

GOVT. COLLEGE FOR GIRLS, PALWAL, KURUKSHETRA

DEPARTMENT OF COMPUTER SCIENCE

LESSON PLAN

Name: Dr. Komal

Subject: Programming in Core Java

Course/Semester – BCA/6th

Sub Code: BCA-366

Week	Date	Topics To Be Covered
1	01-01-2025 to 12-01-2025	UNIT-1: Basic Principles of Object Oriented Programming, Introduction to Java, History and Features of Java, Java Virtual Machine (JVM), Java's Magic Bytecode;
2	13-01-2025 to 19-01-2025	The Java Runtime Environment; Basic Language Elements: Lexical Tokens, Identifiers, Keywords, Literals, Comments, Primitive Data types,
3	20-01-2025 to 26-01-2025	Operators, Assignments, Input/output in Java: Basics, I/O Classes, Reading Console Input Assignment-1
4	27-01-2025 to 02.02.2025.	Control Structures in Java: Decision and Loop Control Statements
5	03.02.2025 to 09.02.2025	UNIT-2: Class and Object in Java: Defining Class in Java, Creating Objects of a Class, Defining Methods, Argument Passing Mechanism, Using Class and Objects, Constructors, Nested Class, Inner Class, Abstract Class
6	10.02.2025 to 16.02.2025	Dealing with Static Members; Array & String in Java: Defining an Array, Initializing & Accessing Array, Multi-Dimensional Array, Defining String,
7	17.02.2025 to 23.02.2025	Operation on Array and String, Creating Strings using String Class, Creating Strings using StringBuffer Class,; Polymorphism in Java: Basic Concept, Types, Overriding vs. Overloading, Implementation Test-1
8	24.02.2025 to 02.03.2025	UNIT-3: Extending Classes and Inheritance in Java: Benefits of Inheritance, Types of Inheritance in Java, Access Attributes, Inheriting Data Members and Methods, Role of Constructors in Inheritance;
9	03.02.2025 to 08.04.2025	Use of "super"; Packages & Interfaces: Basic Concepts of Package and Interface, Organizing Classes and Interfaces in Packages, Defining Package,
10	09.03.2025 to 16.03.2025	Holi Break

11	17.03.2025 to 23.03.2025	Adding Classes from a Package to Your Program, CLASSPATH Setting for Packages, Import Package, Naming Convention For Packages , Access Protection in Packages, Standard Packages
12	24-03-2025 to 30.03.2025	UNIT-4: Exception Handling in Java: The Idea behind Exception, Types of Exception, Use of try, catch, finally, throw, throws in Exception Handling, In-built and User Defined Exceptions, Checked and Un-Checked Exceptions, Assignment-2
13	31.04.2025 to 06.04.2025	Catching more than one Exception; Applet in Java: Applet Basics, Applet Architecture, Applet Life Cycle, Applet Tag, Parameters to Applet, Embedding Applets in Web page, Creating Simple Applets;
14	07-04-2025 to 13.04.2025	GUI Programming: Designing Graphical User Interfaces in Java, Components and Containers, Using Containers, Layout Managers, AWT Components, AWT Classes, AWT Controls.
15	13.04.2025 to 30.04.2025	Revision & Test
16	01.05.2025 onwards	Examination

REFERENCE BOOKS:

1. Patrick Naughton and Herbert Schilitz, "JAVA-2 Complete Reference" ,TMH, New Delhi.
2. E Balaguruswamy, "Programming with Java", TMH, New Delhi.

