# Government PG College, Ambala Cantt

Course File: 2025-26 Odd Semester

Name of Professor: Ashok

Class: BCA – 3rd Semester

Subject Code and Name: B23-CAP-301 – Java OOP Foundations

## COURSE OBJECTIVES

1. To provide knowledge of Object-Oriented Programming concepts using Java.
2. To enable students to implement Java programs using classes, objects, interfaces, and packages.
3. To familiarize students with Exception Handling and File Handling in Java.
4. To introduce GUI development using AWT and Event Handling.
5. To develop the ability to design small projects/applications using Java.

## COURSE OUTCOMES (COs)

1. Students will be able to write and execute basic Java programs.
2. Students will demonstrate multiple inheritance concepts using interfaces.
3. Students will implement exception handling and file handling mechanisms.
4. Students will create GUI-based applications using AWT.
5. Students will design mini-projects using Java concepts.

## LESSON PLAN

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| Sr. No | Topics | No. of Days | To be Completed up to | Activities/Assessment |
| 1 | Object Oriented Programming and Java Fundamentals: Structure of Java programs, Classes and Objects, Data types, Type Casting, Looping Constructs | 10 | 20 Aug 2025 | Class Test – 1 |
| 2 | Interfaces: Interface basics; Defining, implementing and extending interfaces; Implementing multiple inheritance using interfaces. Packages: Basics of packages, Creating and accessing packages, System packages, Creating user defined packages | 10 | 10 Sept 2025 | Assignment – 1 |
| 3 | Exception Handling: try, catch, throw, throws and finally; Nested try, multiple catch statements, User-defined exceptions. File Handling: Byte Stream, Character Stream, File I/O Basics, File Operations | 10 | 28 Sept 2025 | Lab Assignment – 1 |
| 4 | AWT and Event Handling: The AWT class hierarchy, Events, Event sources, Event classes, Event Listeners, Delegation event model, Creating GUI applications using AWT | 10 | 25 Oct 2025 | Class Test – 2 |
| 5 | Revision & Practicals: Java Programs using Interfaces, Packages, Exception Handling, File Handling, and AWT | 8 | 15 Nov 2025 | Assignment – 2, Viva |