DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) ODD Semester

Class: BCA First Year **Subject: Problem Solving through C**

Week 1 (July 24-29)	Overview of C: History, Importance, Structure of C Program, Character Set, Constants
Week 2 (August 1-5)	Variables, Identifiers and Keywords, Data Types, Assignment Statement, Symbolic Constant
Week 3 (August 7-12)	Input/output: Formatted I/O Function-, Input Functions viz. scanf() output functions
Week 4 (August 14-18)	getch(), getche(), getchar(), gets(),printf(), putch(), putchar(), puts()
Week 5 (August 21-26)	Revision,Class test, Discussion of problems
Week 6 (August 28- September 2)	Operators & Expression: Arithmetic, Relational, Logical, Bitwise, Unary, Assignment, Conditional Operators and Special Operators Operator Hierarchy; Arithmetic Expressions, Evaluation of Arithmetic Expression
Week 7 (September 4 -9)	Type Casting and Conversion. Decision making with if statement, ifelse statement, nested if statement, else-if ladder, switch and break statement, goto statement, Looping Statements: for, while, and dowhile loop, jumps in loops
Week 8 (September 11 -16)	Revision,Class test,Discussion of problems
Week 9 (September 18 -22)	Arrays: One Dimensional arrays - Declaration, Initialization and Memory representation; Two Dimensional arrays -Declaration, Initialization and Memory representation
Week 10 (September 25 -30)	Functions: definition, prototype, function call, passing arguments to a function: call by value; call by reference, recursive functions.
Week 11 (October 3-7)	Strings: Declaration and Initialization, String I/O, Array of Strings, String Manipulation Functions: String Length, Copy, Compare, Concatenate etc., Search for a Substring.
Week 12 (October 9-14)	Pointers in C: Declaring and initializing pointers, accessing address and value of variables using pointers; Pointers and Arrays
Week 13 (October 16 - 21)	User defined data types: Structures - Definition, Advantages of Structure, declaring structure variables, accessing structure members
Week 14 (October 23-31)	Structure members initialization, Array of Structures; Unions - Union definition; difference between Structure and Union.
Week 15 (November 2-9)	Sessional Exams
Week 16 (November 10-16)	Diwali Break
November 17	Sessional MDC
November 18	Revision / Distribution of sessional exams answer sheets
Week 17 (November 20-24)	Revision, Discussion of problems

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) ODD Semester

Class: BCA Ist sem (Major) **Subject: Logical Organization of Computer**

Week 1 (July 24-29)	
Week 2 (August 1-5)	
Week 3 (August 7-12)	Number Systems: Binary, Octal, Hexadecimal etc. Conversions from one number system to another, BCD Number System. Revision.
Week 4 (August 14-18)	BCD Codes: Natural Binary Code, Weighted Code, Self Complimenting Code, Cyclic Code. Error Detecting and Correcting Codes. Character representations: ASCII, EBCDIC and Unicode. Revision.
Week 5 (August 21-26)	Number Representations: Integer numbers - sign-magnitude, 1's & 2's complement representation. Real Numbers normalized floating point representations Revision and Test.
Week 6 (August 28- September 2)	Binary Arithmetic: Binary Addition, Binary Subtraction, Binary Multiplication, Binary Division using 1's and 2's Compliment representations, Addition and subtraction with BCD representations. Revision.
Week 7 (September 4 -9)	Boolean Algebra: Boolean Algebra Postulates, basic Boolean Theorems, Boolean Expressions, Boolean Functions, Truth Tables, Canonical Representation of Boolean Expressions: SOP and POS, Revision.
Week 8 (September 11 -16)	Simplification of Boolean Expressions using Boolean Postulates & Theorems, Kaurnaugh-Maps (upto four variables), Handling Don't Care conditions, Revision and Test
Week 9 (September 18 -22)	Logic Gates: Basic Logic Gates – AND, OR, NOT, Universal Gates – NAND, NOR, Other Gates – XOR, XNOR etc. Their symbols, truth tables and Boolean expressions. Combinational Circuits: Design Procedures, Half Adder, Full Adder, Revision.
Week 10 (September 25 -30)	Half Subtractor, Full Subtracor, Multiplexers, Demultiplexers, Decoder, Encoder, Comparators, Code Converters, Revision and Test.
Week 11 (October 3-7)	Sequential Circuits: Basic Flip- Flops and their working. Synchronous and Asynchronous Flip –Flops, Triggering of FlipFlops, Clocked RS, D Type.
Week 12 (October 9-14)	JK, T type and Master-Slave Flip-Flops. State Table, State Diagram and State Equations. Flip-flops characteristics & Excitation Tables
Week 13 (October 16 - 21)	Sequential Circuits: Designing registers –Serial-In Serial-Out (SISO), Serial-In Parallel-Out (SIPO), Parallel-In Serial-Out (PISO) Parallel-In Parallel-Out (PIPO) and shift

	registers.
Week 14 (October 23-31)	Revision, Class test
Week 15 (November 2-9)	Sessional Exams
Week 16 (November 10-16)	Diwali Break
November 17	Sessional MDC
November 18	Revision / Distribution of sessional exams answer sheets
Week 17 (November 20-24)	Revision, Discussion
Week 18 (November 28- December 2)	Revision, Discussion
Week 19 (December 4- 6)	Revision, Discussion

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) ODD Semester

Class: BCA 1st Sem. **Subject:** Basics of Computer Science(B23-CAC-103)

Week 1 (July 24-29)	Introduction to Computers: Definition of Computers, History and Generations of Computers
Week 2 (August 1-5)	Characteristics of computer, Classification of Computers
Week 3 (August 7-12)	Fundamental Block diagram of Computer: CPU, Input & Output Unit.
Week 4 (August 14-18)	Software: Definition of Software, Types of Software-System software, Application software and Utility software
Week 5 (August 21-26)	Types of Computer Languages, Assemblers, Interpreters, Compiler.
Week 6 (August 28- September 2)	Introduction to Operating Systems: Types of Operating System, Functions of Operating System. Windows: Introduction to Windows
Week 7 (September 4 -9)	Starting Windows, Desk Top, Task Bar, Opening and closing applications, icons creating, renaming and removing
Week 8 (September 11 -16)	Date and Time setting, Working with files and folders-creating, deleting, opening, finding, copying, moving, and renaming.
Week 9 (September 18 -22)	Networking: Concept, Basic Elements of a Communication System,
Week 10 (September 25 -30)	Data Transmission Media, LAN, MAN, WAN.
Week 11 (October 3-7)	Introduction of Internet and WWW, Basic working of a Web Browser,
Week 12 (October 9-14)	Introduction to popular web browsers, Revision and class Test
Week 13 (October 16 - 21)	Revision and class Test
Week 14 (October 23-31)	Revision and class Test
Week 15 (November 2-9)	Sessional Exams
Week 16 (November 10-16)	Diwali Break
November 17	Sessional MDC
November 18	Revision / Distribution of sessional exams answer sheets
Week 17 (November 20-24)	Revision and class Test
Week 18 (November 28- December 2)	Revision and class Test

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) ODD Semester

Class: B.C.A. 3rd Sem. Subject: Fundamentals of DataBase Systems

Week 1 (July 24-29)	Basic Concepts – Data, Information, Records and files
Week 2 (August 1-5)	Traditional file based Systems-File Based Approach, Limitations of File Based Approach
Week 3 (August 7-12)	Database Approach-Characteristics of Database Approach
Week 4 (August 14-18)	Database Management System (DBMS), Components of DBMS Environment, DBMS Functions and Components
Week 5 (August 21-26)	Advantages and Disadvantages of DBMS, Roles in the Database Environment - Data and Database Administrator, Database Designers
Week 6 (August 28- September 2)	Applications Developers and Users, Database System Architecture – Three Levels of Architecture, External, Conceptual and Internal Levels, Schemas, Mappings and Instances
Week 7 (September 4 -9)	Revision , Class Test
Week 8 (September 11 -16)	Data Independence – Logical and Physical Data Independence, Classification of Database Management System, Centralized and Client Server architecture to DBMS
Week 9 (September 18 -22)	Data Models: Records- based Data Models, Object-based Data Models, Physical Data Models and Conceptual Modeling
Week 10 (September 25 -30)	Entity-Relationship Model – Entity Types, Entity Sets, Attributes Relationship Types, Relationship Instances and ER Diagrams
Week 11 (October 3-7)	Class Test
Week 12 (October 9-14)	Relational Data Model Brief History, Terminology in Relational Data Structure
Week 13 (October 16 - 21)	Properties of Relations, Keys, Domains, Integrity Constraints over Relations
Week 14 (October 23-31)	Base Tables and Views, Basic Concepts of Hierarchical and Network Data Model
Week 15 (November 2-9)	Sessional Exams
Week 16 (November 10-16)	Diwali Break
November 17	Sessional MDC
November 18	Revision / Distribution of sessional exams answer sheets
Week 17 (November 20-24)	Revision

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) ODD Semester

Class:BCA 3rd sem **Subject: Computer oriented numerical methods(BCA-236)**

Week 1 (July 24-29)	Computer Arithmetic: Floating-pointrepresentation of numbers
Week 2 (August 1-5)	arithmetic operations with normalized floating-point numbers and their consequences, significant figures
Week 3 (August 7-12)	Error in number representation-inherent error,truncation, absolute, relative, percentage and round-off error.
Week 4 (August 14-18)	Iterative Methods: Bisection,False position,
Week 5 (August 21-26)	Newton-Raphson method. Iteration method, discussion of convergence, Bairstow's method.
Week 6 (August 28- September 2)	Solution of simultaneous linear equations andordinary differential equations: Gauss-Elimination methods,
Week 7 (September 4 -9)	pivoting, Ill-conditioned equations, refinementof solution.
Week 8 (September 11 -16)	Gauss-Seidal iterative method, Euler method,Euler modified method
Week 9 (September 18 -22)	Taylor-series method, Runge-Kutta methods,Predictor-Corrector methods.
Week 10 (September 25 -30)	Polynomial interpolation: Newton
Week 11 (October 3-7)	Lagranges, Difference tables, Approximation offunctions by Taylor Series.
Week 12 (October 9-14)	Chebyshev polynomial: First kind, Second kindand their relations, Orthogonal properties.
Week 13 (October 16 - 21)	Numerical Differentiation and integration: Differentiation formulae based on polynomial fit,
Week 14 (October 23-31)	pitfalls in differentiation, Trapezoidal & SimpsonRules,
Week 15 (November 2-9)	Sessional Exams
Week 16 (November 10-16)	Diwali Break
November 17	Sessional
November 18	Revision / Distribution of sessional examsanswer sheets
Week 17 (November 20-24)	

