

Office of the Principal CMG, G.C.W Bhodia Khera (Fatehabad)

Lesson Plan

Session: - 2025-26 (1st Sem)

Class:- BCA/SM/1/DSC/102 (DBMS)

Month of July/August:-

Basic concepts: A historical perspective, file system vs. DBMS, characteristics of the database approach, abstraction and data integration, database users, advantages and disadvantages of DBMS, implication of database approach.

Month of September:-

Database system concepts and architecture: Data models, schemas and instances, DBMS architecture and data independence database languages & interfaces, DBMS functions and component modules. Entity-relationship model: Entity types, entity sets, attributes & keys, relationships, relationship types, E-R diagrams, design of an E-R database schema.

Month of October:-

Conventional data models: An overview of network and hierarchical data models. Relational data model: Relational model concepts, integrity constraints over relations, relational algebra - basic operations.

Month of November:-

Relational database design: Functional dependencies, decomposition, desirable properties of decomposition, Normalization, normal forms based on primary keys (1 NF, 2 NF, 3 NF and BCNF).

Teacher Name:- Ms. Sona Devi

Deptt.:- Computer Science

Office of the Principal CMG, G.C.W Bhodia Khera (Fatehabad)

Lesson Plan

Session: - 2025-26 (1st Sem)

Class:- BCA/SM/1/MIC/101 (COMPUTER FUNDAMENTAL)

Month of July/August:-

Introduction: Introduction to Computer, Evolutions, classification of Computer, Components of computer and block diagram of computer. Input devices: Text, point and draw devices, direct data input devices. Output devices: hard copy (Printers and Plotters) and soft copy (CRT and Flat panel display).

Month of September:-

Memory: Types Primary, Secondary, cache, registers, Characteristics, Hierarchy of Memory. Hardware & Software: Introduction to hardware, software, types of software. Number System: Binary number System, octal number System, Decimal number System, Hexadecimal Number System, and their conversions.

Month of October:-

Operating System: Definition, Types, layered architecture of Operating system, Functions and services of an Operating System, User Interface, Operating System for mobile and desktop. Windows Accessories: Notepad, WordPad, Notepad++, Control Panel: Add or Remove Programs, Display Properties, Change Date & Time Computer Networks: Computer

Month of November:-

Network and its types (LAN, MAN, WAN, PAN) Internet: Applications of internet, Advantages & disadvantages, services of internet. Search Engines, Web browsers, Antivirus. Email: Steps to create an email account and how to send an email with attachment, advantages of email.

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Lesson Plan

Session: - 2025-26 (1st Sem)

Class:- BCA 1st Sem

Subject: SEC (BSC/BCOM/BA/CSE/MD/1/SEC/101 Digital Fluency in Public Life)

Month of July/August:-

Introduction: Definition, Characteristics, Applications, Components of Computer System, Input/Output Devices, Memory: Concept of Memory, Memory Hierarchy, Units of Memory, and Types of Memory.

Month of September:-

Operating System: Definition & Functions of Operating System, Types of Operating System Basic Components of Windows, Exploring Computer, Icons, taskbar, desktop, managing files and folders, Control panel – display properties, add/remove software and hardware, setting date and time, screensaver.

Month of October:-

Windows Accessories: Notepad: Basic text editing, file extensions (.txt, .html), simple HTML coding, WordPad: Enhanced text formatting, MS Paint: Drawing, editing images, saving in different formats (BMP, PNG, JPG), Snipping Tool / Snip & Sketch: Taking screenshots

Month of November:-

Word Processing: Introduction to Word Processing, Menus, Creating, Editing & Formatting Documents, Spell Checking, Printing, Views, Tables, Word Art. Header and Footer, Mail Merge.

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Lesson Plan

Session: - 2025-26

Class: - BCA V Sem.

Subject: - BCA- 53 DATA MINING AND DATA WAREHOUSING

Month of August:-

Introduction to Data mining, Role Data in Data Mining, Data Mining functionalities, patterns in data mining, Type of patterns, Classification of Data Mining Systems, Major issues in Data Mining.

Month of September:-

Introduction to Data Warehousing, The need for data warehousing, Operational & Informational Data Stores, Data Ware house Characteristics, Data Warehouse role & Structure, The cost of warehousing data.

Month of October:-

Introduction to OLAP & OLTP, Difference between OLAP & LTP.OLAP Operations.Building a Data Warehouse, Design/Technical/Implementation Considerations, Data Preprocessing Overview. Data Summarization, Data Cleaning, Data Transformation, Concept Hierarchy, Structure. Patterns & Models.

