

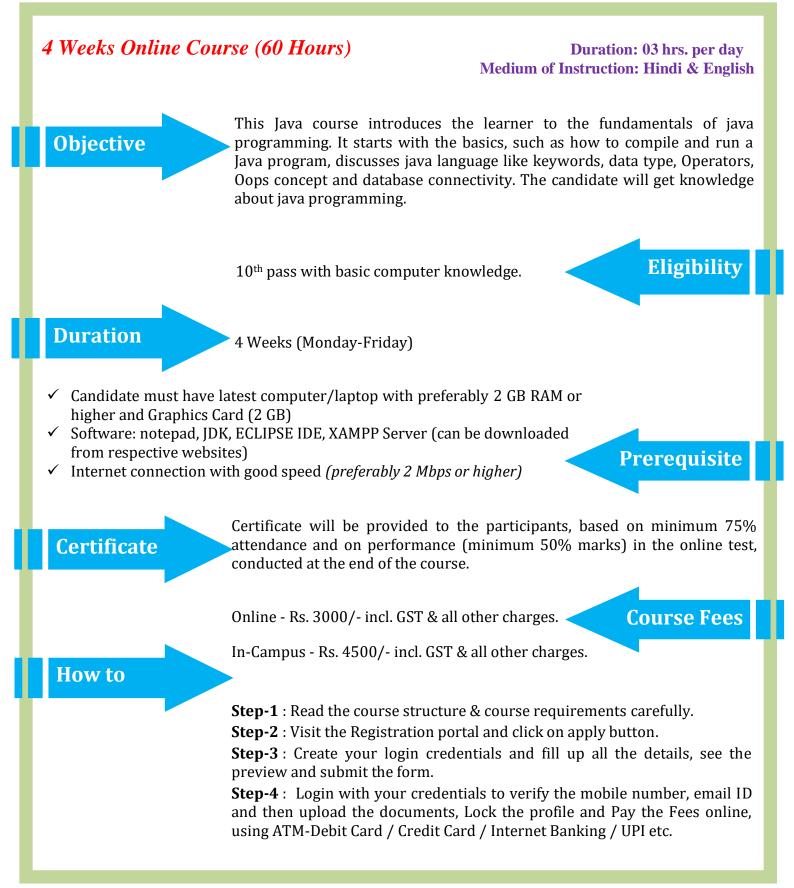
National Institute of Electronics & Information Technology

Gorakhpur (Under Ministry of Electronics and Information Technology, Govt. of India) MMMUT Campus, Deoria Road, Gorakhpur-273010 <u>https://www.nielit.gov.in/gorakhpur/</u>

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Certificate Course in Java Programming





Contact

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Course Contents

Day	Торіс	Day	Торіс	Day	Торіс
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Day #07	Polymorphism in Java	Day #08	Abstraction in Java	Day #09	Packages in Java
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Day #13	Multithreading in Java	Day #14	Programs in Multithreading	Day #15	I/O Operation in Java
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Day #19	Introduction to JDBC	Day #20	Database Programming using JDBC		

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Contents in Details

Course

Introduction to Java

- What is Java
- History of Java
- Feature of Java
- Comparison in Java with C and C++
- JDK, JRE & JVM
- Installation of Java
- How to Set Path?

Creating First Java Program

- Simple Java Hello Program
- Explanation of Hello Program
- Compile and run Java Program

Java Fundamentals

- Data Type
- Variables
- Operators
- Keywords
- Constants
- Identifiers
- Comments
- Type Casting

Control & looping statements

- If statements
- If-else statement and if....else ladder
- Nested if statements
- Switch statements
- While loop
- Do-while loop
- for loop
- for-each loop
- Break and continue

OOP's concept

- OOP concepts with real life example
- Defining a Class
- Field declaration
- Creating Objects
- Constructor
- Type of constructor
- Methods
- static keyword
- this keyword

Inheritance in Java

- Introduction to inheritance
- Types of Inheritance
- Why multiple inheritances are not supported in java?

Polymorphism in Java

- Introduction to Polymorphism
- Type of polymorphism

- Difference between method overloading & method overriding
- Super keyword and it's usages
 - Final keyword and it's usages

Abstraction in Java

- Different way to achieve Abstraction in java
- Abstract class
- Interface
- Multiple inheritance by interface
- Difference between abstract & Interface

Packages in Java

- Understanding Package
- Using system packages
- Creating package
- Accessing a package
- Using a package
- Setting Class path
- Reading Input from Keyboard
- Access Modifiers
- Implementation of Encapsulation

Arrays, String

- Introduction to Array
- Advantages from Array
- Creating an Java
- Initializing & Accessing Array
- 1-d Arrays
- 2-d Arrays
- Jagged Arrays
- Anonymous array
- Operations on Arrays
- WhatisString
- StringClass
- CreatingStringObject
- OperationsonString
- StringBufferClassandit'sMethods
- Difference between String and StringBuffer class
- StringBuilderClassandit'sMethods
- Difference between StringBuffer and StringBuilder

Exception Handling

- Introduction to Exception
- Types of exception
- Exception Class Hierarchy
- Try & Catch Blocks
- Nested Try statements
- Throw, throws and finally keyword
- Creating Custom Exceptions
- Difference between Final, Finally and Finalize



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Multithreading in Java

- Understanding Threads and process
- Multiprocessing v/s Multithreading
- How to create thread
- Creating Child Threads and understanding context switching
- Thread Life-Cycle
- Thread Priorities
- MainThread(DefaultJavaThread)
- Performing multiple job by multiple Thread
- Sleeping a thread
- Using thread methods
- Daemon thread

I/O Operation in Java

- What is I/O
 - Why Need Streams
 - Byte Streams and Character Streams
- Read/Write operations with file
- Scanner Class
- Input from keyboard by InputStreamReader

- PrintStream class
- PrintWriter class

Swing in Java

- Introduction to AWT & Swing
- Difference between AWT and Swing
- Hierarchy of java swing classes
- JButton class
- JLabel
- JTextField & JTextArea class
- JPasswordField class
- JRadioButton class
- JComboBox class
- JTable class
- Displaying Image
- JMenu, JMenuItem and JMenuBar

Database Programming using JDBC

- Introduction to JDBC
- Steps to connect to the database
- Types of JDBC Drivers
- Connectivity with MySQL