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) ODD Semester

Class: BCA 3rd Sem **Subject: Software Engineering**

Week 1 (July 24-29)	Software Engineering, Programming paradigms, Software Crisis, problem and causes
Week 2 (August 1-5)	Phases in Software development: Requirement Analysis, Software Design, Coding, Testing, Maintenance, Software Development Process Models
Week 3 (August 7-12)	Waterfall, Prototype, Evolutionary and Spiral models, Role of Metrics, FeasibilityStudy
Week 4 (August 14-18)	Software Requirement Analysis and Specifications: SRS, Need for SRS, Characteristics of an SRS, Components of an SRS, Problem Analysis, Information Gathering tools
Week 5 (August 21-26)	Organizing and structuring information, Requirement specification, validation and Verification, SCM
Week 6 (August 28-September 2)	Data Flow Diagram, Data Dictionary, Decision table, Decision tress, Entity-Relationship diagrams
Week 7 (September 4 -9)	Cohesion and Coupling
Week 8 (September 11 -16)	Gantt chart, PERT Chart
Week 9 (September 18 -22)	COCOMO model, Project scheduling, Staffing and personnel planning
Week 10 (September 25 -30)	Team structure, Software configuration management, Quality assurance plans
Week 11 (October 3-7)	Project monitoring plans, Risk Management, Software testing strategies
Week 12 (October 9-14)	Unit testing, integration testing, Validation testing
Week 13 (October 16 - 21)	System testing, Alpha and Beta testing
Week 14 (October 23-31)	Software Maintenance: Type of maintenance, Management of Maintenance, Maintenance Process
Week 15 (November 2-9)	Sessional Exams

Week 16 (November 10-16)	Diwali Break
November 17	Sessional MDC
November 18	Revision / Distribution of sessional exams answer sheets
Week 17 (November 20-24)	Maintenance characteristics

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) ODD Semester

Class: BCA III SEM Subject: Data Structures (BCA-232)

Week 1 (July 24-29)	Elementary Data Organization, Data Structure Definition, Data type v/s Data Structure, Categories of data structure
Week 2 (August 1-5)	Data Structure Operations, Algorithms, Complexity and time-space trade off, Big O notation
Week 3 (August 7-12)	Arrays, Types of arrays, one dimensional arrays, sequential allocation , address calculation of elements of 1-D array, Operations on 1-D array : Traversing, insertion
Week 4 (August 14-18)	Deletion in an array, Searching and sorting, Two dimensional arrays, sequential allocation in memory, address computation.
Week 5 (August 21-26)	Three dimensional arrays, general multi dimensional arrays, sparse arrays, pointers and records
Week 6 (August 28- September 2)	Introduction to linked lists, representation of linked lists in memory, traversing a linked list, searching an element in a linked list
Week 7 (September 4 -9)	free storage lists, garbage collection, insertion, Deletion from a linked list
Week 8 (September 11 -16)	Implementation of a linked list, Header linked list, Circular Linked lists, Two way linked lists
Week 9 (September 18 -22)	Introduction to stacks, array and linked representation of stacks, operations on stacks and their algorithms.
Week 10 (September 25 -30)	Applications of stacks: Polish notation for arithmetic expressions, recursion, Introduction to queues
Week 11 (October 3-7)	Implementation of queues as array and linked lists, Operations on Queue, De-queues, Prioriety queues, applications of queues
Week 12 (October 9-14)	Introduction to trees, definition of terms related to trees, Binary trees, storage representation using arrays and linked lists
Week 13 (October 16 - 21)	basic operations, tree traversal, Expression tree, traversal algorithms
Week 14 (October 23-31)	Introduction to graphs, Graph theory terminology, sequential and linked representation of graphs, Traversing a graph, Revision
Week 15 (November 2-9)	Sessional Exams
Week 16 (November 10-16)	Diwali Break
November 17	Sessional MDC
November 18	Revision / Distribution of sessional exams answer sheets
Week 17 (November 20-24)	
Week 18 (November 28- December 2)	PG only
Week 19 (December 4- 6)	PG only

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) ODD Semester

Class: BCA II (3rd Sem.) Subject: Computer Architecture (BCA-233)

Week 1 (July 24-29)	Basic Computer Organisation and Design, Instruction Codes.
Week 2 (August 1-5)	Computer, Computer Instructions, Timing and Control registers.
Week 3 (August 7-12)	Instruction Cycle, Memory reference instructions, Input-Output and Interrupt.
Week 4 (August 14-18)	Design of Basic computer, Design of accumulator logic, Design of Control Unit.
Week 5 (August 21-26)	Register Transfer and Micro operations: Register Transfer Language(RTL) Register transfer, Bus and Memory Transfers,
Week 6 (August 28- September 2)	Arithmetic micro operations, Logic Micro operations, Shift Micro operations, Arithmetic Logic Shift Unit.
Week 7 (September 4 -9)	Micro programmed Control: Control memory; address sequencing, micro program sequencer, Central Processing Unit: General registers Organization, Stack organization
Week 8 (September 11 -16)	Instruction formats, Addressing Modes, Data Transfer and Manipulation
Week 9 (September 18 -22)	Program Control, Program Interrupt, RISC, CISC
Week 10 (September 25 -30)	Memory hierarchy, Auxiliary Memory, Associative Memory, Interleaved memory, Cache memory
Week 11 (October 3-7)	Virtual Memory, Memory Management Hardware, Input Output Organization
Week 12 (October 9-14)	Input-Output Interface, Asynchronous data transfer, Modes of Transfer, Priority Interrupt
Week 13 (October 16 - 21)	Direct Memory access (DMA), Input-Output Processor (IOP).
Week 14 (October 23-31)	Revision
Week 15 (November 2-9)	Sessional Exams
Week 16 (November 10-16)	Diwali Break
November 17	Sessional MDC
November 18	Revision / Distribution of sessional exams answer sheets
Week 17 (November 20-24)	Revision.

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) ODD Semester

Class: BCA 3rd Sem. Subject: Object Oriented Programming Using C++

Week 1 (July 24-29)	Object-Oriented programming features and benefits, Object-Oriented features of C++
Week 2 (August 1-5)	Class and Objects, Data Hiding & Encapsulation, Data members and Member functions
Week 3 (August 7-12)	Scope resolution operator and its significance, Structures
Week 4 (August 14-18)	Static Data Members, Static member functions, Nested and Local Class, Accessing Members of Class and Structure
Week 5 (August 21-26)	Constructor, Initialization using constructor, types of constructor– Default, Parameterized constructor, Copy Constructors
Week 6 (August 28- September 2)	Constructor overloading, Default Values to Parameters, Destructors , Console I/O: Hierarchy of Console Stream Classes
Week 7 (September 4 -9)	Unformatted I/O Operations, Formatted I/O Operations
Week 8 (September 11 -16)	Manipulators, Friend Function, Friend Class
Week 9 (September 18 -22)	Arrays, Array of Objects, Passing and Returning Objects to functions
Week 10 (September 25 -30)	String Handling in C++,Dynamic Memory Management: Pointers, new and delete Operator
Week 11 (October 3-7)	this Pointer, Passing Parameters to Functions by Reference & pointers Polymorphism
Week 12 (October 9-14)	Operators in C++, Precedence and Associatively Rules
Week 13 (October 16 - 21)	Operator Overloading, Unary & Binary Operators Overloading
Week 14 (October 23-31)	Function Overloading, Inline Functions
Week 15 (November 2-9)	Sessional Exams
Week 16 (November 10-16)	Diwali Break
November 17	Sessional MDC
November 18	Revision / Distribution of sessional exams answer sheets
Week 17 (November 20-24)	
Week 18 (November 28- December 2)	PG only
Week 19 (December 4- 6)	PG only

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) EVEN Semester

Class: B.C.A. 4th Sem. **Subject: Relational DBMS**

Week 1 (January 1-6)	Relational Model Concepts, Codd's Rules for Relational Model, Relational Algebra Selection and Projection, Set Operation, Renaming
Week 2 (January 8-13)	Join and Division, Relational Calculus: Tuple Relational Calculus, Domain Relational Calculus
Week 3 (January 15-20)	Functional Dependencies and Normalization Purpose, Data Redundancy and Update Anomalies, Functional Dependencies, Full Functional Dependencies
Week 4 (January 22-27)	Transitive Functional Dependencies, Characteristics of Functional Dependencies, Decomposition
Week 5 (January 29- February 3)	Normal Forms (1NF, 2NF, 3NF & BCNF, 4NF, 5NF)
Week 6 (February 5-10)	Revision and Class Test
Week 7 (February 12-17)	SQL: Data Definition and data types, SQL Operators, Specifying Constraints in SQL, Basic DDL
Week 8 (February 19-23)	DML and DCL commands in SQL, Simple Queries
Week 9 (February 26 -March 2)	Nested Queries, Tables, Views, Indexes
Week 10 (March 4-9)	Aggregate Functions, Clauses
Week 11 (March 11-16)	PL/SQL architecture, PL/SQL and SQL*Plus, PL/SQL Basics, Advantages of PL/SQL
Week 12 (March 18-22)	Class Test
Week 13 (March 23-31)	Holi Break
Week 14 (April 1-6)	The Generic PL/SQL Block: PL/SQL Execution Environment, PL/SQL Character set and Data Types
Week 15 (April 8-13)	Control Structure in PL/SQL, Cursors in PL/SQL,Triggers in PL/SQL, Programming using PL/SQL
Week 16 (April 15-20)	Revision
Week 17 (April 22- 30)	Revision

