MCA-03   Computer Programming using C

Unit 1 : Introduction to Programming
Basic definition of Pseudo Code, algorithm, flowchart, program, Elementary data types, variables, constants and identifiers. Integer, character floating point and string constants. Variable declarations. Syntax and semantics. Reserved word Initialization of variable during declarations, Symbolic Constants.

Unit 2: Operators and Expressions
Expression in C, Different types of operators: Arithmetic, Relational and Logical, Assignment, Conditional, Increment and decrement, Bitwise, Comma and other operator (sizeof, period etc). Precedence and associatively of operators, type casting.

Unit 3: Decision and Control Structures
Various input /output functions like scanf, getch, getchar, printf, putchar. Conditional Statement- if, if- else, nested if-else switch ,Other Statement –break, continue, goto, Concept of Loops: while, do-while, for, nested loops.

Unit 4: Storage Class
Automatic, External, Static, Register, Scope and lifetime of variables, Macro, Preprocessor directive.

Unit 5: Functions
 Function: function declaration, function definition, function call (Call by value, Call by reference), Formal and Actual parameter, Recursive function.

Unit 6: Structures and Unions
Structure declarations, definitions, array of structure, pointers to structures, Union definition, declaration, use; Enumerated data types, defining your own types (typedef)

Unit 7: Arrays and Pointers
Array, 1-Dimensional array, 2-Dimensional array and its declaration, String, Pointers - Declaration, Passing pointer to a Function, Pointer and One-dimensional Arrays, Dynamic Memory Allocation.

Unit 8: File Handling
Opening, closing, reading and writing of files. Seeking forward and backward. Examples of file handling programs.

Suggested Readings:

1.   Balagurusamy, E: Programming in ANSI C, Tata McGraw-Hill publication

2.   Gottfried Byron S: Programming with C, Tata McGraw-Hill publication