Shri Guru Teg Bahadur Ji Govt College, Taraori (Karnal)

Department: Computer Science Dept **Class:** BCA-II sem

Subject: Object Oriented Programming using C++

Month	Weeks	Lesson Plan
Feb 2025	Week 1	Exams
	Week 2	Input Output in C++: Unformatted and Formatted I/O Operations. I/O using insertion and extraction operators and streams in C++.
	Week 3	Functions: Declaration and Definition, return values, arguments, passing parameters by value, call by reference, call by pointer, Recursion, Inline Functions, Function overloading. Pointers, structures, and union in C++
	Week 4	Assignment, Revision & Monthly Doubt Clearing session, Unit Test
Mar 2025	Week 1	Object-oriented features of C++: Class and Objects, Data hiding & encapsulation, abstraction, Data Members and Member Functions, accessing class members,
	Week 2	Holi Break
	Week 3	empty class, local class, global class, Scope Resolution Operator and its Uses, Static Data Members, Static Member Functions,
	Week 4	Structure vs Class, Friend function and friend class. Monthly Doubt Clearing Session.
Apr 2025	Week 1	Constructors and Destructors: Constructors, Instantiation of objects, Default constructor, Parameterized constructor, Copy constructor and its use, Destructors, Dynamic initialization of objects.
	Week 2	Operator Overloading: Overloading unary and binary operators: arithmetic operators, manipulation of strings using operators
	Week 3	Inheritance: Derived class, base class, Accessing the base class member, Inheritance: multilevel Inheritance: Derived class, base class, Accessing the base class member, Inheritance: multilevel multiple, hierarchical, hybrid;
	Week 4	Assignments, Revision & Monthly Doubt Clearing Session; Unit Test
May 2025	Week 1	Virtual base class, Abstract class, Virtual Functions, pure virtual functions; Polymorphism & its types
	Week 2	Exception Handling in C++: exception handling model, exception handling constructs - try, throw, catch,
	Week 3	Order of catch blocks, Catching all exceptions, Nested try blocks, handling uncaught exceptions.
	Week 4	Revision & Mega Doubt Clearing Session; Sessional

(Dr Abha Narwal)

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Department: Computer Science Dept **Class:** BCA-II sem

Subject: Concepts of Operating Systems

Month	Weeks	Lesson Plan
Feb 2025	Week 1	Exams
	Week 2	Introductory Concepts: Operating System, Functions and Characteristics, Historical Evolution of Operating Systems, Operating System Structure. Types of Operating System: Real-time, Multiprogramming, Multiprocessing, Batch processing.
	Week 3	Operating System Services, Operating System Interface, Service System, Calls, and System Programs.
	Week 4	Assignment, Revision & Monthly Doubt Clearing session, Unit Test
Mar 2025	Week 1	Process Management: Process Concepts, Operations on Processes, Process States, and Process Control Block. Inter-Process Communication
	Week 2	Holi Break
	Week 3	CPU Scheduling: Scheduling Criteria, Levels of Scheduling, Scheduling Algorithms, Multiple Processor Scheduling, Algorithm Evaluation.
	Week 4	Synchronization: Critical Section Problem, Semaphores, Classical Problem of Synchronization, Monitors. Monthly Doubt Clearing Session.
Apr 2025	Week 1	Deadlocks: Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection and Recovery
	Week 2	Memory Management Strategies: Memory Management of Single-user and Multiuser Operating Systems, Partitioning, Swapping, Contiguous Memory Allocation, Paging and Segmentation;
	Week 3	Virtual Memory Management: Demand Paging, Page Replacement Algorithms, Thrashing.
	Week 4	Assignments, Revision & Monthly Doubt Clearing Session; Unit Test
May 2025	Week 1	Implementing File System: File System Structure, File System Implantation, File Operations,
	Week 2	Type of Files, Directory Implementation, Allocation Methods, and Free Space Management.
	Week 3	Disk Scheduling algorithm - SSTF, Scan, C- Scan, Look, C-Look. SSD Management.
	Week 4	Revision & Mega Doubt Clearing Session; Sessional

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Shri Guru Teg Bahadur Ji Govt College, Taraori (Karnal)