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) EVEN Semester

Class: BCA 4th Sem Subject: Management Information System

Week 1 (January 1-6)	Introduction to system and Basic System Concepts, Types of Systems, The Systems Approach
Week 2 (January 8-13)	Information system: Definition and Characteristics, Types of Information, Role of Information in decision making
Week 3 (January 15-20)	Sub-Systems of an Information system: EDP and MIS Management levels, EDP/MIS/DSS.
Week 4 (January 22-27)	Definition & Characteristics, Components of MIS, Framework for Understanding MIS
Week 5 (January 29- February 3)	Information requirements & Levels of Management
Week 6 (February 5-10)	Formal vs Informal systems, Developing Information Systems: Analysis & Design of Information Systems
Week 7 (February 12-17)	Implementation & Evaluation, Pitfalls in MIS Development
Week 8 (February 19-23)	Simon's Model of decision-Making, Functional MIS
Week 9 (February 26 March 2)	Financial and production MIS
Week 10 (March 4-9)	Introduction to e-business systems
Week 11 (March 11-16)	Ecommerce – technologies applications
Week 12 (March 18-22)	Decision support systems
Week 13 (March 23-31)	Holi Break
Week 14 (April 1-6)	Support systems for planning
Week 15 (April 8-13)	Control and decision-making
Week 16 (April 15-20)	Structured Vs Unstructured decisions
Week 17 (April 22- 30)	Revision

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) EVEN Semester

Class:BCA 4th sem Subject:Computer oriented statistical methods(BCA-245)

Week 1 (January 1-6)	Basic Statistics: Preparing Frequency Distribution Table and Cumulative frequency,
Week 2 (January 8-13)	, Measure of Central Tendency, Types: Arithmetic mean, Geometric Mean, HarmonicMean,
Week 3 (January 15-20)	Median, Mode.
Week 4 (January 22-27)	Measure of Dispersion: Range, QuartileDeviation, mean deviation,
Week 5 (January 29- February 3)	Coefficient of mean Deviation, StandardDeviation
Week 6 (February 5-10)	Moments : Moments About mean, Moments about any point, Moment about origin, Moment about mean in terms of moment about any point, Moment about any point in terms of Moment about mean.
Week 7 (February 12-17)	Probability Distribution: Random Variable- Discrete Random and Continuous Random variable, Probability Distribution of a RandomVariable, Mathematical Expectation
Week 8 (February 19-23)	Types: Binomial, Poisson, Normal Distribution,Mean and Variance of Binomial, Poisson, and Normal Distribution.
Week 9 (February 26 March 2)	Correlation: Introduction, Types, Properties,Methods of Correlation: Karl Pearson's Coefficient of Correlation,
Week 10 (March 4-9)	Rank Correlation and Concurrent Deviationmethod, Probable error.
Week 11 (March 11-16)	Regression: Introduction, Aim of Regression Analysis, Types of Regression Analysis, Lines of Regression, Properties of Regression Coefficientand Regression Lines, Comparison with Correlation.
Week 12 (March 18-22)	Curve Fitting: Straight Line, Parabolic curve,Geometric Curve and Exponential Curve
Week 13 (March 23-31)	Holi Break
Week 14 (April 1-6)	Baye's Theorem in Decision Making, ForecastingTechniques
Week 15 (April 8-13)	Sample introduction, Sampling: Meaning, methods of Sampling, Statistical Inference: Test of Hypothesis, Types of hypothesis, Procedure of hypothesis Testing, Type I and Type II error, One Tailed and two tailed Test, Types of test of Significance: Test of significance for Attribute- Test of No. of success and test of proportion of success, Test of significance for large samples - Test of significance for single mean and Difference of mean, Test of significance for smallsamples (t-test) – test the significance betweenthe mean of a random sample, between the mean of two independent samples
Week 16 (April 15-20)	Chi square Test, ANOVA: Meaning, Assumptions,One way classification, ANOVA Table for One-Way Classified Data
Week 17 (April 22- 30)	Revision

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) EVEN Semester

Class: BCA II (4th Sem.) Subject: E-Commerce (BCA-243)

Week 1 (January 1-6)	Introduction to E-Commerce:-Business operations; E-commerce practices vs. Features of E-Commerce, Types of Ecommerce Systems.
Week 2 (January 8-13)	Elements of E-Commerce, principles of E-Commerce, Benefits and Limitations of E-Commerce, Management Issues relating to e-commerce.
Week 3 (January 15-20)	Operations of E-commerce: Credit card transaction. Secure Hypertext Transfer Protocol (SHTP), Electronic payment systems.
Week 4 (January 22-27)	(SET) SET`s encryption, Process, Cyber cash, Smart cards. Applications in governance: EDI in governance; E-government; E-Governance applications of Internet.
Week 5 (January 29- February 3)	concept of government –to- business, business-to-government and citizen-to-government-governance models
Week 6 (February 5-10)	Private sector interface in Egovernance.A applications in B2C: Consumers shopping procedure on the Internet
Week 7 (February 12-17)	Impact on disinter mediation and re-intermediation; Global market; Strategy of traditional department stores.
Week 8 (February 19-23)	Products in b2c model; success factors of e-brokers; Broker-based services ;travel tourism services; Benefits and impact of e-commerce on travel industry
Week 9 (February 26 March 2)	Online real-estate market; online stock trading and its benefits; Online banking and its benefits
Week 10 (March 4-9)	Online financial services and their future; E-auctions – benefits, implementation and impact.
Week 11 (March 11-16)	Applications in B2B: Key technologies for b2b; architectural models of b2b, characteristics of the supplier –oriented marketplace the supplier –oriented marketplace.
Week 12 (March 18-22)	Buyer-oriented marketplace and intermediary-oriented marketplace; Just In Time delivery in b2b
Week 13 (March 23-31)	Holi Break
Week 14 (April 1-6)	Internet-based EDI vs. traditional EDI; Marketing Issues in b2b.E merging Business models: Retail model
Week 15 (April 8-13)	Media model; advisory model, made-to-order manufacturing model; Do-it-yourself model; Information service model; Emerging hybrid models
Week 16 (April 15-20)	Emerging models in India, Internet & E-Commerce scenario in India; Internet security Issues; Legal aspects of E-commerce
Week 17 (April 22- 30)	Revision , Class Test.

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) EVEN Semester

Class: BCA IV SEM **Subject: Advanced Data Structures**

Week 1 (January 1-6)	Trees: Introduction, Definition, Representing binary tree in memory
Week 2 (January 8-13)	Traversing Binary Trees, traversal algorithms using stacks,
Week 3 (January 15-20)	Binary Search Tress : Introduction, Searching
Week 4 (January 22-27)	Binary Search Tress: Searching, Insertion, Deletion
Week 5 (January 29- February 3)	Huffman's Algorithm, General Trees
Week 6 (February 5-10)	Graphs: Introduction, Graph theory terminology
Week 7 (February 12-17)	Sequentials and linked representation of graph
Week 8 (February 19-23)	Operations on graphs
Week 9 (February 26 March 2)	Traversal algorithms in graphs and their implemetation,
Week 10 (March 4-9)	Dijkstra algorithm for shortest path, Warshall's algorithm for shortest path
Week 11 (March 11-16)	Sorting: Internal & External, Radix Sort
Week 12 (March 18-22)	Quick Sort, Heap Sort, Merge Sort ,Tournament Sort, Comparison of various sorting and searching algorithms on the basis of complexity
Week 13 (March 23-31)	Holi Break
Week 14 (April 1-6)	Files: Introduction, attributes of a file
Week 15 (April 8-13)	Classification of files, files operations, Comparison of various types of files
Week 16 (April 15-20)	File organization: Sequential, Indexed-sequential, Random access.
Week 17 (April 22- 30)	Hashing: Introduction, Collision resolution

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) EVEN Semester

Class: BCA 3rd Sem. **Subject: Advanced Prog. Using C++**

Week 1 (January 1-6)	Dynamic Polymorphism: Function Overriding
Week 2 (January 8-13)	Virtual Function and its Need, Pure Virtual function
Week 3 (January 15-20)	Abstract Class, Virtual Derivation
Week 4 (January 22-27)	Virtual Destructor, Type Conversion: Basic Type Conversion
Week 5 (January 29- February 3)	Conversion between objects and basic types
Week 6 (February 5-10)	Conversion between objects of different classes
Week 7 (February 12-17)	Inheritance Rules of Derivations Private, Protected and Public Derivations
Week 8 (February 19-23)	Different forms of Inheritance: Single, Multiple, Multilevel
Week 9 (February 26 March 2)	Hierarchical and Multipath Inheritance
Week 10 (March 4-9)	Roles of Constructors and Destructors in Inheritance
Week 11 (March 11-16)	Genericity in C++: Templates in C++
Week 12 (March 18-22)	Function templates
Week 13 (March 23-31)	Class templates in C++
Week 14 (April 1-6)	Holi Break
Week 15 (April 8-13)	Exception Handling in C++: try, throw and catch
Week 16 (April 15-20)	Files I/O in C++: Class Hierarchy for files I/O, Text versus Binary Files
Week 17 (April 22- 30)	Opening and Closing files, File Pointers, Operation on files.