Month of November:-

Association Rule Mining: Mining single-dimensional Boolean association rules from transactional databases, mining multilevel association rules from transaction databases, Mining multidimensional association rules from relational databases and data warehouses, From association mining to correlation analysis, constraint-based association Mining

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Lesson Plan

Session: - 2025-26

Class: - BCA V Sem.

Subject: - BCA- 55 COMPUTER NETWORKS

Month of August:-

Introduction to Computer Communications and Networking Technologies; Uses of Computer Networks; Network Devices, Nodes, and Hosts; Types of Computer Networks and their Topologies; Protocols: Connection-Oriented and Connectionless Services; Network Applications and Application Protocols; Computer Communications and Networking Models: Decentralized and Centralized Systems, Distributed Systems, Client/Server Model, Peer-to-Peer Model, Web-Based Model, Network Architecture and the OSI Reference Model.

Month of September:-

Analog and Digital Communications Concepts: Representing Data as Analog Signals, Representing Data as Digital Signals, Data Rate and Bandwidth, Capacity, Baud Rate; Digital Carrier Systems; Guided and Wireless Transmission Media; Switching and Multiplexing. Network Hardware Components: Connectors, Transceivers, Repeaters, Hubs, Network Interface Cards and PC Cards, Bridges, Switches, Routers, Gateways.

Month of October: -

Data Link Layer: Framing, Flow Control, Error Control; Error Detection and Correction; Sliding Window Protocols; Media Access Control: Random Access Protocols, Token Passing Protocols; Token Ring.

Month of November:-

Network Layer and Routing Concepts: Virtual Circuits and Datagrams; Routing Algorithms: Flooding, Shortest Path Routing, Distance Vector Routing; Link State Routing, Hierarchical Routing; Congestion Control Algorithms; Internetworking; Network Security Issues: Security threats; Encryption Methods; Authentication; Symmetric – Key Algorithms; Public-Key Algorithms;

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Lesson Plan

Session: - 2025-26

Class: -BSC/BA (1st Sem)

Subject:-BSC/BA/MD/CS/1/DSC/101(Computer Fundamentals and Programming in C)

Month of August:-

Computer System: Definition, Characteristics of Computer, Block Diagram of Computer and its components and their functions. Memory: Need of Memory, Characteristics of Memory, Introduction to Primary and Secondary Memory. Compiler & Interpreter. Number System: Number Systems and their Conversions.

Month of September:-

Elements of C: C character set, Identifiers and Keywords, Data types, Constants and Variables, Structure of a C Program, Arithmetic, Relational and Logical Operators, Arithmetic expressions, Evaluation of arithmetic expressions, Operators' Precedence and Associativity in expression evaluation, Type Casting.

Month of October:-

Control Structures: Conditional statements, iterative/looping statements, break and continue goto statement. Functions: Prototype, Declaration and Definition of a function, Actual and Formal Arguments in Functions, Recursion.

Month of November:-

Arrays: Definition, Creating and Using One Dimensional Arrays, Initializing an Array, Accessing individual elements in an Array, Two dimensional Arrays.

Introduction to Pointers: Understanding a Pointer Variable, call by value; call by reference, Pointers and Arrays.

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Deptt.:- Computer Science

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Lesson Plan: Session: - 2025-26_Class: - BA/B.Sc. 5th Sem

Subject: - CS-51 COMPUTER NETWORKS

Teacher Name:- BHARAT BHUSHAN

Deptt.:- Computer Science

Month	Topics to be covered	Class Test/Assignment/Mid term test
September	Introduction to Data Transmission: Representing Data as Analog Signals and Digital Signals, Data Encoding, Transmission Media: Guided and Wireless, Bandwidth, Capacity, Data Rate and Baud Rate, framing and errors, Asynchronous and Synchronous Communication. Local Asynchronous Communication: Introduction, LAN Topologies and their Media Access Control (MAC) protocols.	Assignment1 in the last week of September
October	Long Distance Communication: Concept of Carrier Waves, Baseband, Broadband, Modulation, Demodulation, Switching (Packet Switching and Circuit Switching) and Multiplexing (FDM, TDM). Reference Models: OSI and TCP/IP Models, various layers of Reference Models, communication between layers of Reference Models, various Protocols. Data Link Layer: Flow Control (Stop and Wait, Sliding Window), Error Detection (Parity Check and CRC), Error Correction (Stop and Wait, Go-back-N, Selective Reject)	Class test in second week of October
November	Network Layer: Addressing Schemes (Logical Addressing and Address Mapping), Routing Techniques (Flooding, Shortest Path, Distance Vector); Congestion Control in Packet Switching Networks. Network Security: Issues, Introduction to Cryptography; Symmetric –Keys and Public-Keys, Authentication and Authorization, Firewall.	Assignment2 in the first week of November

Signature of Teacher

Office of the Principal CMG, G.C.W Bhodia Khera (Fatehabad)

Lesson Plan: Session: - 2025-26_Class: - BA/B.Sc. 3rd Sem.

