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: BCA   Sem: I   Sec-A & B Course Code: BCA-111
Nomenclature: Computer and Programming Fundamentals
Duration: 16 Weeks   Dates: 1 Sep, 2022- 24 Dec, 2022

SYLLABUS

Maximum Marks: 100   Minimum Pass Marks: 35   Time: 3 hours
External: 80   Internal: 20

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

Computer Fundamentals: Definition, Block Diagram along with its components, characteristics & classification of computers, Applications of computers in various fields. Memory: Concept of primary & secondary memory, RAM, ROM, types of ROM, flash memory, Secondary storage devices: Sequential & direct access devices viz. magnetic tape, magnetic disk, CD, DVD.

UNIT-II

Computer hardware & software: I/O devices, relationship between hardware and software, types of software, Operating system: Definition, functions of operating system, concept of multiprogramming, multitasking, multithreading, multiprocessing, time-sharing, real time, single-user & multi-user operating system.

UNIT-III

Planning the Computer Program: Concept of problem solving, Problem definition, Program design, Debugging, Types of errors in programming, Documentation, Techniques of Problem Solving: Flowcharting, algorithms, pseudo code, decision table, Structured programming concepts, Programming methodologies viz. top-down and bottom-up programming.

Computer Virus, WORMS, Trojan,

UNIT-IV

Searching, Sorting, and Merging: Linear & Binary Searching, Bubble, Selection, and Insertion Sorting, Merging, Design of algorithms for searching, sorting and merging. Computer Languages: Analogy with natural language, machine language, assembly language, high-level language, language translators, characteristics of a good programming language.

TEXT BOOKS

1. Sinha, P.K. & Sinha, Priti, Computer Fundamentals, BPB
2. Dromey, R.G., How to Solve it By Computer, PHI

REFERENCE BOOKS

1. Balagurusamy E, Computing Fundamentals and C Programming, Tata McGraw Hill.
2. Norton, Peter, Introduction to Computer, McGraw-Hill

3. Leon, Alexis & Leon, Mathews, Introduction to Computers, Leon Tech World
4. Rajaraman, V., Fundamentals of Computers, PHI

Course Outcomes

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

CO-1	Understand the basic fundamentals of Computer System
CO-2	Classify different types of computer memories
CO-3	Establish relationship between hardware and software
CO-4	Classify different types of software
CO-5	Explain operating system, its functions, types and working
CO-6	Solve various problems using problem solving techniques like Flowcharting, Algorithms, pseudo code, decision table, Structured programming concepts.
CO-7	Differentiate top-down and bottom-up programming methodologies.
CO-8	Understand various types of Computer virus.
CO-9	Explain various types of computer languages.
CO-10	Differentiate and implement linear and binary search
CO-11	Differentiate various sorting techniques
CO-12	Implement Bubble, Selection, and Insertion Sorting
CO-13	Explain Merging

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**	

Week	Date	Section-A	Section-B	Instructional Technique	Assessment Method
I	01-09-2022		Computer Fundamentals: Definition,	2-(PPT/Projector)	----
	02-09-2022		Block Diagram along with its components,	2(PPT/Projector)	1
	03-09-2022		characteristics & classification of computers	1	1
II	05-09-2022	Computer Fundamentals: Definition,		1	1,2,3,4
	06-09-2022	Block Diagram along with its components,		2-(PPT/Projector)	1,2,3,4
	07-09-2022	characteristics & classification of computers		2-(PPT/Projector)	1,2,3,4
	08-09-2022		Applications of computers in various fields.	2-(PPT/Projector)	1,2,3,4
	09-09-2022		Memory: Concept of primary & secondary memory, RAM,	1	1,2,3,4
	10-09-2022		ROM, types of ROM, flash memory,	2-(PPT/Projector)	1,2,3,4
	12-09-2022	Applications of computers in various fields.		1	---
	13-09-2022	Memory: Concept of primary & secondary		2-(PPT/Projector)	1,2,3,4

III		memory, RAM,			
	14-09-2022	ROM, types of ROM, flash memory,		2-(PPT/Projector)	1,2,3,4
	15-09-2022		Secondary storage devices: Sequential & direct access devices viz. magnetic tape, magnetic disk,.	9	1,2,3,4
	16-09-2022		CD, DVD	2-(PPT/Projector)	1,2,3,4
	17-09-2022		Computer hardware & software: relationship between hardware and software	2-(PPT/Projector)	1,2,3,4
IV	19-09-2022	Secondary storage devices: Sequential & direct access devices viz. magnetic tape, magnetic disk,.		---	6
	20-09-2022	CD, DVD		9	1,2,3,4,6
	21-09-2022	Computer hardware & software: relationship between hardware and software		8,10,2	1,2,3,4,
	22-09-2022		Types of software, Operating system: Definition,	8,10,2	1,2,3,4,
	23-09-2022	**HOLIDAY**			

	24-09-2022		Functions of operating system, single-user & multi-user operating system	6	1,2,3,4
V	26-09-2022	**HOLIDAY**			--
	27-09-2022	Types of software, Operating system: Definition,		2-(PPT/Projector)	1,2,3,4
	28-09-2022	Functions of operating system, single-user & multi-user operating system		2-(PPT/Projector)	1,2,3,4
	29-09-2022		Multiprogramming, Multitasking, Multithreading	2-(PPT/Projector)	1,2,3,4
	30-09-2022		Multiprocessing, time-sharing, real time,	2-(PPT/Projector)	1,2,3,4
	01-10-2022		Problem Solving: Flowcharting	2-(PPT/Projector)	1,2,3,4
VI	03-10-2022	Multiprogramming, Multitasking, Multithreading		2-(PPT/Projector)	1,2,3,4
	04-10-2022	Multiprocessing, time-sharing, real time,		2-(PPT/Projector)	1,2,3,4
	05-10-2022	**HOLIDAY**			
	06-10-2022		Algorithms	6	1,2,3,4
	07-10-2022		Pseudo code,	--	5

