

Course : Java Programming-I

Duration : 156 hrs

Module 1:

Object Oriented Programming Concepts

- Introduction to Object-Oriented Programming
- Object-oriented Design
- Classes and Methods
- Abstraction and Inheritance
- 5. Multiple Inheritance and Interfaces
- Polymorphism
- Overloading
- Overriding
- Polymorphic Variable
- Generics
- Frameworks and Reflection
- Patterns

Module 2:

Fundamentals of Java

- Introduction to Java
- Application Development in Java
- Variables and Operators
- Decision-Making Constructs
- Looping Constructs
- Classes and Objects
- Methods and Access Specifiers
- Arrays and Strings
- Modifiers and Packages
- Inheritance and Polymorphism
- Interfaces and Nested Classes

- Exceptions
- Stream API
- More on Functional Programming
- Additional Features of Java 8

Module 3:

Object Oriented Programming with Java

- Exceptions and Assertions
- java.lang Package
- Collections API
- Generics
- File Handling in Java
- New Features in File Handling
- Introduction to Threads
- Multithreading and Concurrency
- JDBC API
- Advanced JDBC Features
- Design Patterns
- Internationalization and Localization
- Advanced Concurrency and Parallelism
- Java Class Design and Advanced Class Design
- Effective Programming with Lambda

Module 3:

Web Component Development using Servlets JSP

- Introduction to Web Applications
- Java Servlet
- Session Tracking
- Filters and Annotations
- Database Access and Event Handling
- Database Access and Event Handling
- JavaServer Pages
- JSP Implicit Objects
- Standard Actions and JavaBeans
- Model-ViewController Architecture
- JSP Expression Language
- JavaServer Pages Standard Tag Library

- JSP Custom Tags
- Internationalization
- Securing Web Applications

Module 4:

Agile System Development Life Cycle for Software Projects

- Software Characteristics
- Software Development Life Cycle
- Linear Process Models
- Iterative Process Models
- Specialized Process Models
- Agile Software Development - I
- Agile Software Development - II
- Extreme Programming
- Scrum
- Agile Process Models - I
- Agile Process Models - II
- Comparing Agile with Traditional Models
- Introduction to DevOps and Configuration Management
- Continuous Integration and Delivery in DevOps
- Continuous Deployment and Monitoring in DevOps
- DevOps Tools

Module 5:

Securing Web Applications

- Introduction to Web Application Security
- Malicious Software, Viruses, and their Solutions
- Service Attacks and Firewalls
- Web Application Vulnerabilities and Counter Measures
- Server Security
- Designing Principles, Measures, and Testing Tools
- Common Threats to Web Applications and Countermeasures
- Language-specific Security
- Web Services and Web Server Security