CS - 01: PROGRAMMING IN C

Objective: To develop basic programming skill, concept of memory management and file concept.

Unit : 1

Introduction of C Language

- Introduction to Programming
- Various Computer Languages
- History & Overview of C Language
- Difference between traditional C and modern C
- C character set
- C tokens
    - Keywords
    - Constants
    - Strings
    - Identifiers and variables
    - Operators
- Operators & Hierarchy of operators
- Data types in c
- Type casting & Type Conversion
- Pre – Processors in C

Introduction of Logic Development Tools

- Introduction of Logic & Basic of Algorithm.
- Basics of Flow Chart
- Dry-run and its Use.
- Other Logic development techniques (Algorithm and Flowchart Based on Programming)

Unit : 2

Branching & Looping

- Decision structure
    - If statements(All Types)
    - Switch statement
    - Conditional ternary operator
- Looping Structures
    - For loop
    - Do…while loop
    - While loop
    - Nesting of loops
- Jumping statements
    - Break statement
    - Continue statement
    - Go to statements

Unit : 3

Library Functions

- Introduction of Library Function
- Brief overview of Header Files (stdio.h, conio.h, math.h, string.h, stdlib.h, ctype.h, graphic.h, process.h, dos.h)
- Types of library functions

String Function: strcpy, strncpy, strcat, strncat, strchr, strcmp, strncmp, strlen, strstr

Mathematical Functions: ceil, div, exp, fabs, floor, fmod, log, pow, sqrt

Date & Time Functions: clock, time, gmtime, localtime

Graphics Functions: initgraph,closegraph,arc,line,circle,ellipse,getx,putx,setcolor, setbkcolor

I/O Formatting Functions: printf, scanf, getc, getchar, gets, putc, putchar, puts

Miscellaneous Functions: delay, clrscr, isalnum, isalpha,isdigit, islower, isprint, isspace, isupper, toupper, tolower

Standard Library functions: abs , atof , atol , exit , free , rand

Memory Allocation Functions: malloc , realloc , calloc

User Define Functions (udf)

- Concept of User Define Function
- Types of user defined functions
- call by value & call by reference
- Nesting & Recursion
- Storage classes

Unit : 4

Array

- Concept of Array
- Types of arrays
  - Single dimensional array
  - Two dimensional array
  - Multi-dimensional array
- String arrays
- Array with functions using UDF
- Use of Arrays in Programming

Structures

- Concept of Structure
- Initializations and declarations
- Array with structures
  - Array of Structure
  - Array Within Structure
- Udf with structures

- Nested structures
- Introduction to union
- Difference between Structure & Union

Unit : 5

Pointers

- Concept of Pointers
- Pointer to Variables
- Pointer to Array
- Pointer within Array
- Pointer To Structure
- Pointers within structure
- Pointer to Pointer
- Use of pointers in Dynamic Programming

File Handling

- Concept of data files
- Importance of file handling
- I/O Operation
- Command line arguments

	Class Room	Seminar	Expert Talk	Test	Total
No. Of Lecture	**60**	**05**	**05**	**05**	**75**

Reference Books:

No.	Name	Author / Publication
1	**Programming in ANSI C**	E. Balagurusami
2	**Let Us C**	Yashwant Kanetkar.
3	**Working with C**	Yashwant Kanetkar.
4	**Programming in C**	Schaum Series publication.

Web site References :

- https://www.tutorialspoint.com/cprogramming/index.htm
- http://www.eskimo.com/~scs/cclass/notes/top.html
- http://c-faq.com/
- http://www.learn-c.org/
- https://www.tutorialspoint.com/cprogramming/cprogramming_tutorial.pdf
- https://www.w3schools.in/c-tutorial/
- https://www.javatpoint.com/c-programming-language-tutorial