, processing a data file, unformatted data file, concept of | 6 |

binary file.

**Low level programming:** Register variable, bitwise operations, bit fields.

**Additional features of C:** Enumeration, Command line parameters, Macros.

**Text Books**

1 Programming in ANSI C, E. Balagurusamy, TMH

**Reference Books**

1 Programming with C, Gottfried, TMH
2 C The Complete Reference, Schildt, TMH
3 The c programming language,Brian W Kernighan & Dennis Ritchie, 2nd Edition Eastern Economy Edition, Prentice Hall.
4 Let us C, YashavantKanetkar, BPB publication
5 Programming in C, PradipDey, ManasGhosh ,Oxford Higher Education.

**E Books/ Online learning material**

1 www.cprogramming.com
2 www.learn-c.org
3 www.coursera.org/specializations/c-programming
4 www.w3resource.com/c-programming/programming-in-c.php
5 http://nptel.ac.in/courses/106/104/106104128/
6 www.swayam.gov.in

**Assessment Table:**

| Assessment Tool | Course Outcomes | | | | |
|---|---|---|---|---|---|
| | CO1 | CO2 | CO3 | CO4 | CO5 |
| Evaluation I (Class Test) 20 Marks | 5 | 5 | 5 | | 5 |
| Teachers Assessment 20 Marks | | | | | |
| ESE Assessment 60 Marks | 12 | 12 | 12 | 6 | 18 |

**Teaching Strategies:**

1. Utilizing technology in the classroom.
2. Co-operative learning
3. Questioning to check for understanding
4. Plenty of practice
5. Be flexible about how long it takes to learn
6. Get students working together.