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) ODD Semester

Class: BCA 5th Sem **Subject: Web Designing Fundamental (BCA-351)**

Week 1 (July 24-29)	
Week 2 (August 1-5)	
Week 3 (August 7-12)	Introduction to Internet and World Wide Web; Evolution and History of World Wide Web, Revision.
Week 4 (August 14-18)	Basic Features; Web Browsers; Revision.
Week 5 (August 21-26)	Web Servers; Hypertext Transfer Protocol; URLs; Searching
Week 6 (August 28- September 2)	Web-Casting Techniques; Search Engines and Search Tools
Week 7 (September 4 -9)	Steps for Developing Website; Choosing the Contents; Home Page; Domain Names;
Week 8 (September 11 -16)	Creating a Website; Web Publishing: Hosting Site;
Week 9 (September 18 -22)	Introduction to HTML; Hypertext and HTML; HTML Document Features; HTML Tags; Header, Title, Body, Paragraph, Ordered/Unordered Line
Week 10 (September 25 -30)	Creating Links; Headers; TextStyles; Text Structuring; Text Colors and Background; Formatting Text; Page layouts; Insertion of Text, Movement of Text
Week 11 (October 3-7)	Images: Types of Images, Insertion of Image, Movement of Image, Ordered and Unordered lists; Inserting Graphics; Table Handling
Week 12 (October 9-14)	Frame Creation and Layouts
Week 13 (October 16 - 21)	Working with Forms and menus Working with Buttons like Radio, Check Box, submit ,reset; Drop down menu
Week 14 (October 23-31)	Revision, Class test
Week 15 (November 2-9)	Sessional Exams
Week 16 (November 10-16)	Diwali Break
November 17	Sessional MDC

November 18	Revision / Distribution of sessional exams answer sheets
Week 17 (November 20-24)	Revision, Discussion

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) ODD Semester

Class: BCA 5th sem **Subject: Artificial Intelligence(BCA-353)**

Week 1 (July 24-29)	Artificial Intelligence : Intelligence, AI Concepts, Various definitions of AI, Knowledge, Knowledge Pyramid
Week 2 (August 1-5)	People and Computers: What computers can dobetter that people, what people can do better than computers; Characteristics of AI Problems,Problem Representation in AI,
Week 3 (August 7-12)	Components of AI, AI Evolution, ApplicationAreas of AI,
Week 4 (August 14-18)	History of AI, The Turing Test, The RevisedTuring Test
Week 5 (August 21-26)	Expert System: Components of Expert System:Knowledge Base, Inference Engine, User Interface, Features of Expert System, Expert System Life Cycle,
Week 6 (August 28-September 2)	Categories of Expert System, Rule Based vs.Model Based Expert Systems, Advantages/Limitations of Expert System
Week 7 (September 4 -9)	Developing an Expert System: Identification,Conceptualization, Formalization, Implementation, Testing, Using an Expert System, Application Areas of Expert System
Week 8 (September 11 -16)	AI and Search Process: Brute Force Search –Depth First/Breadth First Search, Heuristic Search: Hill Climbing
Week 9 (September 18 -22)	Constraint Satisfaction, Mean End Analysis,
Week 10 (September 25 -30)	Best First Search, A* Algorithm
Week 11 (October 3-7)	AO* Algorithm, Beam Search.
Week 12 (October 9-14)	Natural Language Processing: Introduction, Need, Goal, Fundamental Problems in NaturalLanguage Understanding
Week 13 (October 16 - 21)	How People overcome Natural Language Problems, Speech Recognition: Introduction, Advantages and Approaches,
Week 14 (October 23-31)	, Introduction to Robotics: Parts of a Robot, Controlling a Robot, Intelligent Robots, MobileRobots
Week 15 (November 2-9)	Sessional Exams
Week 16 (November 10-16)	Diwali Break
November 17	Sessional MDC
November 18	Revision / Distribution of sessional examsanswer sheets
Week 17 (November 20-24)	Class Test

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) ODD Semester

Class:B.C.A. 5th Sem. Subject: Programming Using Visual Basic

Week 1 (July 24-29)	Visual & Non-Visual programming, Procedural, Object-Based Programming Languages
Week 2 (August 1-5)	Event-Driven Programming Languages, VB as Even-Driven and Object-Based Language
Week 3 (August 7-12)	Menu bar, Toolbar, Project explorer, Toolbox, Properties Window, Form Designer
Week 4 (August 14-18)	Form Layout, Immediate window, Default Controls in Tool Box Visual Development
Week 5 (August 21-26)	Event Driven programming, Variables: Declaring Variables, Types of variables, Test
Week 6 (August 28- September 2)	Converting Variables Types, User Defined Data Types, Forcing Variable Declaration, Scope & Lifetime of Variables
Week 7 (September 4 -9)	Constants: Named & Intrinsic, Operators: Arithmetic, Relational & Logical operators,
Week 8 (September 11 -16)	Revision , Class Test
Week 9 (September 18 -22)	Input/output in VB: Various Controls for I/O, Message box, Input Box, Print statement.
Week 10 (September 25 -30)	Decision Statement and Looping Structure in Visual Basic
Week 11 (October 3-7)	Nested Control Structure; Arrays: Declaring and using Arrays, One-dimensional, Two-dimensional and Multi-dimensional Arrays
Week 12 (October 9-14)	Static and Dynamic arrays, Array of Arrays, General & Event Procedures, Subroutines, Functions, Calling Procedures
Week 13 (October 16 - 21)	Arguments - Passing Mechanisms, Optional Arguments, Named Arguments, Functions Returning Custom Data Types
Week 14 (October 23-31)	Optional Arguments, Named Arguments, Functions Returning Custom Data Types
Week 15 (November 2-9)	Sessional Exams
Week 16 (November 10-16)	Diwali Break
November 17	Sessional MDC
November 18	Revision / Distribution of sessional exams answer sheets
Week 17 (November 20-24)	Revision

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) ODD Semester

Class: BCA V Sem. **Subject: Multimedia Tools (BCA-356)**

Week 1 (July 24-29)	Multimedia: Basic Concept, Definition, Components & Applications of Multimedia; Hypermedia and Multimedia
Week 2 (August 1-5)	Multimedia Hardware and Software; Multimedia Software Tools; Presentation Tools
Week 3 (August 7-12)	Multimedia Authoring: Introduction, Features, Types of Authoring Tools: Card or Page-Based
Week 4 (August 14-18)	Icon Based, Time-Based, Object-Oriented; VRML: History, Features, Class Test
Week 5 (August 21-26)	Image Data Types, File Formats
Week 6 (August 28- September 2)	Colour Models in Images and Video; Assignment-1 Video: Introduction, Types of Video Signals; Analog and Digital Video, Analog Video Standards: NTSC,PAL,SECAM
Week 7 (September 4 -9)	Digital Video Standards: Chroma Sub sampling, CCIR Standards, HDTV , Class Test
Week 8 (September 11 -16)	Digital Audio: Basic Concepts, Analog vs. Digital Audio, Digitization of Sound; Digital Audio File Formats,
Week 9 (September 18 -22)	MIDI Quantization and Transmission of Audio: Coding of Audio; Pulse Code Modulation
Week 10 (September 25 -30)	Differential Coding of Audio; Lossless Predictive Coding; DPCM; DM; ADPCM, Revision
Week 11 (October 3-7)	Compression Techniques: Introduction, Types of Data Compression, Run-Length Coding
Week 12 (October 9-14)	Variable Length Coding, Dictionary-Based Coding, Transform Coding Image ,down sample chrominance components, DCT, Quantization
Week 13 (October 16 - 21)	Video Compression Techniques, Revision and Class Test ,Assignment-2 JPEG Standard for
Week 14 (October 23-31)	Image Compression; JPEG Mode, Video Compression Techniques: H.261, H.263, MPEG
Week 15 (November 2-9)	Sessional Exams
Week 16 (November 10-16)	Diwali Break
November 17	Sessional MDC
November 18	Revision / Distribution of sessional exams answer sheets
Week 17 (November 20-24)	Revision

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) ODD Semester

Class: BCA III (5th Sem.) Subject: Computer Network(BCA-354)

Week 1 (July 24-29)	Introduction to Data Communication and Computer Networks, Uses of Computer Networks, Types of Computer and Topologies
Week 2 (August 1-5)	Network Hardware Components, Connectors, Transceivers, Repeaters, Hubs, Network Interface Cards and PC Cards, Bridges, Switches, Routers, Gateways, Network Software: Network Design issues and Protocols, Connection-Oriented and Connectionless Services, OSI Reference Model
Week 3 (August 7-12)	Computer Hardware& software: I/o Devices, Relation Between Hardware& Software, Networking Models: Distributed Systems, Client/Server Model, Peer-to-Peer Model, Web-Based Model and Emerging File-Sharing Model
Week 4 (August 14-18)	Analog and Digital data and signals, Bandwidth and Data Rate, Capacity, Baud Rate, Transmission Impairment, Data Rate Limits
Week 5 (August 21-26)	Guided Transmission Media, Wireless Transmission , Communication Satellites, Switching and Multiplexing
Week 6 (August 28- September 2)	Modems and Modulation techniques, ADSL and Cable Modems.
Week 7 (September 4 -9)	Data Link Layer Design issues, Error Detection and Correction, Sliding Window Protocols: One-bit, Go Back N and Selective Repeat
Week 8 (September 11 -16)	Media Access Control: ALOHA, Slotted ALOHA, CSMA, Collision free protocols.
Week 9 (September 18 -22)	Introduction to LAN technologies: Ethernet, Switched Ethernet, Fast Ethernet, Gigabit Ethernet, Token Ring
Week 10 (September 25 -30)	Introduction to Wireless LANs and Bluetooth, VLANs
Week 11 (October 3-7)	Routing Algorithms: Flooding, Shortest Path Routing, Distance Vector Routing, Link State Routing, Hierarchical Routing,
Week 12 (October 9-14)	Congestion Control, Traffic shaping, Choke packets, Load shedding, Elements of Transport Protocols,
Week 13 (October 16 - 21)	Network Security Issues: Security attacks, Encryption methods, Digital Signature, Digital Certificate
Week 14 (October 23-31)	Revision
Week 15 (November 2-9)	Sessional Exams
Week 16 (November 10-16)	Diwali Break
November 17	Sessional MDC
November 18	Revision / Distribution of sessional exams answer sheets
Week 17 (November 20-24)	Revision.

