Lesson Plan February 2023-May 2023

Name of the Assistant Professor- Ritu Narwal **Subject**- Computer Science

Month	BCA (1st Sem) BCA-112, Logical Organization of Computers – II	BA 6th Sem , Computer Science Paper-II, Computer Networks.	BA 6th Sem, Computer Science Paper-I, Relational Data Base Management System
February	Sequential Logic: Characteristics, Flip-Flops, Clocked RS, D type, JK, T type and Master-Slave flip-flops. State table, state diagram. Flip-flop excitation tables	Introduction to Data Communication and Computer Networks; Uses of Computer Networks; Types of Computer Networks and their Topologies; Network Hardware Components: Co11nectors, Transceivers, Repeaters, Hubs, Network Interface Cards and PC Cards, Bridges, Switches, Routers, Gateways; Network Software: Network Design issues and Protocols; Co11nection-Orieted and Connectionless Services; OSI Reference Model; TCP/IP Model;	Relation al Model Concepts, Codd's Ru les for Relation al Model, Hierarchical Oma l\1odel-introduction, Features, Components, Example, Network Data Model-Introduction, Features, Components, Example, Differences between Hierarchical Data Model and Network Data Model Comparison of Relational Data Model with Hierarchical Data Model and Network Data Model Relation al Algebra:-Selection and Projection, Set Operation, Join an d Division.
March	Sequential Circuits: Designing registers – Serial Input Serial Output (SISO), Serial Input Parallel Output (SIPO), Parallel Input Serial Output (PISO), Parallel Input Parallel Output (PIPO) and shift registers. Designing counters – Asynchronous and Synchronous Binary Counters, Modulo-N Counters and Up-Down Counters	Analog and Digital Communications Concepts: Analog and Digital data and signals; Bandwidth and Data Rate, Capacity, Baud Rate; Guided and Wireless Transmission Media; Communication Satellites; Switching and Multiplexing; Modems an d Modulation techniques, Data Link Layer Design issues; Error Detection and Correction methods; Sliding Window Protocols: One-bit, Go Back N and Selective Repeat.	Relational Calculus: Tuple Relational Calculus and Domain Relational Calculus. Functional Dependencies and Normalization·- Purpose, Data Redundancy, Update Anomalies., Partial/Fully Function al Dependencies, Transitive Function al Dependencies, Characteristics of Functional Dependencies, Decomposition and Normal Forms (1NF,2NF,3NF & BCNF), SQL: Data Definition and data types, Create Table, Insert Datta, Viewing Data, Filtering Table Data,

April	Memory & I/O Devices: Memory Parameters, Semiconductor RAM, ROM, Magnetic and Optical Storage devices, Flash memory, I/O Devices and their controllers, Instruction Design & I/O Organization: Machine instruction, Instruction set selection, Instruction cycle.	Media Access Control : ALOHA, Slotted ALOHA, CSMA, Collision free protocols; Introduction to LAN technologies: Ethernet, Switched Ethernet, Fast Ethernet, Gigabit Ethernet; Token Ring; Introduction to Wireless LANs and Bluetooth, Routing Algorithms : Flooding, Shortest Path Routing, Distance Vector Routing: Link State Routing, Hierarchical Routing;	Sorting data, Creating Table from a Table, Destroy table, Update, View, Delete, Join , Concatenating data from Table Specifying Constraints in SQL; Primary Key, Foreign Key, Unique Key, Check Constraint, Using Functions, PL/SQL·L-Introduction, Advantages of PL/SQL The Generic PL/SQL Block: PL/SQL Execution
May	Instruction Format and Addressing Modes. I/O Interface, Interrupt structure, Program-controlled, Interrupt-controlled & DMA transfer, I/O Channels, IOP.	Congestion Control; Traffic shaping; Choke packets; Load shedding; Application Layer: introduction to DNS, E-Mail and WWW services; Network Security issues: Security attacks ; Encryption methods; Firewalls; Digital Signatures;	Environment; PL/SQL Character Set and Data Type., Declaration and Assignment of Variables Control Structure in PL/ SQL: Conditional Control, Iterative Control, Sequential Control

Subject/Month	**February**	**March**	**April**	**May**
B.Com CAV 4th Sem, BC (VOC)-406 Advanced Computer Applications	Networking: fundamentals, LAN/MAN/WAN, topologies, transmission media, ISDN, B-ISDN, protocols- TCP/IP, OSI, ATM, internet services; hardware and software requirements for internet; browsers- internet explorer, mozilla firefox, opera, google chrome; search engines; webpage.	Information technology application in business, E-business, net banking; online purchasing and selling; online banking, electronic payment systems- an overview, E-governance-concept and examples.	digitalization of services – income tax, digital lockers, etc. E-disha, etc., linking AADHAR to service – issues and impact, Social and ethical aspects of IT.	Cyber Laws – IT Act 2000, impact of IT on other laws concerning business; cyber security – threats, anti-virus software, firewalls, etc.