



BUDDHA INSTITUTE OF MANAGEMENT

DEPARTMENT OF COMPUTER APPLICATION

ACADEMIC YEAR 2025-26 (ODD Semester)

LESSON PLAN

Semester: I	Section: A	Course Code: BMC 102	Contact Hours /week: 6
Course name: Problem Solving Using C			# of credits: 3
Teacher's name: Mr. Chhiteesh Rai			Designation: AP
Sessional Marks: 30		End Semester Examination Marks: 70	University Exam Hours: 3

Prerequisites if any:

NA

Content delivery methods:

By Face to face delivery, Presentation, Tutorial etc.

COURSE SYLLABUS (as prescribed by University / Board)

Module No	UNIT Contents	Hours	COs
1	Basics of programming: Approaches to problem solving, Use of high level programming language for systematic development of programs, Concept of algorithm and flowchart, Concept and role of structured programming. Basics of C: History of C, Salient features of C, Structure of C Program, Compiling C Program, Link and Run C Program, Character set, Tokens, Keywords, Identifiers, Constants, Variables, Instructions, Data types, Standard Input/Output, Operators and expressions.	19	C01

2	<p>Conditional Program Execution: if, if-else, and nested if-else statements, Switch statements, Restrictions on switch values, Use of break and default with switch, Comparison of switch and if-else.</p> <p>Loops and Iteration: for, while and do-while loops, Multiple loop variables, Nested loops, Assignment operators, break and continue statement.</p> <p>Functions: Introduction, Types, Declaration of a Function, Function calls, Defining functions, Function Prototypes, Passing arguments to a function Return values and their types, Writing multifunction program, Calling function by value, Recursive functions.</p>	12	C02
3	<p>Arrays: Array notation and representation, Declaring one-dimensional array, Initializing arrays, Accessing array elements, Manipulating array elements, Arrays of unknown or varying size, Two-dimensional arrays, Multidimensional arrays.</p> <p>Pointers: Introduction, Characteristics, * and & operators, Pointer type declaration and assignment, Pointer arithmetic, Call by reference, Passing pointers to functions, array of pointers, Pointers to functions, Pointer to pointer, Array of pointers.</p> <p>Strings: Introduction, Initializing strings, Accessing string elements, Array of strings, Passing strings to functions, String functions.</p>	14	C03
4	<p>Structure: Introduction, Initializing, defining and declaring structure, Accessing members, Operations on individual members, Operations on structures, Structure within structure, Array of structure, Pointers to structure.</p> <p>Union: Introduction, Declaring union, Usage of unions, Operations on union. Enumerated data types</p> <p>Storage classes: Introduction, Types- automatic, register, static and external.</p>	18	C04
5	<p>Dynamic Memory Allocation: Introduction, Library functions – malloc, calloc, realloc and free.</p> <p>File Handling: Basics, File types, File operations, File pointer, File opening modes, File handling functions, File handling through command line argument, Record I/O in files.</p> <p>Graphics: Introduction, Constant, Data types and global variables used in graphics, Library functions used in drawing, Drawing and filling images, GUI interaction within the program.</p>	12	C05

COURSE OUTCOMES: At the end of the Course, the Student will be able to:

C01	Describe the functional components and fundamental concepts of a digital computer system including number systems.
C02	Write 'C' programs that incorporate use of variables, operators and expressions along with data types
C03	Write simple programs using the basic elements like control statements, functions, arrays and strings.
C04	Write advanced programs using the concepts of pointers, structures, unions and enumerated data types.

C05	Apply pre-processor directives and basic file handling and graphics operations in advanced programming.
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Mapping of CO v/s PO:

	P01	P02	P03	P04	P05	P06	P07	P08	P09	P010	P011	P012
C01	1	1	1	1	1	1	1	-	1	1	1	1
C02	1	1	1	2	1	-	-	-	1	1	1	1
C03	2	2	1	2	1	-	-	-	-	-	1	1
C04	2	1	1	1	1	1	-	-	-	-	1	1
C05	1	1	1	2	1	-	-	-	1	1	1	1
Average	1.4	1.2	1.0	1.6	1.0	0.4	0.2	-	0.6	0.6	1.2	1.4

	PS01	PS02	PS03
C01	2	1	1
C02	2	1	1
C03	2	1	1
C04	2	1	1
C05	2	1	1
Average	2	1	1

Correlation levels: 1-Slight (Low) 2-Moderate (Medium) 3-Substantial (High)

Gap in the syllabus	Topics related to array with function.
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Topics to be covered beyond syllabus

Bridge topics which are helpful to explain concept of array passing to function.

