

**LESSON PLAN SESSION (2022-23)**  
**EXTENSION LECTURER –INDER JEET**  
**CLASS – BCA(1st, 3<sup>rd</sup>, 5<sup>th</sup> SEM)**

**SUBJECT: LOGICAL ORGANIZATION OF COMPUTER-I (1st SEM)**

Month	Syllabus to be covered
01 Sept to 03 Sept	<b>Unit-I: :</b> Information Representation: Number Systems (binary, octal, hexadecimal)
05 Sept to 10 Sept	Binary Arithmetic-Addition, Subtraction, Multiplication, division
12 Sept to 17 Sept	Fixed-point and Floating point representation of numbers, BCD Codes
19 Sept to 24 Sept	Error detecting and correcting codes (hamming code)
26 Sept to 01 Oct	Character Representation – ASCII, EBCDIC, Unicode. Numerical Practice,
03 Oct to 08 Oct	<b>Unit 2:</b> Binary Logic: Boolean Algebra, Boolean Theorems,
10 Oct to 15 Oct	Boolean Functions and Truth Tables,
17 Oct to 21 Oct	Canonical and Standard forms of Boolean functions, Simplification of Boolean Functions – Venn Diagram, Karnaugh Maps.
27 Oct to 29 Oct	<b>Unit-3:</b> Digital Logic: Introduction to digital signals, Basic Gates – AND, OR, NOT,
31 Oct to 5 Nov	Universal Gates and their implementation – NAND, NOR, Other Gates – XOR, XNOR etc. NAND, NOR, AND-OR-INVERT and OR-AND-INVERT implementations of digital circuits
7 Nov to 12 Nov	Combinational Logic – Characteristics, Design Procedures, analysis procedures, Multilevel NAND and NOR circuits.
14 Nov to 19 Nov	<b>Unit-4:</b> Combinational Circuits: Half-Adder, Full-Adder, Half-Subtractor, Full-Subtractor, Parallel binary adder/subtractor Encoders, Decoders, Multiplexers, Demultiplexers,
21 Nov to 26 Nov	
28 Nov to 3 Dec	Comparators, Code Converters, BCD to Seven-Segment Decoder
5 Dec to Exams	<b>Practice Numericals &amp; Revision</b>

**Subject: COMPUTER & PROGRAMMING FUNDAMENTALS (1st sem)**

<b>Month</b>	<b>Syllabus to be covered</b>
<b>01 Sept to 03 Sept</b>	<b>Unit-III:</b> Computer Languages: Analogy with natural language, machine language, assembly language, high-level languages, forth generation languages,
<b>05 Sept to 10 Sept</b>	assembly language, high-level languages, forth generation languages,
<b>12 Sept to 17 Sept</b>	compiler, interpreter, assembler, Linker, Loader ,
<b>19 Sept to 24 Sept</b>	characteristics of a good programming language
<b>26 Sept to 01 Oct</b>	Planning the Computer Program: Concept of problem solving,
<b>03 Oct to 08 Oct</b>	Problem definition, Program design, Debugging,
<b>10 Oct to 15 Oct</b>	Types of errors in programming, Documentation.
<b>17 Oct to 21 Oct</b>	Structured programming concepts,
<b>27 Oct to 29 Oct</b>	Programming methodologies viz. top-down and bottomup programming,
	Advantages and disadvantages of Structured programming.
<b>31 Oct to 5 Nov</b>	<b>UNIT – IV:</b> Overview of Networking: An introduction to computer networking,
<b>7 Nov to 12 Nov</b>	Network types (LAN, WAN, MAN), Network topologies, Modes of data transmission,
<b>14 Nov to 19 Nov</b>	Forms of data transmission, Transmission channels(media), Introduction to internet and its uses,
<b>21 Nov to 26 Nov</b>	Applications of internet, Hardware and Software requirements for internet, Intranet,
<b>28 Nov to 3 Dec</b>	Applications of intranet
<b>5 Dec to Exams</b>	<b>Practice Numericals &amp; Revision</b>

