# MANGALORE UNIVERSITY

## Department of Electronics

## MSc Electronics

### ELS 404 - PROGRAMMING IN C

**Course Outcome:-**

1. Understand the fundamentals of C programming.
2. Choose the loops and decision making statements to solve the problem.
3. Implement different Operations on arrays.
4. Use functions to solve the given problem.
5. Understand pointers, structures and unions.
6. Implement file Operations in C programming for a given application.

### UNIT I

Simple C Programs: Program, Structure, Constants and Variables, Assignment Statements, Standard Input and Output, Mathematical Functions, Character Functions, Control Structures and Data Files: Algorithm Development, Conditional Expressions, Selection Statements, Loop Structures.

**12 Hours**

### UNIT II

Data Files, Modular Programming with Functions: Modularity, Programmer-Defined Functions, Random Numbers, Macros, Recursion Arrays and Matrices: One-Dimensional Arrays, Sorting Algorithms, Search Algorithms, Two-Dimensional Arrays, Matrices and Vectors, Higher Dimensional Arrays.

**12 Hours**

### UNIT III

Programming with Pointers: Addresses and Pointers, Pointers to Array Elements, Pointers in Function References, Character, Strings, Dynamic Memory Allocation, A Quicksort Algorithm. Programming with Structures: Structures, Using Functions with Structures,

Arrays of Structures, Dynamic Data Structures. **12 Hours**

**Books:**

(1). “ENGINEERING PROBLEM SOLVING WITH C”, FOURTH EDITION, Delores M. Etter, Pearson,2013

(2). “Programming in ANSI C” – E Balagurusamy, Tata McGraw Hill, Sixth Edition, 2012

(3). “Let Us C”- Yashavant Kanetkar, BPB Publications, 13 th Edition, 2013

(4). “The C Programming Language”- Brian W. Kernighan, Dennis M. Ritchie, Prentice Hall, Second Edition,