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) ODD Semester

Class: BCA 5th Sem. **Subject: Operating System-I**

Week 1 (July 24-29)	Operating System: Definition, Characteristics, Components, Functions
Week 2 (August 1-5)	Types of Operating System: Single User/Multi User, Classification of Operating System: Batch, Multiprogramming, Timesharing, Multiprocessing, Parallel,, Distributed, Real Time
Week 3 (August 7-12)	System Calls and System Programs: Process Control, File Manipulation, Device Manipulation, Information Maintenance, Communications
Week 4 (August 14-18)	Process Management: Process concept, Process states and Process Control Block, Process Scheduling:
Week 5 (August 21-26)	Scheduling Queues, Schedulers, Context Switch; Operation on Processes: Process Creation
Week 6 (August 28- September 2)	Process Termination, Cooperating Processes, Introduction to Threads, Inter-process Communication
Week 7 (September 4 -9)	CPU Scheduling: Basic Concepts, Scheduling Criteria, Scheduling Algorithms: FCFS, SJF
Week 8 (September 11 -16)	Priority, Round-Robin, Multilevel Queue, Multilevel Feedback Queue Scheduling
Week 9 (September 18 -22)	Deadlocks: System Model, Deadlock Characterization, Methods of Handling Deadlocks, Deadlock Prevention
Week 10 (September 25 -30)	Deadlock Avoidance, Deadlock Detection and Recovery
Week 11 (October 3-7)	Memory Management: Introduction, Swapping, Contiguous Allocation: Single-Partition/Multiple Partition Allocation, External/Internal Fragmentation
Week 12 (October 9-14)	Paging: Basic Method, Hardware, Implementation of Page table, Segmentation: Basic Method, Hardware, Implementation of Segment Table, Advantages/Disadvantages of Paging/Segmentation
Week 13 (October 16 - 21)	Virtual Memory: Introduction, Demand Paging, Page Replacement, Page Replacement Algorithms: FIFO, Optimal, LRU, Counting, Thrashing and its cause
Week 14 (October 23-31)	File Management: File Concepts, File Attributes File Operations, File Types, File Access/Allocation Methods, File Protection, File Recovery
Week 15 (November 2-9)	Sessional Exams
Week 16 (November 10-16)	Diwali Break

November 17	Sessional MDC
November 18	Revision / Distribution of sessional exams answer sheets
Week 17 (November 20-24)	
Week 18 (November 28- December 2)	PG only
Week 19 (December 4- 6)	PG only

DYALSINGHCOLLEGE,KARNAL

LessonPlan(2023-24)EVENSemester

Class:BCA6th Semester Subject:Programmingincorejava(BCA-366)

Week1(January1-6)	Basic Principles of Object Oriented Programming,IntroductiontoJava,Historyand Features of Java,
Week2(January8-13)	Java Virtual Machine (JVM), Java's Magic Bytecode;TheJavaRuntimeEnvironment;Basic Language Elements: Lexical Tokens
Week3(January15-20)	Identifiers,Keywords,Literals,Comments, Primitive Data types, Operators,
Week4(January22-27)	Assignments;Input/outputinJava:Basics,I/O Classes, Reading Console Input, Control Structures in Java: Decision and Loop Control Statements
Week5(January29-February3)	ClassandObjectinJava:DefiningClassinJava, Creating ObjectsofaClass,Defining Methods, Argument Passing Mechanism,
Week6(February5-10)	Using Class and Objects, Constructors, Nested Class, Inner Class, Abstract Class, Dealing with StaticMembers;Array&StringinJava:Defining an Array, Initializing & Accessing Array, Multi – Dimensional Array, Defining String,
Week7(February12-17)	OperationonArrayandString,CreatingStrings using String Class, Creating Strings using StringBufferClass,;PolymorphisminJava:Basic Concept, Types, Overriding vs. Overloading, Implementation
Week8(February19-23)	Classtest
Week9(February26March2)	Extending Classes and Inheritance in Java: Benefits of Inheritance,Types of Inheritance in Java, Access Attributes, Inheriting Data MembersandMethods,RoleofConstructorsin Inheritance
Week10(March4-9)	Use of "super"; Packages & Interfaces: Basic Concepts of Package and Interface, Organizing Classes and Interfaces in Packages, Defining Package,AddingClassesfromaPackagetoYour Program, CLASSPATH Setting for Packages
Week11(March11-16)	Import Package, Naming Convention For Packages,AccessProtectioninPackages, Standard Packages
Week12(March18-22)	Exception Handling in Java: The Idea behind Exception,TypesofException,Useoftry,catch, finally,throw,throwsinExceptionHandling,In- built and User Defined Exceptions,
Week13(March23-31)	Holi Break
Week14(April1-6)	Checked and Un-Checked Exceptions, Catching morethanoneException;AppletinJava:Applet Basics, Applet Architecture, Applet Life Cycle, Applet Tag,
Week15(April8-13)	ParameterstoApplet,EmbeddingAppletsin Web page, Creating Simple Applets;
Week16(April15-20)	GUI Programming: Designing Graphical User InterfacesinJava,ComponentsandContainers, Using Containers
Week17(April22- 30)	LayoutManagers,AWTComponents,AWT Classes, AWT Controls,

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) EVEN Semester

Class: BCA 6th sem **Subject: Web Designing using Advanced Tools (BCA-361)**

Week 1 (January 1-6)	
Week 2 (January 8-13)	Interactivity Tool - JavaScript: Introduction, Features, Data types, Operators, Statements
Week 3 (January 15-20)	Functions, Event Handling, Use of Predefined Object and Methods, Frames, Windows, Tables
Week 4 (January 22-27)	Images, Links Interactivity Tool - VBScript: Introduction, Features, Variables, Data Types, Numeric and Literal
Week 5 (January 29- February 3)	Constants, Arrays, Operators, Subroutine Procedures, Function Procedures, Control Statements, Strings, Message and Input Boxes, Date and Time, Event Handlers, Embedding VBScript in HTML
Week 6 (February 5-10)	Interactivity Tool - Active Script Pages – Introduction, Features, Client-Server Model, Data Types, Decision Making Statements, Control statements,
Week 7 (February 12-17)	Use of Various Objects of ASP, Various Techniques of Connecting to Database, Other Interactivity, Tools - Macromedia Flash,
Week 8 (February 19-23)	Macromedia Dreamweaver, PHP: Basic Introduction and Features ,DHTML: Introduction, Features, Events
Week 9 (February 26 March 2)	Dynamic Positioning, Layer Object, Properties of STYLE, Dynamic Styles, Inline Styles, Event Handlers; Cascading Style Sheets (CSS): Basic Concepts
Week 10 (March 4-9)	Properties, Creating Style Sheets; Common Tasks with CSS: Text, Fonts, Margins, Links, Tables, Colors; Marquee; Mouseovers;

Week 11 (March 11-16)	Filters and Transitions; Adding Links; Adding Tables; Adding Forms; Adding Image and Sound; Use of CSS in HTML Documents Linking and Embedding of CSS in HTML Document
Week 12 (March 18-22)	Microsoft FrontPage: Introduction, Features, Title Bar, Menu bar, FrontPage Tool Bar, Style, Font FontFace and Formatting Bar, Scroll Bars, XML:
Week 13 (March 23-31)	Holi Break
Week 14 (April 1-6)	Introduction, Features, XML Support and Usage, Structure of XML Documents,
Week 15 (April 8-13)	XML, Creating Document Type Declarations, Flow Objects, Working with Text and Font, Color and Background Properties;
Week 16 (April 15-20)	Revision and Test
Week 17 (April 22- 30)	Revision and Test

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) EVEN Semester

Class: B.C.A. 6th Sem. Subject: Advanced Programming Using Visual Basic

Week 1 (January 1-6)	Adding, Removing, Counting, Returning Items in a Collection, Processing a Collection, Working with Forms: Form Properties, Creating, Adding, Removing Forms in Project, Adding Multiple Forms
Week 2 (January 8-13)	Managing Forms at Run Time, Hiding & Showing Forms, Load & Unload Statements, Drag and Drop Operation
Week 3 (January 15-20)	Activate & Deactivate events, Form-load event, Example using Forms, Programs in VB using Forms
Week 4 (January 22-27)	Menu Designing in VB**,** Adding a Menu to a Form, Modifying and Deleting Menu Items
Week 5 (January 29- February 3)	Adding Access Characters,Adding Shortcut Keys, Manipulating Menus using Common Dialog Box
Week 6 (February 5-10)	Attaching Code to Events, Creating Submenus, Dynamic Menu Appearance, Scroll Bar, Slider Control, Tree View, List View, Rich Text Box Control, Toolbar
Week 7 (February 12-17)	Status Bar, Progress Bar, Cool bar, Image List
Week 8 (February 19-23)	Program Development in VB using Menus and Advance Controls
Week 9 (February 26 March 2)	Revision , Class Test
Week 10 (March 4-9)	Sequential & Random files, Opening and Closing Data Files, Viewing the Data in a File, Performing Operations on a File
Week 11 (March 11-16)	Creating and Writing Data to a Sequential File, Reading the Data in a Sequential File, Finding the End of a Data File
Week 12 (March 18-22)	Locating a File, Reading and Writing a Random File (get, put, LOF, seek)
Week 13 (March 23-31)	Holi Break
Week 14 (April 1-6)	Using Paint, Line, Circle, Manipulating Graphics Program Development in VB using Files and Graphics, Data Controls, Data-Bound Controls, DAO, RDO, ADO, Creating the Database, Setting Properties
Week 15 (April 8-13)	Applying Operations on Database, Viewing the Database, Updating the Database (adding, deleting records)
Week 16 (April 15-20)	Revision
Week 17 (April 22- 30)	Class Test

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) EVEN Semester

Class: BCA 6th Sem. **Subject: Operating System-II**

Week 1 (January 1-6)	Process Synchronization: The Critical Section Problem – Single Process/Two Process Solutions
Week 2 (January 8-13)	Semaphores – Types, Implementation Deadlocks and Starvation
Week 3 (January 15-20)	Classical Problems of Synchronization – The Bounded Buffer Problem, The Readers and Writers Problem, The Dining Philosophers Problem, Critical Regions, Monitors
Week 4 (January 22-27)	Directory Structure: Single Level, Two Level, Tree Structures, Acyclic Graph, General Graph; Directory Implementation, Recovery
Week 5 (January 29- February 3)	Secondary Storage Structure: Disk Structure, Disk Scheduling: FCFS, SSTF, SCAN, C-SCAN, LOOK
Week 6 (February 5-10)	Selection of Disk Scheduling Algorithm; Disk Management; Swap Space Management Network, Operating Systems: Remote Login, Remote File Transfer
Week 7 (February 12-17)	Distributed Operating System: Data Migration, Computation Migration, Process Migration
Week 8 (February 19-23)	Linux: Introduction, Features, Architecture, Distributions, Accessing Linux System, Login/Logout/Shutting Down, Comparison of Linux with other Operating Systems
Week 9 (February 26 March 2)	Commands in Linux: General-Purpose Commands, File Oriented Commands, Directory Oriented Commands
Week 10 (March 4-9)	Communication Oriented Commands, Process Oriented Commands, Redirection of Input and Output, Pipes
Week 11 (March 11-16)	Linux File System: Types of Files in Linux, File Attributes, Structure of File System, i node, File Permission, File System Components Standard File System, File System Types, Disk Related
Week 12 (March 18-22)	Processes in Linux: Introduction job Control in Linux using at, batch, corn & time command
Week 13 (March 23-31)	The vi editor: Introduction, Modes of vi Editor, Command in vi Editor
Week 14 (April 1-6)	Holi Break
Week 15 (April 8-13)	Shell Programming: Introduction, Shell Variables, Shell Keywords, Operators
Week 16 (April 15-20)	Assigning Values to the Variables, I/O in Shell, Control Structures
Week 17 (April 22- 30)	Creating & Executing Shell Programs in Linux