	Date				
	08-10-2022		Computer Languages: Analogy with natural language	2-(PPT/Projector)	1,2,3,4
VII	10-10-2022	Problem Solving: Flowcharting, Algorithms		2-(PPT/Projector)	1,2,3,4
	11-10-2022	Pseudo code,		6	1,2,3,4
	12-10-2022	Computer Languages: Analogy with natural language		2-(PPT/Projector)	1,2,3,4
	13-10-2022		Machine language, Assembly language	6	1,2,3,4
	14-10-2022		High-level language, language translators	2-(PPT/Projector)	1,2,3,4
	15-10-2022		Characteristics of a good programming language	9,10	1,2,3,4
VIII	17-10-2022	Machine language, Assembly language		9,10	1,2,3,4
	18-10-2022	High-level language, language translators		2-(PPT/Projector)	1,2,3,4
	19-10-2022	Characteristics of a good programming language		2-(PPT/Projector)	1,2,3,4
	20-10-2022		Assignment	6	1,2,3,4
	21-10-2022		Searching, Sorting, and Merging: Linear search	6	1,2,3,4
	22-10-2022		Binary Searching	2-(PPT/Projector)	1,2,3,4

	Date				
IX	24-10-2022	**DIWALI BREAK**			
	25-10-2022				
	26-10-2022				
	27-10-2022	Assignment		**2-(PPT/Projector)**	**1,2,3,4**
	28-10-2022	Searching, Sorting, and Merging: Linear search		**2-(PPT/Projector)**	**1,2,3,4**
	29-10-2022	Binary Searching		**6**	**1,2,3,4**
X	31-10-2022		Bubble sort	**2-(PPT/Projector)**	**1,2,3,4**
	01-11-2022	**HOLIDAY**			
	02-11-2022		Selection sort	**2-(PPT/Projector)**	**1,2,3,4**
	03-11-2022	Bubble sort		**9,10**	**1,2,3,4**
	04-11-2022	Selection sort		**9,10**	**1,2,3,4**
	05-11-2022	Insertion Sorting		**2-(PPT/Projector)**	**1,2,3,4**
XI	07-11-2022		Insertion Sorting	**2-(PPT/Projector)**	**1,2,3,4**
	08-11-2022	**HOLIDAY**			
	09-11-2022		Merging, Decision Table	**6**	**1,2,3,4**
	10-11-2022	Merging, Decision Table		**2-(PPT/Projector)**	**1,2,3,4**
	11-11-	Structured programming		**6**	**1,2,3,4**

	2022	concepts, Programming methodologies viz. top-down and bottom-up programming			
	12-11-2022	Computer Virus, WORMS, Trojan		**2-(PPT/Projector)**	1,2,3,4
XII	14-11-2022		Structured programming concepts, Programming methodologies viz. top-down and bottom-up programming	**9,10**	1,2,3,4
	15-11-2022		Computer Virus, WORMS, Trojan	**9,10**	1,2,3,4
	16-11-2022		Planning the Computer Program: Concept of problem solving	**2-(PPT/Projector)**	1,2,3,4
	17-11-2022	Planning the Computer Program: Concept of problem solving		**2-(PPT/Projector)**	1,2,3,4
	18-11-2022	Problem definition, Program Design		**2-(PPT/Projector)**	1,2,3,4
	19-11-2022	Debugging		**9,10**	1,2,3,4
XIII	21-11-2022		Problem definition, Program Design	**9,10**	1,2,3,4
	22-11-2022		Debugging	**2-(PPT/Projector)**	1,2,3,4
	23-11-2022		Sessional	**2-(PPT/Projector)**	1,2,3,4
	24-11-	**Sessional**			

	2022				
	25-11-2022	Types of errors in programming		**9,10**	**1,2,3,4**
	26-11-2022	Documentation		**9,10**	**1,2,3,4**
XIV	**28-11-2022**		Types of errors in programming	**2-(PPT/Projector)**	**1,2,3,4**
	29-11-2022		Documentation	**2-(PPT/Projector)**	**1,2,3,4**
	30-11-2022		**Sessional**	**2-(PPT/Projector)**	**1,2,3,4**
	01-12-2022	I/O devices		**9,10**	**1,2,3,4**
	02-12-2022	I/O devices		**9,10**	**1,2,3,4**
	03-12-2022	I/O devices		**2-(PPT/Projector)**	**1,2,3,4**
XV	**05-12-2022**		I/O devices	**2-(PPT/Projector)**	**1,2,3,4**
	06-12-2022		I/O devices	**2-(PPT/Projector)**	**1,2,3,4**
	07-12-2022		I/O devices	**9,10**	**1,2,3,4**
	08-12-2022	Revision			
	09-12-2022	Revision			
	10-12-2022	Revision			
	12-12-2022		Revision		
	13-12-2022		Revision		

	14-12-2022		Revision		
XVI	15-12-2022	Question paper discussion			
	16-12-2022	Question paper discussion			
	17-12-2022	Question paper discussion			
XVII	19-12-2022		Question paper discussion		
	20-12-2022		Question paper discussion		
	21-12-2022		Question paper discussion		

	Teacher Incharge	Head of the Department
Name	Arti Sachdeva	Dr. Girdhar Gopal
Sign with Date		