

FCEN0402 INTRODUCTION TO PROGRAMMING IN C

Course Objectives:

1. To provide basic knowledge of programming tools and techniques.
2. To familiarize the programming environment and syntax of C programming.
3. To understand the working of basic programming constructs.
4. To learn different powerful concepts that can be applied in project development.
5. To develop art of writing efficient programs.

Course Outcomes:

1. The students will be able to apply programming skills to problem solving.
2. The student will be able to write 150 to 200 lines programs without any error.
3. At the end of the session the students can come out with a mini project applying their programming skills.

Module I: (23Hours)

- (A) Problem solving techniques: Algorithm, flow chart; Structure of C program, Character set, Identifiers, Keywords, Data Types, Constants and Variables, Input-output statements, relational and logical operators, increment and decrement operators, conditional operator, bit-wise operators, assignment operators, expressions, type conversions, conditional expressions, precedence and order of evaluation, statements and blocks, if and switch statements, loops:-while, do-while and for statements, break, continue, goto.

Module II: (30 Hours)

- (B) Arrays-concepts, declaration, definition, accessing elements, two-dimensional and multi-dimensional arrays, applications of arrays. Designing structured programs:- Functions, parameter passing, user defined functions, recursive functions, storage classes-extern, auto, register, static, scope rules. pointers- concepts, initialization of pointer variables, pointers and function arguments, address arithmetic, Character pointers and functions, pointers to pointers, pointers and multidimensional arrays, dynamic memory management functions, command line arguments.

Module III: (27 Hours)

- (C) Derived types-structures-declaration, definition and initialization of structures, accessing structures, nested structures, arrays of structures, structures and functions, pointers to structures, self-referential structures, unions, typedef, bit fields, C program examples. Input and output-concept of a file, text files and binary files, streams, standard I/O, Formatted I/O, file I/O operations.

Text Books:

1. E. Balaguruswamy "Programming in C", Tata McGraw Hill 3rd edition
2. Y. Kanetkar, "Let us C", BPB Publications-9th edition.

Reference:

1. H. Scheldt, "C The Complete Reference", Tata McGraw Hill
2. B.W. Kernighan & D.M. Ritchie, "C Programming Language", PHI.
3. Schaum Series- "C Programming"-Gottfried