Department: Computer Science Dept **Class:** BSc-II sem

Subject: Web Development

Month	Weeks	Lesson Plan
Feb 2025	Week 1	Exams
	Week 2	Introduction to Internet and World Wide Web (WWW);of World Wide Web, Web Pages and Contents, Evolution and History, Web Clients, Web Servers, Web Browsers;
	Week 3	Hypertext Transfer Protocol, URLs; Searching, Search, Engines and Search Tools. Web Publishing: Hosting website; Internet Service Provider; Planning and designing website; Web Graphics Design, Steps For Developing website
	Week 4	Assignment, Revision & Monthly Doubt Clearing session, Unit Test
Mar 2025	Week 1	Creating a Website and Introduction to Markup Languages (HTML and DHTML),
	Week 2	Holi Break
	Week 3	HTML Document Features & Fundamentals, HTML Elements, Creating Links; Headers; Text styles; Text Structuring; Text colour and Background;
	Week 4	Formatting text; Page layouts, Images; Ordered and Unordered lists; Inserting Graphics; Table Creation and Layouts; Frame Creation and Layouts; Monthly Doubt Clearing Session.
Apr 2025	Week 1	Images; Ordered and Unordered lists; Inserting Graphics; Table Creation and Layouts; Frame Creation and Layouts;
	Week 2	Working with Forms and Menus; Working with Radio Buttons; Check Boxes; Text Boxes, HTML5
	Week 3	Introduction to CSS (Cascading Style Sheets): Features, Core Syntax, Types, Style Sheets and HTML,
	Week 4	Assignments, Revision & Monthly Doubt Clearing Session; Unit Test
May 2025	Week 1	Style Rule Cascading and Inheritance, Text Properties, CSS Box Model, Normal Flow Box Layout, Positioning, and other useful Style Properties; Features of CSS3.
	Week 2	The Nature of JavaScript: Evolution of Scripting Languages, JavaScript-Definition, Programming for Non-Programmers,
	Week 3	Introduction to Client–Side Programming, Enhancing HTML Documents with JavaScript. Static and Dynamic web pages
	Week 4	Revision & Mega Doubt Clearing Session; Sessional

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Shri Guru Teg Bahadur Ji Govt College, Taraori (Karnal)

Department: Computer Science Dept **Class:** BSc-IV sem

Subject: Data Management with DBMS

Month	Weeks	Lesson Plan
Feb 2025	Week 1	Exams
	Week 2	Basic Concepts: Data, Information, Records, Files, Schema and Instance etc. Limitations of File-Based Approach, Characteristics of Database Approach, Database Management System (DBMS), DBMS Functions and Components, Database Interfaces, Advantages and Disadvantages of DBMS.
	Week 3	Database Users: Data and Database Administrator, Role and Responsibilities of Database Administrator, Database Designers, Application Developers etc.
	Week 4	Assignment, Revision & Monthly Doubt Clearing session, Unit Test
Mar 2025	Week 1	Database System Architecture: 1-Tier, 2-Tier & Three Levels of Architecture, External, Conceptual and Internal Levels, Schemas, Mappings and Instances, Data Independence – Logical and Physical Data Independence
	Week 2	Holi Break
	Week 3	Data Models: Hierarchical, Network, and Relational Data Model
	Week 4	Monthly Doubt Clearing Session.
Apr 2025	Week 1	Entity-Relationship Model: Entity, Entity Sets, Entity Type, Attributes: Type of Attributes, Keys, Integrity Constraints, Designing of ER Diagram, Symbolic Notations for Designing, ER Diagram
	Week 2	SQL: Meaning, Purpose, and Need of SQL, Data Types, SQL Components: DDL, DML, DCL and DQL,
	Week 3	Basic Queries, Join Operations and Sub-queries, Views, Specifying Indexes. Constraints and its Implementation in SQL
	Week 4	Assignments, Revision & Monthly Doubt Clearing Session; Unit Test
May 2025	Week 1	Relational Algebra: Basic Operations: Select, Project, Join, Union, Intersection, Difference, and Cartesian Product, etc. Relational Calculus: Tuple Relational and Domain Relational Calculus. Relational Algebra Vs. Relational Calculus
	Week 2	Relational Model: Functional Dependency, Characteristics, Inference Rules for Functional Dependency, Types of Functional Dependency,
	Week 3	Normalization: Benefits and Need of Normalization, Normal Forms Based on Primary Keys- (1NF, 2NF, 3NF, BCNF), Multi-valued Dependencies, 4 NF, Join dependencies, 5 NF, Domain Key Normal Form
	Week 4	Revision & Mega Doubt Clearing Session; Sessional

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