Subject: - **Object Oriented programming with C++**

Teacher Name:- BHARAT BHUSHAN

Deptt.:- Computer Science

Month	Topics to be covered	Class Test/Assignment/Mid term test
September	Introduction to Programming in C++: Concept of OOP, Programming Features of C++, concept of class and object, Data types and operators, Control Statements: Conditional Statements & Loops, Data members and Member functions, Access specifiers, Static Data Members and static Member Functions, Inline Functions, Friend Function.	Assignment1 in the last week of September
October	Constructors & Destructors: Introduction, default, parameterized and copy constructors, function overloading, Operator Overloading: Overloading unary and binary operators.	Class test in second week of October
November	Inheritance: Introduction, Types of Inheritance: Single, Multiple, Multilevel, Hierarchical and Hybrid. Polymorphism: compile-time and run time Polymorphism.	Assignment2 in the first week of November

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Lesson Plan: Session: - 2025-26_Class: - BA/B.Sc. 1st Sem

Subject: - **Information Technology Tools**

Teacher Name:- BHARAT BHUSHAN

Deptt.:- Computer Science

Month	Topics to be covered	Class Test/Assignment/Mid term test
September	Introduction to Computers: Generations of Computers, Characteristics of computers, Limitations of Computers. Applications of computers, Block diagram of computer, functions of different units of computers. Operating System Concepts Need and Functions of Operating Systems,, Type of OS: Batch, Multi-programming and real time Network and distributed OS,	Assignment1 in the last week of September
October	Computer languages: Introduction to High Level Language, Low Level Language and Assembly Language, Compilers, Interpreters, Assemblers. Word Processing: Introduction to Word Processing, Menus, Creating, Editing & Formatting Document, Spell Checking, Printing, Views, Tables, Word Art. Email – Sending mail to a number of people in a group, downloading an attachment.	Class test in second week of October
November	Networking and Internet Basic Concepts of Networking, Advantages of Networking, Types of Networks, Network Devices, www, IP addresses.	Assignment2 in the first week of November

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Lesson Plan: Session: - 2025-26_Class: - BCA 5th Sem

Subject: - BCA-54 Artificial Intelligence

Teacher Name:- BHARAT BHUSHAN

Deptt.:- Computer Science

Month	Topics to be covered	Class Test/Assignment/Mid term test
September	Overview of A.I.: Introduction to AI, AI and its related field, AI techniques, Criteria for success. Problems, problem space and search: Defining the problem as a state space search, production system and its characteristics, Issues in the design of the search problem. Knowledge representation: Definition and importance knowledge, knowledge representation , various approaches used in knowledge representation, Issues in knowledge representation.	Assignment1 in the last week of September
October	Using Predicate Logic: Representing simple facts in logic, representing instances and is_a relationship, computable function and predicate. Natural language processing: Introduction syntactic processing, semantic processing, Discourse and pragmatic processing. Learning: Introduction learning, Rote learning, learning by taking advice, learning in problem solving, learning from example-induction, Explanation based learning.	Class test in second week of October
November	Expert System: Introduction, Representing using domain specific knowledge, Expert System shells.	Assignment2 in the first week of November

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Lesson Plan: Session: - 2025-26_Class: - BCA 3rd Sem

Subject: - Digital Electronics

Teacher Name:- BHARAT BHUSHAN

Deptt.:- Computer Science

Month	Topics to be covered	Class Test/Assignment/Mid term test
September	Information Representation: Number-Systems and its complements, Binary-Arithmetic, Fixed-point and Floating point representation of numbers, BCD Codes, EBCDIC, ASCII, UNICODE, Gray Code, Excess-3 Code, Self Complementing codes, Weighted Codes	Assignment1 in the last week of September
October	Binary Logic: Boolean algebra, Boolean Theorems, Boolean Functions and Truth Tables, Canonical and Standard forms of Boolean functions, Simplification of Boolean Functions using Boolean postulates and K- Map, Digital Logic: Basic Gates - AND, OR, NOT, Universal Gates - NAND, NOR, Other Gates - XOR, XNOR etc, AND-OR-INVERT and OR-AND-INVERT implementations of digital circuits.	Class test in second week of October
November	Combinational Circuits: Half-Adder, Full-Adder, Half-Subtractor, Full-Subtractor Introduction to Sequential Circuits: Flip-flops, SR Flip flop, JK Flip flop, D-Flip flop, T- Flip flop	Assignment2 in the first week of November

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