**Subject: Data Structure - I (3<sup>rd</sup> sem)**

Month	Syllabus to be covered
<b>01 Sept to 03 Sept</b>	<b>Unit-I:</b> Introduction: Elementary data organization, Data Structure definition, Data type vs. data structure, Categories of data structures, Data structure operations,
<b>05 Sept to 10 Sept</b>	Applications of data structures, Algorithms complexity and time-space tradeoff, Big-O notation
<b>12 Sept to 17 Sept</b>	Strings: Introduction, Storing strings, String operations, Pattern matching algorithms.
<b>19 Sept to 24 Sept</b>	<b>UNIT II:</b> Arrays: Introduction, Linear arrays, Representation of linear array in memory, address calculations, Traversal, Insertions, Deletion in an array, Multidimensional arrays,
<b>26 Sept to 01 Oct</b>	Parallel arrays, Sparse arrays. Linked List: Introduction, Array vs. linked list, Representation of linked lists in memory, Traversal, Insertion, Deletion,
<b>03 Oct to 08 Oct</b>	Searching in a linked list, Header linked list,
<b>10 Oct to 15 Oct</b>	Circular linked list, Two-way linked list, Threaded lists,
<b>17 Oct to 21 Oct</b>	Garbage collection, Applications of linked lists.
<b>27 Oct to 29 Oct</b>	<b>UNIT – III</b> Stack: Introduction, Array and linked representation of stacks, Operations on stacks, Applications of stacks: Polish notation, Recursion
<b>31 Oct to 5 Nov</b>	Queues: Introduction, Array and linked representation of queues,
<b>7 Nov to 12 Nov</b>	Operations on queues, Deques, Priority Queues, Applications of queues;
<b>14 Nov to 19 Nov</b>	<b>UNIT – IV:</b> Tree: Introduction, Definition, Representing Binary tree in memory,
<b>21 Nov to 26 Nov</b>	Traversing binary trees, Traversal algorithms using stacks.
<b>28 Nov to 3 Dec</b>	Graph: Introduction, Graph theory terminology, Sequential and linked representation of graphs.
<b>5 Dec to Exams</b>	<b>Practice Numericals &amp; Revision</b>

**Subject: Data Communication & Networking ( 5<sup>th</sup> sem)**

<b>01 Sept to 03 Sept</b>	<b>UNIT – I</b> Introduction to Computer Communications and Networking Technologies; Uses of Computer Networks; Network Devices, Nodes, and Hosts;
<b>05 Sept to 10 Sept</b>	Types of Computer Networks and their Topologies;
<b>12 Sept to 17 Sept</b>	Network Software: Network Design issues and Protocols; Connection-Oriented and Connectionless Services
<b>19 Sept to 24 Sept</b>	Network Applications and Application Protocols; Computer Communications and Networking Models
<b>26 Sept to 01 Oct</b>	Decentralized and Centralized Systems, Distributed Systems, Client/Server Model,
<b>03 Oct to 08 Oct</b>	Peer-to-Peer Model, WebBased Model, Network Architecture and the OSI Reference Model,
<b>10 Oct to 15 Oct</b>	TCP/IP reference model, Example Networks: The Internet, X.25, Frame Relay, ATM.
<b>17 Oct to 21 Oct</b>	<b>UNIT – II</b> Analog and Digital Communications Concepts: Concept of data, signal, channel, bid-rate ,
<b>27 Oct to 29 Oct</b>	maximum data-rate of channel, Representing Data as Analog Signals,
<b>31 Oct to 5 Nov</b>	Representing Data as Digital Signals, Data Rate and Bandwidth, Capacity, Baud Rate
<b>7 Nov to 12 Nov</b>	Asynchronous and synchronous transmission,
<b>14 Nov to 19 Nov</b>	data encoding techniques, Modulation techniques ; Digital Carrier Systems;
<b>21 Nov to 26 Nov</b>	Guided and Wireless Transmission Media
<b>28 Nov to 3 Dec</b>	Communication Satellites; Switching and Multiplexing; Dialup Networking

<b>5 Dec to Exams</b>	<b>Practice Numericals &amp; Revision</b>
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