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) ODD Semester

Class: B.Sc. 1st Sem **Subject: Programming in C**

Week 1 (July 24-29)	Overview of C: History of C , Importance of C , Structure of a C Program, Character Set, Identifiers, Keywords
Week 2 (August 1-5)	Constants and Variables , Assignment statement , Symbolic constant, scanf(), printf()
Week 3 (August 7-12)	putch(), putchar(), puts(), getch() , getche(), getchar(), gets()
Week 4 (August 14-18)	Arithmetic, relational logical, bitwise, unary, assignment, conditional operators, special operators
Week 5 (August 21-26)	Arithmetic expressions, evaluation of arithmetic expression, Typecasting and conversion
Week 6 (August 28-September 2)	Operator hierarchy & associativity,Decision making with IF statement, IF-ELSE statement,Nested IF statement
Week 7 (September 4 -9)	ELSE-IF ladder, switch statement, goto statement
Week 8 (September 11 -16)	Decision making & looping: For, while, do-while loop
Week 9 (September 18 -22)	Jump Statements: break, continue statement
Week 10 (September 25 -30)	Functions: Definition, prototype
Week 11 (October 3-7)	Passing parameters , Recursion
Week 12 (October 9-14)	Arrays: Definition, types, initialization, processing an array
Week 13 (October 16 - 21)	Strings, Structures and Unions
Week 14 (October 23-31)	Pointers in C
Week 15 (November 2-9)	Sessional Exams
Week 16 (November 10-16)	Diwali Break
November 17	Sessional MDC
November 18	Revision / Distribution of sessional exams answer sheets
Week 17 (November 20-24)	Revision

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) ODD Semester

Class:B.Sc First Year(Minor) **Subject:Basics of Comp.Sc.**

Week 1 (July 24-29)	Introduction to Computers: Definition of Computers, History and Generations of Computers
Week 2 (August 1-5)	Characteristics of computer, Classification of Computers
Week 3 (August 7-12)	Fundamental Block diagram of Computer: CPU, Input & Output Unit
Week 4 (August 14-18)	Revision ,Discussion of problems
Week 5 (August 21-26)	Software: Definition of Software, Types of Software- System software
Week 6 (August 28- September 2)	Application software and Utility software. Types of Computer Languages, Assemblers, Interpreters, Compiler
Week 7 (September 4 -9)	Revision
Week 8 (September 11 -16)	Introduction to OperatingSystems: Types of Operating System, Functions of Operating System. Windows: Introduction to Windows, Starting Windows, Desk Top, Task Bar, Opening and closing applications,
Week 9 (September 18 -22)	iconscreating, renaming and removing. Date and Time setting, Working with files and folders-creating, deleting, opening, finding, copying, moving, and renaming.
Week 10 (September 25 -30)	Revision, Class test
Week 11 (October 3-7)	Networking: Concept, Basic Elements of a Communication System, Data Transmission Media, LAN, MAN, WAN
Week 12 (October 9-14)	Revision, Class test
Week 13 (October 16 - 21)	Introduction of Internet and WWW, Basic working of a Web Browser, Introduction to popular web browsers.
Week 14 (October 23-31)	Revision, Class test
Week 15 (November 2-9)	Sessional Exams
Week 16 (November 10-16)	Diwali Break
November 17	Sessional MDC
November 18	Revision / Distribution of sessional exams answer sheets
Week 17 (November 20-24)	Revision,Discussion

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) ODD Semester

Class: B.Sc. III Sem. **Subject: Data structures**

Week 1 (July 24-29)	Introduction: Elementary data organization, Data Structure definition, Data type vs. data structure, Categories of data structures, Data structure operators.
Week 2 (August 1-5)	Applications of data structures, Algorithms complexity and time-space trade off, Big-O notation.
Week 3 (August 7-12)	Strings: Introduction, strings, String operations, Pattern matching algorithms
Week 4 (August 14-18)	Arrays: Introduction, Linear arrays, Representation of linear array in memory, Traversal, Insertions, Deletion in an array
Week 5 (August 21-26)	Multidimensional arrays, Parallel arrays, Sparse matrix. Linked List: Introduction, Array vs. linked list.
Week 6 (August 28- September 2)	Representation of linked lists in memory, Traversal, Insertion.
Week 7 (September 4 -9)	Deletion, Searching in a linked list, Header linked list, Circular linked list.
Week 8 (September 11 -16)	Two-way linked list, Garbage collection, Applications of linked lists. Algorithm of insertion/ deletion in SLL.
Week 9 (September 18 -22)	Stack: primitive operation on stack, algorithms for push and pop. Representation of Stack as Linked List and array, Stacks applications : polish notation.
Week 10 (September 25 -30)	Recursion. Introduction to queues, Primitive Operations on the Queues, Circular queue.
Week 11 (October 3-7)	Priority queue, Representation of Queues as Linked List and array, Applications of queue.
Week 12 (October 9-14)	Algorithm on insertion and deletion in simple queue and circular queue.
Week 13 (October 16 - 21)	Trees - Basic Terminology, representation, Binary Trees, Tree Representations using Array & Linked List. Basic operation on Binary tree, Traversal of binary trees:- In order, Preorder & post order.
Week 14 (October 23-31)	Applications of Binary tree. Algorithm of tree traversal with and without recursion. Introduction to graphs, Definition, Terminology, Directed, Undirected & Weighted graph, Representation of graphs.
Week 15 (November 2-9)	Sessional Exams
Week 16 (November 10-16)	Diwali Break
November 17	Sessional MDC
November 18	Revision / Distribution of sessional exams answer sheets
Week 17 (November 20-24)	Revision.

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) ODD Semester

Class: B.Sc. (C.S.) III Sem. **Subject: Software Engineering**

Week 1 (July 24-29)	Introduction: Program vs. Software, Software Engineering, Programming paradigms, Software Crisis – problem and causes.
Week 2 (August 1-5)	Phases in Software development: Requirement Analysis, Software Design, Coding, Testing, Maintenance.
Week 3 (August 7-12)	Software Development Process Models: Waterfall, Prototype, Evolutionary and Spiral models, Role of Metrics.
Week 4 (August 14-18)	Feasibility Study, Software Requirement Analysis and Specifications: SRS, Need for SRS
Week 5 (August 21-26)	Characteristics of an SRS, Components of an SRS, Problem Analysis, Information gathering tools.
Week 6 (August 28- September 2)	Organising and structuring information
Week 7 (September 4 -9)	Requirement specification, validation and metrics.
Week 8 (September 11 -16)	Structured Analysis and Tools: Data Flow Diagram, Data Dictionary, Decision table, Decision trees, Structured English.
Week 9 (September 18 -22)	Entity-Relationship diagrams .Software Project Planning: Cost estimation: COCOMO model.
Week 10 (September 25 -30)	Project scheduling, Staffing and personnel planning, team structure.
Week 11 (October 3-7)	Software configuration management, Quality assurance plans. Project monitoring plans,
Week 12 (October 9-14)	Project monitoring plans, Risk Management, Software testing strategies: unit testing, integration testing, V and V , System testing, Alpha and Beta testing
Week 13 (October 16 - 21)	Black box, white box testing. Cycloamic Complexity. Software Implementation and Maintenance: Type of maintenance, Management of Maintenance.
Week 14 (October 23-31)	Maintenance Process, maintenance characteristics.
Week 15 (November 2-9)	Sessional Exams
Week 16 (November 10-16)	Diwali Break
November 17	Sessional MDC
November 18	Revision / Distribution of sessional exams answer sheets
Week 17 (November 20-24)	Revision.

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) EVEN Semester

Class: B.Sc. (C.S.) II (4th Sem.) Subject: Paper-II: Operating System

Week 1 (January 1-6)	Introduction: operating system, architecture, functions, characteristics, Historical evolution.
Week 2 (January 8-13)	Types: Serial batch, multiprogramming, time sharing, real time, distributed and parallel. OS as resource Manager
Week 3 (January 15-20)	Computer system structures: I/O structure, storage structure, storage hierarchy.
Week 4 (January 22-27)	Operating system structure: system components, services, system calls, system programs, system structures.
Week 5 (January 29- February 3)	Process management: process concepts, process state, process control block, operations, process scheduling.
Week 6 (February 5-10)	Inter process communication.
Week 7 (February 12-17)	CPU Scheduling: scheduling criteria, levels of scheduling, scheduling algorithms, multiple processor scheduling 8 March
Week 8 (February 19-23)	Deadlocks: Characterization, methods of handling, deadlock detection, prevention, avoidance, recovery
Week 9 (February 26 March 2)	Storage Management: memory management of single-user and multiuser operating system, partitioning, swapping,
Week 10 (March 4-9)	Paging and segmentation, virtual memory
Week 11 (March 11-16)	Page replacement Algorithms, Thrashing.
Week 12 (March 18-22)	Process synchronization: critical section problems, semaphores. Mutual exclusion
Week 13 (March 23-31)	Holi Break
Week 14 (April 1-6)	Device and file management: Disk scheduling, Disk structure, Disk management
Week 15 (April 8-13)	File Systems: Functions of the system , File access and allocation methods.
Week 16 (April 15-20)	Directory Systems: Structured Organizations, directory and file protection mechanisms
Week 17 (April 22- 30)	Revision

