

# **Introduction to Computer Programming using C**

## **SECIT-01**

### **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 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 associativity 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, for, switch, other Statement- break, continue, goto. Concept of Loop while, do-while, for, nested loops.

### **Unit 4: Strong 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**

File: Opening, Closing, reading and writing of files. Seeking forward and backward. Examples of file operation programs

### **Suggested Readings:**

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