GOVT. COLLEGE FOR GIRLS, PALWAL, KURUKSHETRA

DEPARTMENT OF COMPUTER SCIENCE

LESSON PLAN

Name: Dr. Komal

Subject: Computer Graphics

Course /Semester – BCA/6th

Sub Code: BCA-363

Week	Date	Topics To Be Covered
1	01-01-2025 to 12-01-2025	UNIT-1: Introduction: History of Computer Graphics (CG), Interactive and Passive Graphics, Applications of Computer Graphics,
2	13-01-2025 to 19-01-2025	Display devices: Refresh CRT, Raster-scan System, Random scan System, Interlacing, Bit Planes, Color Depth, Color Palette
3	20-01-2025 to 26-01-2025	Color CRT, DVST, Flat Panel Displays: Plasma Panel displays LCD Panels, Lookup Table Assignment-1
4	27-01-2025 to 02.02.2025.	Input/Output Devices, Tablets, Display Processor, General Purpose Graphic software, Coordinate Representation.
5	03.02.2025 to 09.02.2025	UNIT-2: Point-Plotting Techniques: Scan Conversion, Scan-Converting a Straight Line: The Symmetrical DDA,
6	10.02.2025 to 16.02.2025	The Simple DDA, Bresenham's Line Algorithm; Scan-Converting a Circle: Circle drawing using Polar Coordinates, Bresenham's Circle Algorithm
7	17.02.2025 to 23.02.2025	Scan-Converting an Ellipse: Polynomial Method, Trigonometric Method; Polygon Area Filling: Scan-line Fill and Flood Fill Algorithms; Test-1
8	24.02.2025 to 02.03.2025	UNIT-3: Two-Dimensional Graphics Transformation: Basic Transformations: Translation, Rotation, Scaling; Matrix Representations and Homogeneous Coordinates;
9	03.02.2025 to 08.04.2025	Other Transformations: Reflection, Shearing; Coordinate Transformations; Composite Transformations; Inverse Transformation;
10	09.03.2025 to 16.03.2025	Holi Break

11	17.03.2025 to 23.03.2025	Affine Transformations; Raster Transformation; Graphical Input: Pointing and Positioning Devices and Techniques
12	24-03-2025 to 30.03.2025	UNIT-4: Two-Dimensional Viewing: Window and Viewport, 2-D Viewing Transformation Clipping: Point Clipping; Line Clipping: Cohen-Sutherland Line Clipping Algorithm Assignment-2
13	31.04.2025 to 06.04.2025	Mid-Point Subdivision Line Clipping Algorithm; Polygon Clipping: Sutherland-Hodgman Polygon Clipping Algorithm;
14	07-04-2025 to 13.04.2025	Three-Dimensional Graphics: Three-Dimensional Display Methods 3-D Transformations: Translation, Rotation, Scaling; Composite Transformations;
15	13.04.2025 to 30.04.2025	Revision & Test
16	01.05.2025 onwards	Examination

REFERENCE BOOKS:

1. Donald Hearn, M. Pauline Baker, "Computer Graphics", PHI.
2. Newmann & Sproull, "Principles of Interactive Computer Graphics", McGraw Hill

GOVT. COLLEGE FOR GIRLS, PALWAL, KURUKSHETRA

DEPARTMENT OF COMPUTER SCIENCE

LESSON PLAN

Name: Dr. Komal

Subject: RDBMS

Course/Semester – B.Sc/6th

Sub Code: CS-Paper-1

Week	Date	Topics To Be Covered
1	01-01-2025 to 12-01-2025	UNIT-1: Relational Model Concepts, Codd's Rules for Relational Model, Hierarchical Data Model– Introduction, Features, Components, Example
2	13-01-2025 to 19-01-2025	Network Data Model– Introduction, Features, Components, Example, Differences between Hierarchical Data Model and Network Data Model,
3	20-01-2025 to 26-01-2025	Comparison of Relational Data Model with Hierarchical Data Model and Network Data Model, Relational Algebra:-Selection and Projection, Set Operation, Join and Division. Assignment-1
4	27-01-2025 to 02.02.2025.	UNIT-2: Relational Calculus: Tuple Relational Calculus and Domain Relational Calculus.
5	03.02.2025 to 09.02.2025	Functional Dependencies and Normalization -- Purpose, Data Redundancy, Update Anomalies,
6	10.02.2025 to 16.02.2025	Partial/Fully Functional Dependencies, Transitive Functional Dependencies, Characteristics of Functional Dependencies,
7	17.02.2025 to 23.02.2025	Decomposition and Normal Forms (1NF, 2NF, 3NF & BCNF) Test-1
8	24.02.2025 to 02.03.2025	UNIT-3: SQL: Data Definition and data types, Create Table, Insert Data, Viewing Data, Filtering Table Data, Sorting data,
9	03.02.2025 to 08.04.2025	Creating Table from a Table, Destroy table, Update, View, Delete, Join, Concatenating data from Table
10	09.03.2025 to 16.03.2025	Holi Break
11	17.03.2025 to 23.03.2025	Specifying Constraints in SQL; Primary Key, Foreign Key, Unique Key, Check Constraint, Using Functions

12	24-03-2025 to 30.03.2025	UNIT-4: PL/SQL-Introduction, Advantages of PL/SQL The Generic PL/SQL Block: PL/SQL Execution Environment Assignment-2
13	31.04.2025 to 06.04.2025	PL/SQL Character Set and Data Types, Declaration and Assignment of Variables
14	07-04-2025 to 13.04.2025	Control Structure in PL/SQL: Conditional Control, Iterative Control, Sequential Control
15	13.04.2025 to 30.04.2025	Revision & Test
16	01.05.2025 onwards	Examination

