Lesson Plan / Teaching Plan / Lecture Plan: BCA - 1st Semester : 2025-26

Course Name (Code) : Problem Solving Techniques (BCG-103-V1) Faculty : Ms. Nikita

Topics / lectures are arranged in sequence - same - as to be taught in the class. Maintain data related to "Date" in its hard copy.

S. No.	Lecture No	Topic Description	Teaching Pedagogy	Reference Material	Remarks, if any
1	1	Introduction to PST	WB	T1	
2	2	Basics of Computational Problem (Problem, Problem Instances etc.)and its types	WB	T1	
3	3	Algorithm and Algorithm Development	WB	T1	
4	4	Analysis of Algorithm and Intro to Flowchart	WB	T1	
5	5	Procedure of Problem Solving	WB	T1	
6	6	Breaking Problem Into Subproblems (Decomposition)	WB	T1	
7	7	Class Test-1	WB	T1	
8	8	Data structure and its role in Problem Solving	WB	T1	
9	9	Basics of Programming: Structured Programming	WB	T1	
10	10	Selection (if and if else)	WB	T1	
11	11	Selection (Elseif Ladder)	WB	T1	
12	12	Selection (Switch)	WB	T1	
13	13	Selection (Nested if-else)	WB	T1	
14	14	Repition (loops- Entry conrolled and exit controlled) for loop	WB	T1	
15	15	Entry controlled-while loop	WB	T1	
16	16	Entry controlled-do while loop	WB	T1	
17	17	Sentinel Controlled Repetitions	WB	T1	
18	18	Problems on Iteration and Nesting: Patterns and Shapes	WB	T1	
19	19	Arithmetic & Geometric Progression, Fibonacci, Sequences	WB	T1	
20	20	Approximate values of π, sin(x), cos(x) using Taylor Series	WB	T1	
21	21	Data Representation: Integers (SM, 1's, 2's complement)	WB	T1	
22	22	Floating Point (IEEE 754) and Characters (ASCII, UNICODE)	WB	T1	
23	23	Basic C constructs: Operators, Data Types	WB	T1	
24	24	Problems on Numbers: Digit Extraction	WB	T1	
25	25	Palindrome, Prime Number	WB	T1	
26	26	Prime Factors	WB	T1	
27	27	Amicable Number, Perfect Number	WB	T1	
28	28	Armstrong Number, Factorial	WB	T1	
29	29	Base Conversion Problems	WB	T1	
30	30	Statistics on Sequences (Max, Min, Sum, Average)	WB	T1	
31	31	Sentinel Controlled Loops Applications	WB	T1	
32	32	Increment/Decrement Operators	WB	T1	
33	33	Break and Continue Statements	WB	T1	
34	34	Modular Programming Concepts	WB	T1	
35	35	Top-Down and Bottom-Up Approaches	WB	T1	
36	36	C Language Functions: Definition, Declaration, Prototype	WB	T1	
37	37	Recursion and Recursive Problem Solving	WB	T1	
38	38	Recursion and Recursive Problem Solving	WB	T1	
39	39	Arrays: Reading/Writing Elements	WB	T1	
40	40	Array Operations: Max, Min	WB	T1	

41	41	Array Operations: Sum, Avg	WB	T1	
42	42	Median and Mode	WB	T1	
43	43	Sequential Search	WB	T1	
44	44	Binary Search	WB	T1	
45	45	Sorting Algorithm (Bubble/Selection/Insertion)	WB	T1	
46	46	Matrix Operations: Addition, Subtraction	WB	T1	
47	47	Return Statement and Function Calls	WB	T1	
48	48	1D Arrays and String Functions	WB	T1	
49	49	2D Arrays and String Functions	WB	T1	
50	50	Operators, Precedence, Associativity, Debugging	WB	T1	
51	51	Classification of problems, Analysis of Problems	WB	T1	
52	52	Pre Condition and Post Condition	WB	T1	
53	53	Solution Approaches	WB	T1	
54	54	Revision & Class Test	WB		
55	55	Revision & Class Test	WB		

Study Material / Books / Web-resources / Online Courses Links etc.

S. No.	Description
1	Y. Kanetkar, "Let Us C", BPB Publications
2	Brian W. Kernighan and Dennis Ritchie, The C Programming Language , 2nd edition,Pearson, 2015.