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) EVEN Semester

Class: B.sc. IV Sem **Subject: Paper-I: Object Oriented Programming With 'C++'**

Week 1 (January 1-6)	Object oriented Programming: Object-Oriented programming features and benefits. Object-Oriented features of C++
Week 2 (January 8-13)	2 Jan.30-Feb. 4,2023 Class and Objects, Data Hiding & Encapsulation, Structures, Data members and Member functions, Scope resolution operator and its significance.
Week 3 (January 15-20)	Static Data Members, Static member functions, Nested and Local Class, Accessing Members of Class and Structures
Week 4 (January 22-27)	Constructor, Initialization using constructor, types of constructor– Default, Parameterized & Copy Constructors, Constructor overloading
Week 5 (January 29- February 3)	Default Values to Parameters, Destructors
Week 6 (February 5-10)	Console I/O: Hierarchy of Console Stream Classes, Unformatted and Formatted I/O Operations
Week 7 (February 12-17)	String Handling in C++
Week 8 (February 19-23)	Dynamic Memory Management: Pointers, new and delete Operator, Array of Pointers to Objects,
Week 9 (February 26 March 2)	this Pointer, Passing Parameters to Functions by Reference & pointers ,
Week 10 (March 4-9)	Static Polymorphism: Operators in C++,
Week 11 (March 11-16)	Function Overloading
Week 12 (March 18-22)	Inline Functions,
Week 13 (March 23-31)	Holi Break
Week 14 (April 1-6)	Precedence and Associativity Rules, Operator Overloading, Unary & Binary Operators Overloading
Week 15 (April 8-13)	Merits/Demerits of Static Polymorphism
Week 16 (April 15-20)	Revision
Week 17 (April 22- 30)	Revision

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) ODD Semester

Class:Bsc 5th sem Subject: Web Designing

Week 1 (July 24-29)	Introduction to Internet and World Wide Web; Evolution and History of World Wide Web
Week 2 (August 1-5)	Basic Features; Web Browsers; Web Servers; Hypertext Transfer Protocol
Week 3 (August 7-12)	URLs; Searching and WebCasting Techniques; Search Engines and Search Tools
Week 4 (August 14-18)	Steps for Developing Website; Choosing the Contents; Home Page
Week 5 (August 21-26)	Domain Names; Internet Service Provider; Planning and Designing Web Site
Week 6 (August 28- September 2)	Creating a Website; Web Publishing: Hosting Site
Week 7 (September 4 -9)	Introduction to HTML; Hypertext and HTML; HTML Document Features
Week 8 (September 11 -16)	HTML Tags; Header, Title, Body, Paragraph, Ordered/Unordered Line
Week 9 (September 18 -22)	Creating Links; Headers; Text Styles; Text Structuring; Text Colors and Background
Week 10 (September 25 -30)	Formatting Text; Page layouts; Insertion of Text, Movement of Text
Week 11 (October 3-7)	Images: Types of Images, Insertion of Image, Movement of Image
Week 12 (October 9-14)	Images: Types of Images, Insertion of Image, Movement of Image
Week 13 (October 16 - 21)	Ordered and Unordered lists; Inserting Graphics; Table Handling Functions like Columns, Rows, Width
Week 14 (October 23-31)	Frame Creation and Layouts
Week 15 (November 2-9)	Frame Creation and Layouts
Week 16 (November 10-16)	Working with Forms and Menus
November 17	Working with Buttons like Radio, Check Box
November 18	Revision
Week 17 (November 20-24)	Sessional

Class BSc III(5th Sem) Subject:Fundamentals of DBMS Systems

Odd Sem	Topic s
Week 1 (July 24-29)	Basic Concepts – Data, Information, Records and files. Traditional file Based Approach
Week 2 (August 1-5)	Limitations of Traditional File Based Approach, Database Approach- Characteristics of Database Approach
Week 3 (August 7-12)	Database Management System (DBMS), Components of DBMS Environment, DBMS Functions and Components, Advantages of DBMS
Week 4 (August 14-18)	Disadvantages of DBMS. Actors on the Scene - Data and Database Administrator, Database Designers
Week 5 (August 21-26)	End users Applications Developers and Workers behind the Scene. Database System Architecture – Three Levels of Architecture
Week 6 (August 28-September 2)	Schemas – External, Conceptual and Internal Level, Database Languages – VDL, DDL, SDL, DML, SQL, Mappings – External/ Conceptual
Week 7 (September 4 -9)	Conceptual/Internal mapping,Instances, Data Independence – Logical and Physical Data Independence
Week 8 (September 11 -16)	Data Models: High Level, Low Level and Representational – Records- based Data Models
Week 9 (September 18 -22)	Object-based Data Models, Physical Data Models and Conceptual Models Entity-Relationship Model – Concepts, Entity Types, Entity Sets.
Week 10 (September 25 -30)	Attributes, Relationships,Constraints, Keys , Degree, Cardinality etc. ER Diagrams of any Database Organization.
Week 11 (October 3-7)	Inventory System, Payroll System,Reservation System, Online Book Store etc.
Week 12 (October 9-14)	Classification of Database Management System, Centralized and Client Server architecture
Week 13 (October 16 - 21)	Relational Data Model:-Brief History, Terminology in Relational Data Structure, Relations, Properties of Relations,
Week 14 (October 23-31)	Keys – Primary, Secondary, Composite, Candidate Keys
Week 15 (November 2-9)	Alternate and Foreign Key, Domains, Integrity Constraints over Relations.
Week 16 (November 10-16)	Revision
November 17	Sessional
November 18	Revision
Week 17 (November 20-24)	Test

CLASS-B.Sc.III
(6thSem.)
Paper-I:Computer networks

Week	**Topics**
Week1(January1-6)	Introductionto DataCommunicationandComputerNetworks;UsesofComputerNetworks; TypesofComputer Networks
Week2(January8-13)	Topologies;NetworkHardwareComponents:Connectors,Transceivers,Repeaters,Hubs,NetworkInterfaceCards
Week3(January15-20)	PCCards,Bridges,Switches,Routers,Gateways;NetworkSoftware:
Week4(January22-27)	NetworkDesignissuesandProtocols;Connection-OrientedandConnectionlessServices;
Week5(January29-February3)	OSIReferenceModel;TCP/IPModel;
Week6(February5-10)	AnalogandDigitalCommunicationsConcepts:AnalogandDigitaldataandsignals;
Week7(February12-17)	BandwidthandDataRate,Capacity,BaudRate;GuidedandWirelessTransmissionMedia
Week8(February19-23)	CommunicationSatellites;SwitchingandMultiplexing;Modemsandmodulationtechniques
Week9(February26March2)	DataLinkLayerDesignissues;ErrorDetectionandCorrectionmethods;
Week 10 (March4-9)	SlidingWindowProtocols:One-bit,GoBackNandSelectiveRepeat;MediaAccessControl:ALOHA,SlottedALOHA
Week 11(March11-16)	CSMA,Collisionfreeprotocols;IntroductiontoLANtechnologies:Ethernet,SwitchedEthernet
Week 12(March18-22)	FastEthernet,GigabitEthernet;TokenRing;IntroductiontoWirelessLANsandBluetooth
Week13(March23-31)	RoutingAlgorithms:Flooding, ShortestPathRouting,DistanceVectorRouting
Week14(April1-6)	LinkStateRouting,HierarchicalRouting;CongestionControl;Trafficshaping;Chokepackets
Week15(April8-13)	Loadshedding;ApplicationLayer:IntroductiontoDNS,E-MailandWWWservices
Week16(April15-20)	NetworkSecurityIssues:Securityattacks;Encryptionmethods;Firewalls;DigitalSignatures;
Week17(April22-30)	Revision,Test

CLASS-B.Sc.III(6thSem.)	Paper-I: RelationalDatabaseManagement Systems
Week	**Topics**
Week1(January1-6)	RelationalModelConcepts,Codd'sRulesforRelationalModel,HierarchicalD ataModel–Introduction
Week2(January8-13)	Features,Components,Example,NetworkDataModel–Introduction,Features,Components
Week3(January15-20)	Example,DifferencesbetweenHierarchicalDataModelandNetwork DataMo del
Week4(January22-27)	ComparisonofRelationalDataModelwithHierarchicalDataModeland Netwo rkDataModel
Week5(January29-February3)	RelationalAlgebra:-SelectionandProjection,SetOperation,JoinandDivision.
Week6(February5-10)	RelationalCalculus:TupleRelationalCalculusand DomainRelationalCalculus.
Week7(February12-17)	FunctionalDependenciesandNormalization--Purpose,DataRedundancy,UpdateAnomalies
Week8(February19-23)	Partial/FullyFunctionalDependencies,TransitiveFunctionalDependencies, CharacteristicsofFunctionalDependencies
Week9(February26March2)	DecompositionandNormalForms(1NF,2NF,3NF&BCNF).
	SQL:DataDefinitionanddatatypes,CreateTable,InsertData,Viewing Data,F ilteringTable
Week 11(March11-16)	Data,Sortingdata,CreatingTablefromaTable,Destroytable,Update, View,D elete,Join,
Week 12(March18-22)	Concatenatingdata,PrimaryKey, ForeignKeyUniqueKey,CheckConstraint,UsingFunctions
Week13(March23-31)	PL/SQL-Introduction,AdvantagesofPL/SQLTheGenericPL/SQLBlock:PL/SQLExe cutionEnvironment
Week14(April1-6)	PL/SQLCharacterSetandDataTypes,DeclarationandAssignmentof Variab les
Week15(April8-13)	ControlStructureinPL/SQL:ConditionalControl,IterativeControl,Sequential Control
Week16(April15-20)	Revision
Week17(April22-30)	Test

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) ODD Semester

CLASS- M.Com. II (3 rd Sem.) ,Subject- Computer Applications in Business

Week 1 (July 24-29)	Computer System: Meaning, scope, types
Week 2 (August 1-5)	Basic computer organization: Central Processing Unit, input, output
Week 3 (August 7-12)	storage devices; Introduction to software; System software
Week 4 (August 14-18)	operating system, user interface and its types; Application software - word processing
Week 5 (August 21-26)	spreadsheets; Introduction to databases, tables, queries, report
Week 6 (August 28- September 2)	form generation, Information Technology in Business: Concept of information technology
Week 7 (September 4 -9)	Local Area Network, MAN, Wide Area Network
Week 8 (September 11 -16)	Network Topologies, Electronic data processing
Week 9 (September 18 -22)	Various Transmission media
Week 10 (September 25 -30)	Intranet and extranet, EDI concept and evolution
Week 11 (October 3-7)	World Wide Web; Multimedia technologies
Week 12 (October 9-14)	Video conferencing, Broadband networks, Planning and designing web pages
Week 13 (October 16 - 21)	Fuzzy Logic, Fuzzy operations, Applications , Advantages & limitations
Week 14 (October 23-31)	Revision and class Test
Week 15 (November 2-9)	Sessional Exams
Week 16 (November 10-16)	Diwali Break
November 17	Sessional MDC
November 18	Revision / Distribution of sessional exams answer sheets
Week 17 (November 20-24)	Revision and class Test
Week 18 (November 28- December 2)	Revision and class Test
Week 19 (December 4- 6)	Revision and class Test

