



Lesson Plan

Program: BCA

Semester: I

Course Code: BCA-102

Course Name: Programming Principle & Algorithm

Course Objectives

CO1- To introduce the basic concept of C Programming.

CO2- To describe the various operator used in C Programming.

CO3- To learn the concept of decision making and control structure in C programming.

CO4- To study the problem solving concepts, algorithm and flowchart.

CO5- To learn the concepts of function and recursion in C.

Session Duration: 60 minutes

Participants: BCA First Semester Students

Entry level knowledge and skills of students

- i. Computer Fundamentals

Equipment required in Classroom/ Laboratory/ Workshop

- i. Projector
- ii. White Board/ Marker

Assessment Schemes

S. No.	Criteria	Marks (100)
1	CCSU End Term Examination	75
2	Internal Evaluation Scheme	25
2(a)	Teacher Assessment (Continuous Evaluation) (Assignment & Attendance)	25
2(a)(i)	Assignment-1	10
2(a)(ii)	Assignment-2	10
2(a)(iii)	Attendance (compulsory)	5

Course Outcomes (starting with action-oriented observable and measurable verb)

(CO1)	Able to define and understand the basic concept of Tokens and Data Types	Remembering K(1), Understand K(2)
(CO2)	Able to define & implement the operator used in C Programming	Understanding K(2), Applying K(3)
(CO3)	Able to implement the Decision making and control structure in C programming	Applying K(3)
(CO4)	Able to understand the problem solving concepts, Algorithm and flowchart	Remembering K(1), Understanding K(2)
(CO5)	Able to implement the concept of function and Recursion.	Applying K(3)



L. No.	Topics	Sub Topics	Date of implementation	Pedagogy	CO-Covered	Faculty Sign	HO's Remark with Date
Unit - 1							
1.	Discuss Syllabus	Course Objective & Outcome		Lecture	CO-1 TO CO-6		
2.	Introduction to 'C' Language:	Programming Languages, History,		Lecture	CO1		
3.		Structures of 'C' Programming		Lecture	CO1		
4.		Function as building blocks		Lecture, Demonstration	CO1		
5.	Language Fundamentals:	Character set, C Tokens, Keywords, Identifiers, Variables, Constant, Comments		Lecture, Demonstration	CO1		
6.	Data Types	Data Types		Lecture	CO1		
7.		Revision Unit-1		Brainstorming, Buzz Grouping, Practice Qus.	CO-1		
8.		Discuss University Questions		Brainstorming, Buzz Grouping,	CO-1		
Unit - 2							
9.	Operators	Types of operators		Lecture	CO-2		
10.		Precedence and Associativity, Expression,		Lecture	CO-2		
11.		Statement and types of statements		Lecture, Demonstration	CO-2		
12.	Build in Operators and function	Console based I/O and related built in I/O function: printf(), scanf(), getch(), getchar(), putchar();		Lecture, Demonstration	CO-2		
13.	Preprocessor directives	Concept of header files, #include, #define		Lecture, Demonstration	CO-2		
14.		Revision Unit-2		Brainstorming, Buzz Grouping, Practice Qus.	CO-2		
15.		Discuss University Questions		Brainstorming, Buzz Grouping	CO-2		
Unit - 3							
16.	Control structures:	Decision making structures: If, If-else		Lecture, Demonstration	CO-3		



17.		Nested If-else, Else if ladder		Lecture, Demonstration	CO-3		
18.		Switch		Lecture, Demonstration	CO-3		
19.	Loop Control structures:	While, Do while, for, Loop		Lecture, Demonstration	CO-3		
20.	Jump statements	break, continue, goto, exit		Lecture, Demonstration	CO-3		
21.		Revision Unit-3		Brainstorming, Buzz Grouping, Practice Qus.	CO-3		
22.		Discuss University Questions		Brainstorming, Buzz Grouping	CO-3		
Unit – 4							
23.	Introduction to problem solving	Concept: problem solving, Problem solving techniques (Trail & Error, Brain Storming, Divide & Conquer)		Lecture	CO-4		
24.		Steps in problem solving (Define Problem, Analyze Problem, Explore Solution)		Lecture	CO-4		
25.	Algorithms and Flowcharts	Definitions, Symbols		Lecture, Demonstration	CO-4		
26.		Characteristics of an algorithm Conditionals in pseudo-code, Loops in pseudo code		Lecture	CO-4		
27.	Time complexity	Big-Oh notation, efficiency Simple Examples: Algorithms, flowcharts		Lecture	CO-4		
28.		Revision Unit-4		Brainstorming, Buzz Grouping, Practice Qus.	CO-4		
29.		Discuss University Questions		Brainstorming, Buzz Grouping	CO-4		
Unit – 5							
30.	Simple Arithmetic Problems	Addition / Multiplication of integers, Determining if a number is +ve / -ve / even / odd, Swapping		Lecture, Demonstration	CO-2		
31.		Maximum of 2		Lecture,	CO-3		



		numbers, 3 numbers, Sum of first n numbers,		Demonstration			
32.		given n numbers, Integer division, Digit reversing, Table generation for n, ab, Factorial, sine series, cosine series, nCr		Lecture, Demonstration	CO-3		
33.		Pascal Triangle, Prime number, Factors of a number, Other problems such as Perfect number, GCD numbers etc (Write algorithms and draw flowchart)		Lecture, Demonstration	CO-3		
34.		Revision Unit-5		Brainstorming, Buzz Grouping, Practice Qus.	CO-2, CO-3		
35.		Discuss University Questions		Brainstorming, Buzz Grouping	CO-2, CO-3		
Unit – 6							
36.	Functions	Basic types of function, Declaration and definition		Lecture	CO-5		
37.	Pointers	Introduction to Pointers		Lecture, Demonstration	CO-5		
38.		Function call, Types of function, Parameter passing, Call by value, Call by reference, Scope of variable		Lecture, Demonstration	CO-5		
39.	Recursion	Recursion		Lecture, Demonstration	CO-5		
40.	Storage classes	Storage classes		Lecture, Demonstration	CO-5		
41.		Revision Unit-6		Brainstorming, Buzz Grouping, Practice Qus.	CO-5		
42.		Discuss University Questions		Brainstorming, Buzz Grouping	CO-5		



Text Books:

1. Programming in ANSI C – by E. Balagurusamy
2. Let us C – by Yashavant P. Kanetkar
3. The C programming Lang., Pearson Ecl - Dennis Ritchie

Reference Books:

1. A First Course in Programming with C – by T Jeyapoovan
2. Programming in C – by R.S.Salaria