

**Java Developer - 80 Hrs. Session Plan**

| Institution Name: | | | | | Start Date: | | |
|---|-----------------|----------------------------|---|-------------------------------|---------------------|---------------|-------------------|
| Trainer Name : | | | | | End Date: | | |
| S.No | Module | Topic | Subtopic | Methodology | Duration (In Hours) | Training Date | Trainer Signature |
| Stage 1 - Core Java - 1 Formative Assessment - (25 Hrs) | | | | | | | |
| 1 | Core Java | Java Basics | Java introduction, Basic programming concepts, Simple Java program | Lecture, Discussion, Hands on | 2 | | |
| | | | Control Structures, Arrays, and Multidimensional Arrays | Lecture, Discussion, Hands on | 2 | | |
| | | OOPS Concepts in Java | Class, Methods, Packages and Class Members | Lecture, Discussion, Hands on | 2 | | |
| | | | Constructor, Static variables and Methods | Lecture, Discussion, Hands on | 2 | | |
| | | | Encapsulation, Inheritance and Polymorphism | Lecture, Discussion, Hands on | 2 | | |
| | | | Interface, Abstract class and Inner class | Lecture, Discussion, Hands on | 2 | | |
| | | Strings in Java | Strings, String Builder, String Manipulation | Lecture, Discussion, Hands on | 2 | | |
| | | Exception Handling in Java | Exception Introduction, Need for Exception | Lecture, Discussion, Hands on | 1 | | |
| | | | Need for Exception Handling and Default Exception | Lecture, Discussion, Hands on | 2 | | |
| | | | Throw, Throws and Nested Try Catch, Try with Resources and Custom Exception | Lecture, Discussion, Hands on | 2 | | |
| | | Threads in Java | Thread introduction, Thread Creation, and States of Threads | Lecture, Discussion,Hands on | 2 | | |
| | | | Multhreading and Thread Functions like sleep, yield and Join | Lecture, Discussion,Hands on | 2 | | |
| Stage 1 - Revision | | | | | 1 | | |
| Stage 1 - Formmative Assessment | | | | | 1 | | |
| Stage 2 - JSP & Servlet - 1 Formative Assessment (25 Hrs) | | | | | | | |
| 2 | JSP and Servlet | Servlets | Basic Understanding of servlet, Servlet environment setup | Lecture, Discussion, Hands on | 1 | | |
| | | | Life cycle of servlet, Writing servlet in IDE | Lecture, Discussion, Hands on | 1 | | |
| | | | Working with filters, Cookies and Session | Lecture, Discussion, Hands on | 2 | | |
| | | | Servlets Filters and Listeners | Lecture, Discussion, Hands on | 2 | | |
| | | JSP | Elements and Directives, Action Elements, Creating Custom tags, and Using beans | Lecture, Discussion, Hands on | 2 | | |
| | | | JSTL introduction, JSTL Tags: Core tags, Formatting tags and Custom tags | Lecture, Discussion | 2 | | |
| | | | JSP Expression Language | Lecture, Discussion, Hands on | 1 | | |
| | | | Request and Response Handling | Lecture, Discussion, Hands on | 1 | | |
| | | | Database Connectivity | Lecture, Discussion, Hands on | 2 | | |

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|--|------------------------|-------------------|---|-------------------------------|---------------------|---------------|-------------------|
| | | | JDBC integration | Lecture, Discussion, Hands on | 1 | | |
| | | | CRUD operations in database | Lecture, Discussion, Hands on | 2 | | |
| | | | Listing Data on Web Page | Lecture, Discussion, Hands on | 2 | | |
| | | | Adding JSTL support | Lecture, Discussion, Hands on | 2 | | |
| | | | Upload Files / Images | Lecture, Discussion, Hands on | 2 | | |
| Stage 2 - Revision | | | | | 1 | | |
| Stage 2 - Formmative Assessment | | | | | 1 | | |
| Stage 3 - Hibernate & Spring - 1 Formative Assessment (30 Hrs) | | | | | | | |
| 3 | Hibernate & Spring MVC | Hibernate and JPA | Introduction to JPA, JPA Entities, Entity life cycle, and Basic annotations | Lecture, Discussion | 1 | | |
| | | | Mapping Associations,Entity Relationships,Eager and Lazy Loading | Lecture, Discussion, Hands on | 2 | | |
| | | | Entity Managers, Entity State, and Transitions, Stored-Procedure Queries | Lecture, Discussion, Hands on | 2 | | |
| | | | JPQL,The Java Persistence Query Language,HQL | Lecture, Discussion, Hands on | 1 | | |
| | | | Persistence Components,Transaction Control | Lecture, Discussion, Hands on | 2 | | |
| | | | Advanced Mappings,Strategies,Querying Over Inheritance Relationships,Hibernate Extensions | Lecture, Discussion, Hands on | 2 | | |
| | | | The Criteria API & History ,Criteria Query Structure | Lecture, Discussion, Hands on | 2 | | |
| | | | Locking & Caching, API Design best practices | Lecture, Discussion, Hands on | 1 | | |
| | | Spring MVC | Spring introduction, Building Spring web apps | Lecture, Discussion, Hands on | 2 | | |
| | | | Creating Controllers and Views | Lecture, Discussion, Hands on | 2 | | |
| | | | Request params and Request Mappings | Lecture, Discussion, Hands on | 2 | | |
| | | | Forms tags and Data Binding | Lecture, Discussion, Hands on | 2 | | |
| | | | Applying built in validation rules and custom validation rules | Lecture, Discussion, Hands on | 1 | | |
| | | | JSON Data Binding, Retrieve as JSON | Lecture, Discussion, Hands on | 2 | | |
| | | | Create a Spring Rest Controller | Lecture, Discussion, Hands on | 1 | | |
| | | | Use PathVariable for REST endpoint | Lecture, Discussion, Hands on | 1 | | |
| | | | Stage 3 - Revision | | | | |
| Stage 3 - Formmative Assessment | | | | | 1 | | |
| Summative Assesment | | | | | 2 | | |
| Signature of the Trainer | | | | | | | |
| SPOC Signature & College Seal | | | | | | | |