B.Sc. Part – I Computer Science Optional (Semester– II) (NEP)
Course I   Course Code: DSC-III
Course Title: Advanced C Programming
Total Contact Hours: 30 Hrs (30 lectures of 60 min.)
Teaching Scheme: Theory – 02 Lect. / Week

Credits: 02   **Total Marks: 50**

Course Outcomes:

After successful completion of this course, students will able to:

1) Understand the concept and importance of pointers in C language.
2) Demonstrate an understanding of functions in problem solving.
3) Understand working of structure and dynamic memory allocation.
4) Apply file handling techniques using C language.

Unit – 1 Pointers and Functions: (15hrs.)

(A) Pointers: Definition and Declaration, Pointer Declaration, Pointer Initialization, Pointer Arithmetic, Arrays and Pointers, Pointers and One-Dimensional Arrays, Pointers and Two-Dimensional Arrays, Call by value and call by reference, Dynamic Memory Allocation

(B) Programming for Functional Functions: Introduction, types of functions, Function Declaration, Function Definition, Function Call, Scope of variables, Nested Functions, Recursion, Storage classes.

Unit – 2 Structures and File Handling: (15 hrs.)

(A) Structure: User-Defined Data Types, Defining and declaring structure, size of structure, accessing members using Member direct selector operator (.), Nested Structure, Structure and Array.

(B) File Handling: Defining and opening a file, File opening modes- read, write, append, closing a file, Input/Output Operations on file: getc(), putc(), getw(), putw(), fprintf(), fscanf(), ftell(), fseek(),rewind().

Reference Books:

1. "C Programming in an Open Source Paradigm: A Hands on approach", K.S.Oza, S.R.Patil, R.K.Kamat River Publisher Series in Information Science and Technology, Netherland 978-87-93237-67-4 ,2015

2. ANSI C – E.Balgurusamy

3. Let us C – Y.C.Kanetkar

4. 'C' programming – DennisRitchie

5. Programming in 'C' - Venugopal