LESSON PLAN

Lecture	Module	Scheduled				Conducted			
		Topic	*RBT Levels	C O Mapping	Date	Topic	Date	No. Of Students	Faculty Sign
1	I	Introduction	L2	CO1					
2		Approaches to problem solving,	L2						
3		Concept of algorithm	L2						
4		Concept of algorithm	L2						
5		flowchart	L2						
6		Concept and role of structured programming.	L2						
7		History of C, Salient features of C	L2						
8		Structure of C Program, Compiling C Program	L2						

9		Tutorial-1						
10		Link and Run C Program, Character set,	L2					
11		Tokens, Keywords, Identifiers, Constants,	L2					
12		Variables, Instructions,	L2					
13		Data types, Standard Input/Output	L3					
14		Operators	L2					
15		Operators	L2					
16		expression	L2					
17		Tutorial-2	L2					
18		Conditional Program Execution: if, if-else	L3					
19		nested if-else statements,	L3					
20		Switch statements, Restrictions on switch values,	L3					
21		Use of break and default with switch, Comparison of switch and if-else.	L2					
22	II	Tutorial-3	L3	CO2				
23		Loops and Iteration: for, while						
24		do-while loops,	L2					
25		Multiple loop variables	L3					

26		Nested loops, Assignment operators, break and continue statement.	L3					
27		Functions: Introduction, Types, Declaration of a Function, Function calls,	L3					
28		Defining functions, Function Prototypes,	L3					
29		Passing arguments to a function Return values and their types						
30		Recursive functions.						
31		Tutorial-4						
32	III	Arrays: Array notation and representation, Declaring one-dimensional array, Initializing arrays,	L2	C03				
33		Accessing array elements, Manipulating array elements,	L2					
34		Arrays of unknown or varying size, Two-dimensional arrays	L2					
35		Multidimensional arrays	L2					
36		Pointers: Introduction, Characteristics, * and & operators,						
37		Pointer type declaration and assignment, Pointer arithmetic,	L2					
38		Tutorial-5	L2					
39		Call by reference, Passing pointers to functions	L3					
40		array of pointers, Pointers to functions,	L3					
41		Pointer to pointer, Array of pointers.	L3					
42		Strings: Introduction, Initializing strings, Accessing string elements,						

43		Array of strings, Passing strings to functions,	L3					
44		String functions.						
45		Tutorial-6	L3					
46	IV	Structure: Introduction, Initializing, defining and declaring structure, Accessing members,	L2	C04				
47		Operations on individual members, Operations on structures,	L2					
48		Structure within structure,	L3					
49		Array of structure	L3					
50		Pointers to structure.	L2					
51		Tutorial-7	L3					
52		Union: Introduction, Declaring union,	L3					
53		Usage of unions, Operations on union.	L3					
54		Enumerated data types	L3					
55		Storage classes: Introduction, Types- automatic, register,	L3					
56		static and external.	L3					
57	Tutorial-8							
58		Dynamic Memory Allocation: Introduction, Library functions	L3					
59	V	malloc, calloc	L2	C05				
60		realloc and free	L2					

61	File Handling: Basics, File types, File operations	L2					
62	File pointer, File opening modes,	L3					
63	File handling functions, File handling through command line argument	L2					
64	Record I/O in files.	L3					
65	Tutorial-9	L2					
66	Graphics: Introduction, Constant, Data types and global variables used in graphics,	L2					
67	Library functions used in drawing,	L3					
68	Drawing and filling images	L3					
69	Drawing and filling images						
70	GUI interaction within the program.						
71	Tutorial-10	L3					

Class Test	Syllabus
CT-01	0-25
CT-02	26-50
PRE-AKTU	51-71

***Revised Bloom's Taxonomy (RBT) Levels:**

L1 – Remembering; L2 – Understanding; L3 – Applying; L4 – Analysing; L5 – Evaluating; L6 - Creating

References:

Text books :(As per University / Board syllabus)

T1. Kanetkar Y., "Let Us C", BPB Publications.

T2. Dey P. and Ghosh M., "Computer Fundamentals and Programming in C", Oxford University Press.

Reference Books:(As per University / Board syllabus)

R1. Schildt H., "C- The Complete Reference", Tata McGraw-Hill..

R2 Goyal K. K., Sharma M. K. and Thapliyal M. P. "Concept of Computer and C Programming", University Science Press.

Faculty Sign

HOD's sign