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) EVEN Semester

CLASS- M.Com. II (4th Sem.),Subject- - IT and E-Commerce

Week 1 (January 1-6)	Introduction to E-commerce: Meaning of electronic commerce, business applications of e-commerce
Week 2 (January 8-13)	comparison with traditional commerce; Business models in E-commerce
Week 3 (January 15-20)	e-shops, e-procurement, e-auctions, value chain integrators
Week 4 (January 22-27)	information brokerage, telecommunication, collaboration platforms
Week 5 (January 29- February 3)	Electronic payment system; E-Banking –concept, operations
Week 6 (February 5-10)	Online fund transfer – RTGC, ATM, etc., Online share market operations
Week 7 (February 12-17)	Online marketing, Web-based advertising – concept, advantages; Types of online advertisements
Week 8 (February 19-23)	Search engine – as an advertising media, search engine optimisation – concept and techniques
Week 9 (February 26 March 2)	Email marketing; Social Networking and marketing – promotion, opinion formulation
Week 10 (March 4-9)	Viral Marketing, E-retailing-concept, advantages, limitations
Week 11 (March 11-16)	CRM and Information Technology, Tools to conducting online research – secondary research
Week 12 (March 18-22)	online focus groups, web based surveys, data mining from social networking sites
Week 13 (March 23-31)	Holi Break
Week 14 (April 1-6)	Cloud computing – Concept, uses in business; Enterprise Resource Planning
Week 15 (April 8-13)	Security issues in e-commerce - Online frauds, Privacy issues
Week 16 (April 15-20)	Cyber laws including Information Technology Act
Week 17 (April 22- 30)	Revision , Test

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) ODD Semester

Class: B.Com 1st semester Subject: MDC (Computer)

Week 1 (July 24-29)	Evolution of computers through generations
Week 2 (August 1-5)	Characteristics of computers
Week 3 (August 7-12)	Strengths and limitations of computers
Week 4 (August 14-18)	Types of software:System software ,application software and utility software
Week 5 (August 21-26)	Functional components of computer
Week 6 (August 28- September 2)	Applications opf computer in various areas
Week 7 (September 4 -9)	Measuring units of storage capacity , Concept of memory hierarchy
Week 8 (September 11 -16)	RAM,ROM,PROM AND EPROM
Week 9 (September 18 -22)	Types of storage devices
Week 10 (September 25 -30)	Input and output devices
Week 11 (October 3-7)	Features of operating system
Week 12 (October 9-14)	Functions of control panel
Week 13 (October 16 - 21)	Working of internet ,modes of connecting to internet
Week 14 (October 23-31)	Components of email,browser,search engine
Week 15 (November 2-9)	Sessional Exams
Week 16 (November 10-16)	Diwali Break
November 17	Sessional MDC
November 18	Revision / Distribution of sessional exams answer sheets

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) ODD Semester

Class: BCA 1st Sem. **Subject: Essentials of Python (SEC)**

Week 1 (July 24-29)	Keywords and Identifiers; Comments: Purpose/use of comments, Single line comment/Multiline comment; Python Variables: Declaration of Variables
Week 2 (August 1-5)	Assign Values to Variables, Initialization, Reading, Variable naming restrictions, and Types of Python Variables
Week 3 (August 7-12)	Python Data Types: Implicit Declaration of Data Types, Python Numbers (Integers, floating-point numbers, and complex numbers), Python Strings, Python Boolean data type
Week 4 (August 14-18)	Operators: Arithmetic, Comparison/Relational Operators, Increment Operators, Logical operators, Identity Operators, and Operators Precedence.
Week 5 (August 21-26)	Python Control Flow Statement, Decision Making: Simple If Structure, if-else structure, if elif structure, and nested if Structure
Week 6 (August 28- September 2)	Looping: Python Loop Statements, Python while loop, Python for loop, Python range(), Python Nested Loop Structures, and Inserting conditions in Loops and vice versa
Week 7 (September 4 -9)	Python Branching Statements – break, continue, pass
Week 8 (September 11 -16)	Python Lists: Create Python Lists, Update Python Lists, Delete Elements from Python Lists, and Built-in Functions Methods for Python Lists.
Week 9 (September 18 -22)	Tuples: create, update, join and methods; Sets: create, add/remove items, join sets, set methods
Week 10 (September 25 -30)	Dictionary: create, access, add/remove items, dictionary methods. Manipulating
Week 11 (October 3-7)	Strings: Working with Strings, Useful String Methods
Week 12 (October 9-14)	Python Functions: defining function, arbitrary arguments, keywords arguments, default parameter values, return value and return statements
Week 13 (October 16 - 21)	Lambda, Arrays: looping through array elements, array methods
Week 14 (October 23-31)	Exception handling: Handling Exceptions (try, except), Raising Exceptions (raise), Clean-up Actions (try… finally), Else Clause, Assert statements

Week 15 (November 2-9)	Sessional Exams
Week 16 (November 10-16)	Diwali Break
November 17	Sessional MDC
November 18	Revision / Distribution of sessional exams answer sheets
Week 17 (November 20-24)	
Week 18 (November 28- December 2)	PG only
Week 19 (December 4- 6)	PG only

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) ODD Semester

Class:B.Sc First year Subject: Essentials of Python(SEC)

Week 1 (July 24-29)	Keywords and Identifiers; Comments: Purpose/use of comments, Single line comment/Multiline comment
Week 2 (August 1-5)	Python Variables: Declaration of Variables, Assign Values to Variables, Initialization
Week 3 (August 7-12)	Reading, Variable naming restrictions, and Types of Python Variables.
Week 4 (August 14-18)	**Python Data Types:** Implicit Declaration of Data Types, Python Numbers (Integers, floating-point numbers, and complex numbers), Python Strings, Python boolean data type
Week 5 (August 21-26)	**Operators:** Arithmetic, Comparison/Relational Operators, Increment Operators, Logical operators, Identity Operators, and Operators Precedence
Week 6 (August 28- September 2)	Revision ,Class test, Discussion of problems
Week 7 (September 4 -9)	Python Control Flow Statement, Decision Making: Simple If Structure, if-else structure, if elif structure, and nested If Structure;
Week 8 (September 11 -16)	**Looping:** Python Loop Statements. Python while loop, Python for loop, Python range(), Python Nested Loop Structures, and Inserting conditions in Loops and vice versa; Python Branching Statements – break, continue, pass.
Week 9 (September 18 -22)	Revision, Discussion of problems
Week 10 (September 25 -30)	**Python Lists:** Create Python Lists, Update Python Lists, Delete Elements from Python Lists, and Built-in Functions Methods for Python Lists. **Tuples:** create, update, join and methods; Sets: create, add/remove items, join sets, set methods;
Week 11 (October 3-7)	**Dictionary:** create, access, add/remove items, dictionary methods. **Strings** - Working with Strings, Useful String Methods
Week 12 (October 9-14)	Revision, Class test
Week 13 (October 16 - 21)	**Python Functions:** defining function, arbitrary arguments, keywords arguments, default parameter values, return value and return statements; Lambda; Arrays: looping through array elements, array methods
Week 14 (October 23-31)	**Exception handling:** Handling Exceptions (try, except), Raising Exceptions (raise), Clean-up Actions (try… finally), Else Clause, Assert statements
Week 15 (November 2-9)	Sessional Exams
Week 16 (November 10-16)	Diwali Break
November 17	Sessional MDC
November 18	Revision / Distribution of sessional exams answer sheets
Week 17 (November 20-24)	Revision, Discussion of problems

DYAL SINGH COLLEGE, KARNAL

Lesson Plan (2023-24) ODD Semester

Class:B.Com 1st Sem. Subject: Advance Spreadsheet Tools

Week 1 (July 24-29)	Manage Workbook Options and Settings: Create Worksheets and Workbooks
Week 2 (August 1-5)	Navigate in Worksheets and Workbooks, Format Worksheets and Workbooks
Week 3 (August 7-12)	Customize Options and Views for Worksheets and Workbooks, Configure Worksheets and Workbooks for Distribution
Week 4 (August 14-18)	Apply Custom Data Formats and Layouts: Apply Custom Data Formats and Validation
Week 5 (August 21-26)	Apply Advanced Conditional Formatting and Filtering, Create and Modify Custom Workbook Elements
Week 6 (August 28- September 2)	Create Tables: Create and Manage Tables, Manage Table Styles and Options, Filter and Sort a Table
Week 7 (September 4 -9)	Perform Operations with Formulas and Functions: Summarize Data by using Functions
Week 8 (September 11 -16)	Revision, Class Test
Week 9 (September 18 -22)	Perform Conditional Operations by using Functions, Format and Modify Text by using Functions
Week 10 (September 25 -30)	Create Charts and Objects: Create Charts, Format Charts, Insert and Format Objects
Week 11 (October 3-7)	Manage Workbook Options and Settings: Manage Workbooks, Manage Workbook Review Restrict editing
Week 12 (October 9-14)	Create Advanced Formulas: Apply Functions in Formulas, Look up data by using Functions
Week 13 (October 16 - 21)	Apply Advanced Date and Time Functions, Perform Data Analysis and Business Intelligence, Define Named Ranges and Objects
Week 14 (October 23-31)	Create Advanced Charts and Tables: Create and Manage PivotTables, Create and Manage Pivot Charts
Week 15 (November 2-9)	Sessional Exams
Week 16 (November 10-16)	Diwali Break
November 17	Sessional MDC
November 18	Revision / Distribution of sessional exams answer sheets
Week 17 (November 20-24)	Revision
Week 18 (November 28- December 2)	Revision