

Gurukul Educational And Research Institute



SHIKSHA SANKUL, SAHASTRADHARA ROAD, NEARBY IT PARK,
DEHRADUN, UTTARAKHAND PIN CODE - 248013



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Diploma in Java Programming



Duration

- 6 Months (Basic Diploma)
- 1 Year (Advanced Diploma)



Eligibility

- 10+2 Preferred
- Basic computer knowledge recommended



Course Structure (1 Year Model)



Semester 1 – Core Java

Module 1: Introduction to Programming & Java

- Introduction to Programming Concepts
- History & Features of Java
- JVM, JRE, JDK
- Installing Java & IDE (Eclipse / IntelliJ)

Module 2: Basics of Java

- Variables & Data Types
- Operators
- Input / Output
- Type Casting

Module 3: Control Statements

- If / Else
- Switch
- Loops (for, while, do-while)
- Nested Loops

Module 4: Object Oriented Programming (OOP)

- Classes & Objects
- Constructors
- Methods
- Encapsulation
- Inheritance
- Polymorphism
- Abstraction

Module 5: Arrays & Strings

- Single & Multi-dimensional Arrays
- String Class
- StringBuffer & StringBuilder

Module 6: Exception Handling

- Try-Catch
- Finally Block
- Custom Exceptions

Semester 2 – Advanced Java

Module 7: Packages & Interfaces

- Creating Packages
- Access Modifiers
- Interfaces

Module 8: File Handling

- File Class
- FileReader & FileWriter
- Buffered Streams

Module 9: Collections Framework

- ArrayList
- LinkedList
- HashSet
- HashMap
- Iterator

Module 10: JDBC (Database Connectivity)

- Introduction to Database
- MySQL Connection
- CRUD Operations
- Prepared Statements



Module 11: Multithreading

- Thread Class
- Runnable Interface
- Synchronization

Module 12: Introduction to GUI (Swing / JavaFX)

- Creating Forms Event
- Handling

Practical Training

- 80+ Java Programs
- Database Based Application
- Final Project (Library Management / Student Management / Billing System)

Examination Pattern

- Theory – 100 Marks
- Practical – 150 Marks
- Project – 100 Marks
- Viva – 50 Marks

Career Opportunities

- Java Developer (Entry Level)
- Backend Developer
- Android App Developer (with further training)
- Software Tester
- Application Support Executive