REFERENCE BOOKS:

1. Elmasri Ramez & Navathe Shamkant B., “Fundamentals of Database Systems”, Addison & Wesley, New Delhi, 2007

GOVT. COLLEGE FOR GIRLS, PALWAL, KURUKSHETRA

DEPARTMENT OF COMPUTER SCIENCE

LESSON PLAN

Name: Dr. Komal

Subject: Computer Graphics

Course/Semester – BCA/4th

Sub Code: B23-CAP-403

Week	Date	Topics To Be Covered
1	08-02-2025 to 16-02-2025	UNIT-1: Introduction: History of Computer Graphics (CG), Applications of Computer Graphics,
2	17-02-2025 to 25-02-2025	Components of interactive graphics systems , Display devices: Refresh CRT, Color CRT,
3	26-02-2025 to 03-03-2025	Plasma Panel displays LCD Panels, Raster-scan System, Random scan System, Graphic software Assignment-1
4	03-03-2025to 08.03.2025.	Input/Output Devices, Tablets
5	09.03.2025-16.03.2025	Holi Break
6	17.03.2025 to 25.03.2025	UNIT-2: Output Primitives: Points and Lines, Line Drawing Algorithms: DDA algorithm, Bresenham's algorithm Test-1
7	26.03.2025 to 07.04.2025	Circle drawing Algorithms: Polynomial Method, Bresenham's algorithm. Parametric representation of Cubic Curves, Bezier Curves
8	08.04.2025-16.04.2025	UNIT-3: 2D Transformation: Use of Homogeneous Coordinates Systems, Composite Transformation: Translation, Scaling, Rotation.
9	17.04.2025-25.04.2025	Mirror Reflection, Rotation about an Arbitrary Point. Clipping and Windowing, Clipping Operations.
10	26.04.2025 to 04.05.2025	Line Clipping Algorithms: The Mid-Point subdivision method, Cohen-Sutherland
11	05.05.2025 to 12.05.2025	Line Clipping Algorithms, Polygon Clipping, Sutherland Hodgeman Algorithms, Text Clipping. Assignment-2

12	13-05-2025 to 19.05.2025	UNIT-4: 3-D Graphics: 3-D object representations, 3-D Transformations: Translation, Rotation, Scaling, Projections
13	05.05.2025 to 12.05.2025	Hidden surface elimination: Back face removal, Depth Buffer algorithm, Scan-line algorithm, Depth sort algorithm, Shading.
14	13-05-2025 to 31.05.2025	Revision & Test
15	01.06.2025	Examination

REFERENCE BOOKS:

1. Donald Hearn, M. Pauline Baker, Computer Graphics, Pearson Education.
2. J. D. Foley, A. Van Dam, S. K. Feiner and J. F. Hughes, Computer Graphics - Principles and Practice, Pearson Education.

GOVT. COLLEGE FOR GIRLS, PALWAL, KURUKSHETRA

DEPARTMENT OF COMPUTER SCIENCE

LESSON PLAN

Name: Dr. Komal

Subject: Data Structure

Course/Semester – BCA/4th

Sub Code: B23-CAP-401

Week	Date	Topics To Be Covered
1	08-02-2025 to 16-02-2025	UNIT-1: Data Structure: Defination, Data Type vs Data Structure, Classification of Data Structure, Data Structure Operations, Applications of Data Structure
2	17-02-2025 to 25-02-2025	Algorithm Specifications: Performance Analysis and Measurement (Time and Space Analysis of Algorithms- Average, Best and Worst Case Analysis).
3	26-02-2025 to 03-03-2025	Arrays: Introduction, Linear Arrays, Representation of Linear Array in Memory, Two Dimensional and Multidimensional Arrays, Sparse Matrix and its Representation,
4	03-03-2025to 08.03.2025.	Operations on Array: Algorithm for Traversal, Selection, Insertion, Deletion and its implementation Assignment-1
5	09.03.2025-16.03.2025	Holi Break
6	17.03.2025 to 25.03.2025	UNIT-2: String Handling: Storage of Strings, Operations on Strings viz., Length, Concatenation, Substring, Insertion, Deletion, Replacement, Pattern Matching Test-1
7	26.03.2025 to 07.04.2025	Linked List: Introduction, Array vs. linked list, Representation of linked lists in Memory, Traversing a Linked List, Insertion, Deletion, Searching into a Linked list, Type of Linked List.
8	08.04.2025-16.04.2025	UNIT-3: Stack: Array Representation of Stack, Linked List Representation of Stack, Algorithms for Push and Pop, Application of Stack: Polish Notation, Postfix Evaluation Algorithms.
9	17.04.2025-25.04.2025	Infix to Postfix Conversion, Infix to Prefix Conversion, Recursion. Introduction to Queues: Simple Queue, Double Ended Queue, Circular Queue, Priority Queue, Representation of Queues as Linked List and Array,

