



## Professional Education Programs

### Course **Building Enterprise Applications with JDeveloper and Oracle Database**

**Overview** This course provides insight into building enterprise class applications based on Oracle Database and Oracle JDeveloper. The course includes presentations of key concepts of the J2EE specification, including development methodologies, best practices and patterns for building the J2EE Web, Business and Persistence / Database Tiers.

**Objectives**

- Database (8.1.7 (currently available at AIT's laboratory), 9i, 10g (to be agreed early on))
- JDeveloper (Version) 10
- Oracle OC4j or JBoss (3.2.X or 4.0) {others can be also negotiated/discussed}

**Who should attend** Beginner to Advanced

- Slides, scripts & sample code for lab assignments, pointers to books and docs and technical resources

**Prerequisites**

- Basic Understanding of Information - Database Systems, Basic Knowledge of SQL and the Relational
- DB model

**Duration** The course will be organized in 4-8 sessions (each having a duration of 3-4 hours) depending on topics selected. Almost each theoretical J2EE session (e.g., on JSP, EJB, Web Services) will be accompanied by a practical lab session based on JDeveloper and the Oracle Database.

**Instructor Course outline**

Sessions 1-2: J2EE Overview (lectures+lab with JDeveloper and Oracle)

- Overview of Multi-Tier (3/N-tier) Enterprise Systems Architectures.
- J2EE as an open specification for distributed multi-tier applications.
- J2EE Overview (Building Blocks, Technologies, APIs, Packaging/Deployment, Patterns).
- JNDI (Java Naming and Directory Interface) Overview/Tutorial.
- Basic Concepts of RMI & RMI-IIOP (Distributed Programming, Remote Objects, Stubs and Skeletons, Parameter Passing, Serializable Objects, Registries).

Sessions 3-4: Servlets and JSPs, JDBC (lectures+lab with JDeveloper and Oracle)

- Servlets and HTTP Servlets.
- HTML forms and Data Processing.
- Session Tracking.
- JSP syntax.
- Java Beans.
- Tag Libraries.
- The MVC Pattern / Struts Framework.
- JDBC Overview, Drivers.
- JDBC Statements, Prepared Statements, Callable Statements.
- Oracle JDBC Driver.
- Persistence Logic and the DAO pattern.





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Sessions 5-6: Enterprise Java Beans (lectures+lab with JDeveloper and Oracle)

- Introduction to EJB & EJB Component Model.
- EJBs as distributed objects & EJB interfaces (Home, Remote, Local,...).
- Session Beans (role, lifecycle, implementation, deployment).
- Introduction to Entity Beans concepts.
- Entity Beans with Bean Managed Persistence (BMP) (role, lifecycle, implementation, deployment).
- Entity Beans with Container Managed Persistence (CMP)(role, lifecycle, implementation, deployment).
- CMP / BMP Relationships.
- Lazy vs. Aggressive loading, Directionality.
- Calling Beans from other beans / Bean hierarchies.
- Environment properties.
- EJB-QL.
- EJB Transactions (ACID properties, transaction models, declarative / programmatic transactions, ejb isolation, ejb transactional attributes).
- EJB Best Practices / Performance Issues.
- Basic EJB Patterns.
- Overview of J2EE Web Services.
- Common J2EE Performance Bottlenecks.

Session 7: Practical Session (JDeveloper and Oracle)

- Enterprise Set-up Illustration (AppServer, DBServer, IDE)
- CMP Entity Bean Example.
- Session Bean + JDBC Example.
- Remote vs. Local Interfaces.
- Session Façade.
- EJB Relationships.
- Transactional Attributes illustration.
- Organizing an EJB project / Bootstrapping an EJB project.
- Data Models vs. EJB Model.
- IDE, App Servers and DB Servers capabilities (discussion on other app servers, IDEs and RDBMS systems).

Session 8: J2EE Software Engineering and Best Practices for J2EE Technical Management

- J2EE Software Engineering (RUP & XP)
- Risk Reduction
- Best Practices for Design
- Best Practices for Development
- Best Practices for Testing
- Best Practices for Deployment and Tuning
- Performance Tuning
- Why J2EE projects fail?

Remarks: The course is not directly connected to any Oracle certification





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**Tuition Fee** N/A  
Discount Policy  
Cancellation Policy

### Program Registration

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