

**Full Stack Development Course**

**\*\*\*Syllabus\*\*\***

# Module 1

*Introduction to Programming with Java*

Understand the basics of Java programming and its setup.

**Topics:**

* History and features of Java
* Setting up the Java Development Kit (JDK)
* Writing your first Java program
* Understanding the Java Virtual Machine (JVM)
* Data types and variables
* Operators and expressions
* Control flow statements (if-else, switch-case)
* Loops (for, while, do-while)

# AI Module 2

AI-driven full stack developer

How to use AI (ChatGPT, Microsoft Copilot & Deepseek) to solve business problems.

**Topics:**

* AI in Excel: Data Analysis, Power Query, Forecasting, Data Types, Dynamic Arrays,

NaturalLanguage Queries, Insert Data from Pictures

* AI in PowerPoint: Design Ideas, Smart Formatting, Content Generation, Visual Enhancements, Data Visualization
* AI in Programming: Code Generation, Debugging, UI Enhancements, Prompting Practice,

AIFrameworks, CheatSheets

# Module 3

*HTML, CSS, and JavaScript*

Learn the essential tools for front-end development.

**Topics:**

* HTML: Basic tags, Forms, Images, Buttons, HTML5 updates
* CSS: Borders, Backgrounds, Text Effects, Transforms, Animations, Flexbox, Grid, Media Queries
* JavaScript: Variables, Functions, DOM Manipulation, Async JS, Web APIs

# Module 4

*Frontend Development with React*

Understand the core concepts of React and build web apps.

**Topics:**

- React Basics, JSX, Components, State, Lifecycle, Events, Conditional Rendering, Lists, Context API, Hooks, Routing, HOCs

# Module 5

*Object-Oriented Programming*

Master OOP concepts like inheritance, polymorphism, and abstraction.

**Topics:**

- Classes, Constructors, Inheritance, Polymorphism, Encapsulation, Interfaces, Abstract Classes, Inner Classes, Packages

# Module 6

*Exception Handling and Collections*

Master Java's exception handling and collections framework.

**Topics:**

- Try-catch, Finally, Custom exceptions, List, Set, Map, ArrayList, LinkedList, HashSet, TreeSet, Iterators

# Module 7

*Full Stack Application Development*

Combine React and Java skills to build full-stack apps.

**Topics:**

- Spring Boot REST APIs, React Integration, CORS, CRUD, Auth, Deployment, CI/CD, Testing, Debugging