SANATAN DHARMA COLLEGE, AMBALA CANTT
College with Potential for Excellence, UGC,New Delhi
NAAC Accredited Grade "A+" with CGPA 3.51 in 3rd cycle
ISO 9001:2015 & ISO 14001:2015 Certified

Department of Computer Science
Lesson Plan (Session 2022-2023)

Class: BVOC(SD)Sem: I Course Code: BVSD-14 Nomenclature: Programming Fundamentals and C

Duration: 16 Weeks   **Date : September-December 2022**

SYLLABUS
BVSD -14 Programming Fundamentals and C

Maximum Marks: 100	External: 80	Minimum Pass Marks: 40
	Internal: 20	Time: 3 hours

Note: Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of objective type/short-answer type questions covering the entire syllabus. In addition to that, eight more questions will be set, two questions from each Unit. Student will be required to attempt FIVE questions in all. Question Number 1 will be compulsory. In addition to compulsory question, student will have to attempt four more questions selecting one question from each Unit.

UNIT-I
Algorithm, Flowchart, Types of Flowcharts, Rules for drawing Flowcharts, Pseudo Codes. Decision Tables, Characteristics of Good Algorithm, Documentation, Debugging.
Computer Languages, Analogy with Natural Languages, History of Programming Languages, Machine Language, Assembly Language, High Level Language, Programming Language, Translator, Compiler and Interpreter.

Unit II
Overview of C: History & Importance of C, Structure of a C Program.
Elements of C: C Character Set, Identifiers and Keywords, Data Types, Constants and Variables, Assignment Statement, Symbolic Constant.
Operators & Expression: Arithmetic Operator, Relational Operator, Logical Operator, Bitwise Operator, Unary Operator, Assignment Operator, Conditional operators and special operators. Arithmetic expressions, Evaluation of Arithmetic Expression, Type Casting and Conversion, Operator Hierarchy & Associativity.
Decision Making & Branching: Decision Making with IF Statement, IF-ELSE Statement, Nested IF Statement, ELSE-IF Ladder, Switch Statement, go to Statement.
Decision Making & Looping: for, while, and do-while loop, Jumps in loops, break, continue Statement.

Unit III
Functions: Definition, Prototype, Passing Parameters, Recursion. Arrays: Definition, Initialization, Processing an Array. Storage Classes in C: Auto, Extern, Register and Static Storage Class, Their Scope, Storage & Lifetime.

Unit IV
Pointers: Introduction, Pointer Variables, Pointer Operators, Pointer Assignment, Pointer Conversion, Pointer Arithmetic, Pointer Comparison, Pointers and Arrays, Pointers and Functions. Structure and Union.

TEXT BOOKS:
- Sinha P.K., Computer Fundamentals, BPB Publication, 2004
- Balagurusamy E., Programming in C, TMH Publication

REFERENCE BOOKS:
- Tucker Allen, Programming Languages – Principles & Paradigms, TMH, 2002
- Kanetker Yashavant, Let Us C, BPB, 2010

Course Outcomes

After the completion of this course, prospective Computer professionals will have the ability to

Course Title	Programming Fundamentals and C
CO No.	**Course Outcomes**
CO-1	**Know the correct and efficient ways of solvingproblems.**
CO-2	**Write C program for simple applications**
CO-3	**Formulate algorithm for simple problems**
CO-4	**Analyze different data types and arrays**
CO-5	**Perform simple search and sort**
CO-6	**Understand memory management and write programs using structures for solvingcomplex computational problem**
CO-7	**Create files and perform file operations using C**
CO-8	**Apply the programming language concepts to solvereal time problems**

S.No	Instructional Technique	Assessment Methods (AM)
1	Chalk & Talk	**Assignments**
2	ICT tools	**Quiz**
3	Group discussions	**Group Discussions**
4	Industrial visit	**Oral Tests**
5	Case studies	**Sessional**
6	Small Projects	**Presentations**
7	Workshop	**Seminar**
8	Spoken Tutorials	**University Exams**
9	Flipped Class	
10.	**E-Resources**	

