

GOAPAL KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY
GOURAHARI VIHAR, PO: RANIPUT, JEYPORE – 764 005

LESSON PLAN

Name of the Subject: 23ES1003 Programming in C and Data Structure

Session : 2025-26

Name of the Faculty: Amod Kumar Bagh

Semester: 1ST

Branch: Computer Sc.&Engg.

Semester From: AUGUST

No. of Weeks: 16 Weeks

Week	Day	Theory Topics	Classes
		Unit 1: Introduction to Programming	08
1	1	Components of computer	1
	2	Introduction to C	1
	3	Algorithm and Flowchart	1
2	4	Character set, Identifiers, Keywords,	1
	5	Data types	1
	6	Constants, Variables, Local, Global, Static Variable	1
3	7	Structure of C, Compilation, Execution	1
	8	Example Discussion	1
		Unit 2: Arithmetic expressions, operators and precedence, Conditional Branching and Loops, Arrays:	20
	9	Arithmetic Expression, Operators	1
4	10	operator precedence	1
	7	Conditional Branching/Control statements(if, if-else, nested if-else/ladder)	2
	8		
5	9	Evaluation of Control statement	1
	10	Control Loop (while, do-while and for loop)....	3
	11		
6	12	Evaluation of conditionals and consequent branching	3
	13		
	14		
7	15	Iteration and loops	3
	16		
	17		
8	18	Arrays , 1-D	1
	19		
	20		
9	21	2-Dimensional Array	2
	22	Character arrays and Strings	3

	23		
10	24		
		Unit 3: Function, Recursion:	09
	25	Functions (including using built in libraries),	1
	26	Parameter passing in functions	1
11	27	Functions, Categories, Actual Arguments And Formal Arguments,	1
	28	Call By Value, Call By Reference, Monolithic Vs Modular Programming,	2
	29		
12	26	Recursion, Example programs, such as Finding Factorial, Fibonacci series	2
	27		
	28	Ackerman function	1
13	29	Quick sort or Merge sort.	1
		Unit 4: Pointers , Structure, File handling	07
	30	Idea of pointers, Defining pointers, Use of Pointers in self-referential structures	1
	31	linked list (no implementation), Dynamic memory allocation.	1
14	32	Structures, Defining structures and Array of Structures,	3
	33		
	34		
15	35	Structure vs Union.	1
	36	File handling: ASCII and binary Files	1
		Unit 5: Basic Algorithms	6
	37	Searching (Linear and Binary)	2
36			
16	37	Basic Sorting Algorithms(Bubble, Insertion, and Selection),	2
	38		
	39	Concepts of time and space complexity.	2
17	40	Case Studies/ Revisions	
	41		
	42		

RECOMMENDED BOOKS

- (i) ReemaThareja, Introduction to C Programming, 2nd Edition, Oxford University Press.
- (ii) E. Balaguruswamy, Programming in ANSI C, Tata McGraw-Hill

Suggested Reference Books

- (i) Brian W. Kernighan and Dennis M. Ritchie, The C Programming Language, Prentice Hall of India
- (ii) Byron Gottfried, Schaum's Outline of Programming with C, McGraw-Hill
- (iii) PradipDey and ManasGhosh, Programming in C, Oxford University Press.

NPTEL Lectures

1. <https://nptel.ac.in/courses/106/106/106106092/>
2. <https://nptel.ac.in/courses/106/102/106102229/>
3. <https://nptel.ac.in/courses/106/101/106101234/>