

JAVA PROGRAMMING SYLLABUS COPY

Engineered for skill enhancement.



PROGRAM HIGHLIGHTS

Accredited Certificates :

- ✓ Program approved ISO Certification

Internships :

- ✓ Industry-relevant opportunities provided-

Placement Assistance :

- ✓ Career guidance from industry experts-

Basic to Advanced Level Training :

- ✓ Learn from experienced AI professionals .

Live & Recorded Lectures :

- ✓ Flexible learning at your convenience .

Real-Time Projects :

- ✓ Hands-on minor & major projects



ABOUT US

- **OUR MISSION :**

Nxt Sync is a pioneering EdTech company committed to bridging the gap between theoretical learning and practical application. Our mission is to empower students with cutting-edge AI skills that enhance employability and prepare them for a tech-driven future.

- **OUR VISION--UPSKILL:** Empowering minds for the future.
- **INNOVATE:** Fostering creativity and breakthroughs .
- **EXCEL:** Preparing industry-ready professionals.

WHY JAVA PROGRAMMING?

- Most Popular & Versatile Language
- Strong OOP Principles & Platform Independence
- Used in Web, Mobile, Desktop & Enterprise Applications
- Career Opportunities in Backend, Android, API Development & More
- Robust Community & Framework Support
- Integration with Spring Boot, Cloud & Microservices



LEARNING PATH

- Introduction to Java Programming
- Java Fundamentals & Object-Oriented Programming
- Exception Handling & Collections
- GUI Programming & Event Handling
- File I/O & Multithreading
- JDBC & Database Integration
- Web Development with Java (Servlets & JSP)
- Spring Framework & Spring Boot
- REST API Development & Microservices
- Capstone Projects & Research



DETAILED MODULE BREAKDOWN

Module 1: Introduction to Java Programming

- History & Features of Java
- Java Development Environment (JDK, JRE, IDEs)
- First Java Program & Compilation Process

Module 2: Java Fundamentals & OOP

- Data Types, Variables, Operators & Control Statements
- Classes, Objects, Methods & Constructors
- Inheritance, Polymorphism, Abstraction & Encapsulation



Module 3: Exception Handling & Collections

- Try-Catch Blocks, Throw, Throws, Finally
- Custom Exceptions
- List, Set, Map, Queue – Collections Framework
- Generics in Java

Module 4: GUI Programming & Event Handling

- Introduction to AWT & Swing
- Building UI Components (Buttons, TextFields, Frames)
- Event Listeners & Handlers
- MVC Pattern in GUI Design

Module 5: File I/O & Multithreading

- Reading/Writing Files using Java I/O & NIO
- Serialization & Deserialization
- Thread Lifecycle, Synchronization & Concurrency
- Executor Framework & Runnable Interface



Module 6: JDBC & Database Integration

- JDBC Architecture
- Connecting Java with MySQL/Oracle
- CRUD Operations
- PreparedStatement & ResultSet

Module 7: Web Development with Java (Servlets & JSP)

- Introduction to Web Applications
- HTTP Protocol & Request/Response Lifecycle
- Java Servlets: Configuration, Sessions, Cookies
- JSP: Tags, Directives, Expression Language (EL)

Module 8: Spring Framework & Spring Boot

- Introduction to Spring & Dependency Injection
- Spring Core, Spring MVC
- REST APIs using Spring Boot
- JPA & Hibernate Integration
- Spring Security Basics



Module 9: REST API Development & Microservices

- RESTful API Concepts & Design
- Building REST APIs with Spring Boot
- Consuming APIs using Java HTTP Clients
- Microservices Architecture & Deployment Basics

Module 10: Capstone Projects & Industry Research

- Hands-on Real-Time Java Development Projects
- Full-Stack Java Application (Frontend + Backend)
- Industry Collaboration & Research-Based Projects
- Code Optimization, Testing & Deployment



ASSIGNMENT'S & ASSESSMENTS

- Weekly coding challenges & assignments
- Mid-term Java mini-projects
- Final capstone Java project
- Live code reviews & peer discussions

TOOLS & FRAMEWORKS USED

IDEs & Tools:

Eclipse, IntelliJ IDEA, NetBeans

Build & Dependency Management:

Maven, Gradle

Web & Database:

Apache Tomcat, MySQL, PostgreSQL

Frameworks & Libraries:

Spring Boot, Hibernate, JDBC, JPA

Testing & Debugging:

JUnit, Mockito, Log4J

Version Control & DevOps:

Git, GitHub, Docker (Basics), Jenkins (Intro)



RECOMMENDED READING

Java Programming:

"Effective Java" – Joshua Bloch

"Head First Java" – Kathy Sierra & Bert Bates

"Java: The Complete Reference" – Herbert Schildt

"Spring in Action" – Craig Walls



WHY CHOOSE NXTSYNC?

- ☑ Industry-Aligned Java Programming Curriculum
- ☑ Hands-on Real-World Projects
- ☑ Expert Mentorship & Career Guidance
- ☑ Flexible Learning Schedule
- ☑ ISO-Certified Java Programming Training Program

Start Your Digital Marketing Journey with NxtSync Today!



THANK YOU