Detailed Lesson Plan

Week	Date	Topic to be Covered	Instructional Technique	Assessment Method
1	05-09-2022	Explain Course Outcomes	1-(PPT/Projector)	1
	06-09-2022	Algorithm , Characteristics of Good Algorithm	2-(PPT/Projector)	1,2,4
	07-09-2022	Flowchart, Types of Flowcharts	2-(PPT/Projector)	1,2,3
2	12-09-2022	Rules for drawing Flowcharts	2-(PPT/Projector)	1,2,3
	13-09-2022	Pseudo Codes , Decision Tables	2-(PPT/Projector	1,2,4
	14-09-2022	Documentation, Debugging	2-(PPT/Projector)	1,2,3
3	19-09-2022	Computer Languages, Analogy with Natural Languages	2-(PPT/Projector)	1,2,3
	20-09-2022	History of Programming Languages, Machine Language, Assembly Language, High Level Language	2-(PPT/Projector)	1,2,3
	21-09-2022	Translator, Compiler and Interpreter	2-(PPT/Projector)	1,2,4
4	26-09-2022	**HOLIDAY**	------------------	------------------
	27-09-2022	Overview of C: History & Importance of C	2-(PPT/Projector)	1,2,3,4
	28-09-2022	Structure of a C Program	2-(PPT/Projector)	1,2,3,4
5	03-10-2022	Elements of C: C Character Set, Identifiers and Keywords	2-(PPT/Projector)	1,2,3
	04-10-2022	Data Types, Constants and Variables	2-(PPT/Projector)	1,2,3,4
	05-10-2022	Operators and Types of Operators	2-(PPT/Projector)	1,2,3,4
6	10-10-2022	Evaluation of Arithmetic Expression, Type Casting and Conversion, Operator Hierarchy & Associativity	1- Chalk & Talk	1,2,3
	11-10-2022	Decision Making & Branching: Decision Making with IF Statement, IF-ELSE Statement,	1, 2-(PPT/Projector)	1,2,3,4
	12-10-2022	Nested IF Statement	1, 2-(PPT/Projector)	1,2,3,4
7	17-10-2022	**Assignment 1**	------------------	1
	18-10-2022	ELSE-IF Ladder	2-(PPT/Projector)	1,2,3,4
	19-10-2022	Switch Statement, go to Statement	2-(PPT/Projector)	1,2,3,4

Week	Date	Topic to be Covered	Instructional Technique	Assessment Method
8	24-10-2022	**DIWALI BREAK**	------------------	------------------
	25-10-2022			
	26-10-2022			
9	31-10-2022	**Sessional**	----------------------	5
	01-11-2022	For loop	1,2-(PPT/Projector)	1,2,3,4
	02-11-2022	while loop	1,2-(PPT/Projector)	1,2,3,4
10	07-11-2022	do-while loop	1,2-(PPT/Projector)	1,2,3,4
	08-11-2022	break Statement	1,2-(PPT/Projector)	1,2,3,4
	09-11-2022	continue Statement	1,2-(PPT/Projector)	1,2,3,4
11	14-11-2022	Functions: Definition, Prototype	1,2-(PPT/Projector)	1,2,3,4
	15-11-2022	Functions: Passing Parameters	1,2-(PPT/Projector)	1,2,3,4
	16-11-2022	Recursion	1,2-(PPT/Projector)	1,2,3,4
12	21-11-2022	Arrays: Definition, Initialization,	1,2-(PPT/Projector)	1,2,3,4
	22-11-2022	Processing an Array.	1,2-(PPT/Projector)	1,2,3,4
	23-11-2022	Multidimensional Array	1,2-(PPT/Projector)	1,2,3,4
13	28-11-2022	Storage Classes in C: Auto,	1,2-(PPT/Projector)	
	29-11-2022	Register and Static Storage Class, Scope, Storage & Lifetime	1,2-(PPT/Projector	1,2,3,4
	30-11-2022	Extern Storage Class, Scope, Storage & Lifetime	1,2-(PPT/Projector	1,2,3,4
14	05-12-2022	**Assignment 2**	6	--------------------
	06-12-2022	Pointers: Introduction, Pointer Variables,	2-(PPT/Projector	1,2,3,4
	07-12-2022	Pointer Operators, Pointer Assignment, Pointer Conversion	2-(PPT/Projector	1,2,3,4
15	12-12-2022	Pointer Arithmetic, Pointer Comparison	2-(PPT/Projector	1,2,3,4
	13-12-2022	Pointers and Arrays	2-(PPT/Projector	1,2,3,4
	14-12-2022	Pointers and Functions	2-(PPT/Projector	1,2,3,4
16	19-12-2022	Structures in C	2-(PPT/Projector	1,2,3,4
	20-12-2022	Structures and Functions	2-(PPT/Projector	1,2,3,4
	21-12-2022	Union and Structure	2-(PPT/Projector	1,2,3,4

	Teacher Incharge	Head of the Department
Name	Dr. Poonam Rani	Dr. Girdhar Gopal
Sign with Date		