10	26.04.2025 to 04.05.2025	Applications of Queue. Algorithm on Insertion and Deletion in Simple Queue and Circular Queue. Priority Queues.
11	05.05.2025 to 12.05.2025	UNIT-4: Tree: Definitions and Concepts, Representation of Binary Tree, Binary Tree Traversal (Inorder, postorder, preorder), Assignment-2
12	13-05-2025 to 19.05.2025	Binary Search Trees – Definition, Operations viz., searching, insertions and deletion; Searching and Sorting Techniques
13	05.05.2025 to 12.05.2025	Sorting Techniques: Bubble sort, Merge sort, Selection sort, Quick sort, Insertion Sort. Searching Techniques: Sequential Searching, Binary Searching.
14	13-05-2025 to 31.05.2025	Revision & Test
15	01.06.2025	Examination

REFERENCE BOOKS:

1. Eymour Lipschutz, Data Structure, Tata McGraw-Hill Publishing Company Limited
2. Yedidyan Langsam, Moshe J. Augenstein and Aaron M. Tenenbaum, Data Structure using C, Pearson Education.

GOVT. COLLEGE FOR GIRLS, PALWAL, KURUKSHETRA

DEPARTMENT OF COMPUTER SCIENCE

LESSON PLAN

Name: Dr. Komal

Subject: DBMS

Course/Semester – B.Sc/4th

Sub Code: B23-CSE-401

Week	Date	Topics To Be Covered
1	08-02-2025 to 16-02-2025	UNIT-1: Basic Concepts: Data, Information, Records, Files, Schema and Instance etc. Limitations of File-Based Approach, Characteristics of Database Approach, Database Management System (DBMS),
2	17-02-2025 to 25-02-2025	DBMS Functions and Components, Database Interfaces, Advantages and Disadvantages of DBMS., Database Users: Data and Database Administrator,
3	26-02-2025 to 03-03-2025	Role and Responsibilities of Database Administrator, Database Designers, Application Developers etc. Database System Architecture: 1-Tier, 2-Tier & Three Levels of Architecture, External, Conceptual and Internal Levels, Schemas, Assignment-1
4	03-03-2025 to 08.03.2025.	Mappings and Instances, Data independence – Logical and Physical Data Independence
5	09.03.2025-16.03.2025	Holi Break
6	17.03.2025 to 25.03.2025	UNIT-2: Data Models: Hierarchical, Network, and Relational Data Models. Test-1
7	26.03.2025 to 07.04.2025	Entity-Relationship Model: Entity, Entity Sets, Entity Type, Attributes: Type of Attributes, Keys, Integrity Constraints,
8	08.04.2025-16.04.2025	Designing of ER Diagram, Symbolic Notations for Designing, ER Diagram
9	17.04.2025-25.04.2025	UNIT-3: SQL: Meaning, Purpose, and Need of SQL, Data Types, SQL Components: DDL, DML, DCL and DQL, Basic Queries, Join Operations and Sub-queries, Views, Specifying Indexes. Constraints and its Implementation in SQL.
10	26.04.2025 to 04.05.2025	Relational Algebra: Basic Operations: Select, Project, Join, Union, Intersection, Difference, and Cartesian Product, etc.

11	05.05.2025 to 12.05.2025	Relational Calculus: Tuple Relational and Domain Relational Calculus. Relational Algebra Vs. Relational Calculus. Assignment-2
12	13-05-2025 to 19.05.2025	UNIT-4: Functional Dependency, Characteristics, Inference Rules for Functional Dependency, Types of Functional Dependency, Normalization: Benefits and Need of Normalization,
13	05.05.2025 to 12.05.2025	Normal Forms Based on Primary Keys- (1NF, 2NF, 3NF, BCNF), Multi-valued Dependencies, 4 NF, Join dependencies, 5 NF, Domain Key Normal Form.
14	13-05-2025 to 31.05.2025	Revision & Test
15	01.06.2025	Examination

REFERENCE BOOKS:

1. Elmasri & Navathe: Fundamentals of Database Systems, Pearson Education.