

NIRMA UNIVERSITY
Integrated B. Tech. (CSE)-MBA programme
Term - II

L	T	P	C
2	0	2	3

Course Code	CSI0205
Course Title	Structured Programming

Course Outcomes:

After successful completion of the course, a student will be able to –

1. explain the importance of modular programming
2. apply pointers and structures to solve programming problems
3. create files and apply memory management techniques in programming language

Syllabus:

**Teaching
hours: 20**

Unit I

5

Introduction to Structural programming: Understanding Structural Programming and its Importance.

Functions: Introduction to modular programming, User defined functions, formal parameters, actual parameters Passing Arguments by Value and By Reference, Scope Rules, Recursion, Recursion vs. Iteration, Math Library Functions, Passing Arrays to Functions.

Unit II

5

Pointers: Pointer Variable Definitions and Initialization, Pointer Operators, Passing Arguments to Functions by Reference, Pointer Expressions and Pointer Arithmetic, Relationship between Pointers and Arrays, Arrays of Pointers, Pointers to Functions.

Unit III

5

Structure and Union: Structure Definition, Declaring Variables of Structure, Initializing Structures, Accessing Structure Members, Using Structures with Functions and Pointers, Union.

File Handling and memory management: Files and Streams, Creating a File, Reading and writing Data from a File and to a File, File handling functions, dynamic memory allocation using malloc, calloc and realloc.

Self-Study:

The self-study contents will be declared at the commencement of semester. Around 10% of the questions will be asked from self-study contents.

Laboratory Work:

Laboratory work will be based on above syllabus with minimum 8 experiments to be incorporated.

Suggested Readings[^]:

1. Deitel and Deitel, 'C How to program', Pearson.
2. E Balagurusamy, 'Programming in ANSI C', McGraw Hill.
3. Yashwant Kanitkar, 'Let Us C', BPB Publications.
4. Kernighan., Ritchie, 'ANSI C Language', Prentice Hall of India.
5. V Rajaraman, 'Fundamentals of Computers', Prentice Hall of India.

L=Lecture, T=Tutorial, P=Practical, C=Credit

[^]this is not an exhaustive list