**CAREERLABS**

PLACEMENT ASSURED PROGRAM IN PARTNERSHIP WITH

**Tech Mahindra**

## THE TRAINING CURRICULUM FOR THE PROGRAM

- **Java Programming, Debugging and Unit Testing**
  - Development Environment setup
  - Language Fundamentals (Expressions, Statements, Methods)
  - Control Flow Statements
  - Java OOP - Classes, Constructors, Inheritance, Polymorphism
  - Arrays, Lists, Autoboxing
  - Inner and Abstract Classes & Interfaces
  - Java Generics
  - Packages
  - Java Collections
  - Java IO - Console and File Streams, Serialization
  - Concurrency in Java
  - Debugging and Unit Testing (Junit & Mockito)
  - Database Manipulation with JDBC
  - Java 8 New Features - Lambda Expressions, Streams, DateTime APIs
- **Version control using GIT**
  - Learn the key concepts of the Git source control system
  - Step through the entire Git workflow
  - Compare the different states in Git
  - Compare between branches and commits
  - Manage files with Git (move, rename, delete)
  - Update files managed outside Git
  - Create and fork repositories on GitHub
  - Create branches and resolve merge conflicts
- **Java EE Web Application Fundamentals**
  - Environment Setup with Eclipse & Tomcat
  - JSP Fundamentals
  - Reading HTML form Data with JSP
  - State Management with JSP

- JSP
  Standard Tag Library - Core & Function Tags
- Servlet API Fundamentals
- Servlet Context, Session, Cookies
- Request Redirection Techniques
- Building MVC App with Servlets & JSP
- Complete App - Integrating JDBC with MVC App
- **Java Persistence using JPA and Hibernate**
  - Fundamentals of Java Persistence with Hibernate
  - JPA for Object/Relational Mapping, Querying, Caching, Performance and Concurrency
  - First & Second Level Caching, Batch Fetching, Optimistic Locking & Versioning
  - Entity Relationships, Inheritance Mapping & Polymorphic Queries
  - Querying database using JPQL and Criteria API (JPA)
- **Apache Maven**
  - Maven Fundamentals
  - Software Setup - Command Line and Eclipse
  - pom.xml and Directory Structure
  - Multi-Module Project Creation
  - Scopes
  - Dependency Management
  - Profiles
- **Spring Core, Spring MVC, Spring Boot REST API**
  - Understanding Spring Framework
  - Using Spring MVC
  - Building a Database Web App with Spring and Hibernate
  - Spring AOP (Aspect Oriented Programming)
  - Implementing Spring Security
  - Developing Spring REST API
  - Using Spring Boot for Rapid Development
- **Functional/BDD Testing using Selenium**
  - Selenium Fundamentals and IDE
  - Selenium WebDriver
  - Installation and Configuration
  - Locating WebElements
  - Driver Commands
  - Web Element Commands

- **Agile, Scrum and DevOps Fundamentals**
- Introduction to Agile Methodology
- Scrum Fundamentals
- Scrum Roles, Artifacts and Rituals
- DevOps – Architecture, Lifecycle, Workflow & Principles
- DevOps Tools Overview – Jenkins, Docker, Kubernetes
- **Web Design & Development**
- HTML5 – Syntax, Attributes, Events, Web Forms 2.0, Web Storage, Canvas, Web Sockets
- CSS3 – Colors, Gradients, Text, Transform
- BootStrap for Responsive Web Design
- JavaScript – Core syntax, HTML DOM, objects, classes, Async
- Ajax and jQuery Introduction
- **Front-end Development using Angular**
- Angular Fundamentals
- Angular CLI
- Introduction to TypeScript
- Debugging Angular applications
- Components & Databinding in Depth
- Angular Directives
- Using Services & Dependency Injection
- Angular Routing
- Observables
- Handling Forms in Angular Apps
- Output transformation using Pipes
- Making Http Requests
- Authentication & Route Protection
- Dynamic Components
- Angular Modules & Optimizing Angular Apps
- Deploying an Angular App
- Angular Animations
- Adding Offline Capabilities with Service Workers
- Unit Testing in Angular Apps (Jasmine, Karma)