

## **Kurs: FJ-310-EE5**

### **Developing Applications for the Java EE Platform (FJ-310-EE5)**

#### **Ziel:**

Upon completion of this course, students should be able to:  
Describe the application model for the Java EE platform and the context for the model  
Develop and run an EJB technology application  
Develop a web-based user interface to an EJB technology application  
Develop simple web services for the Java EE platform  
Configure the Java EE platform services layer

#### **Übersicht:**

The Developing Applications for the Java EE Platform course provides students with the knowledge to build and deploy enterprise applications that comply with Java Platform, Enterprise Edition 5 (Java EE 5) technology standards. The enterprise components presented in this course include Enterprise JavaBeans (EJB) technology, the Java Persistence API (JPA), servlets, and JavaServer Pages (JSP) technology, web services, and the Java technology clients that use them. Students gain hands-on experience through labs that build an end-to-end, distributed business application. The labs explore session EJB components, which implement the Session Facade pattern and provide a front-end to entity components using the Java persistence API. The labs also explore message-driven EJB components, which act as Java Message Service (JMS) consumers. Students use web and Java technology clients to access Java technology-based enterprise services using servlets and pages created with JSP technology. Students are taught how to assemble an application from reusable components and how to deploy an application into the Java EE platform runtime environment. The students perform the course lab exercises using the NetBeans(TM) Integrated Development Environment (IDE) 5.5.

#### **Erforderliche Vorkenntnisse:**

To succeed fully in this course, students should be:  
Experienced with the Java programming language  
Familiar with distributed programming (multi-tier architecture)  
Familiar with relational database theory and the basics of structured query language (SQL)  
Familiar with component technology

#### **Im Vorfeld**

OO-226: OO-Analyse und Design mit UML (OO-226)  
SL-275: Java-Programmierung (SL-275)

#### **Teilnehmerkreis:**

Students who can benefit from this course are Sun Certified Java technology programmers who want to develop enterprise applications that conform to the Java EE platform standards.

#### **Inhalt:**

##### **Placing the Java EE Model in Context**

Describe the needs of enterprise applications and describe how Java EE 5 technology addresses these needs  
Describe the Java EE 5 platform application programming interfaces (APIs) and supporting service  
Describe the Java EE platform tiers and architectures  
Describe how to simplify Java EE application development using architecture patterns

##### **Java EE Component Model and Development Step**

Describe the principles of a component-based development model  
Describe the asynchronous communication model  
Describe the process used and roles involved when developing and executing a Java EE application

Compare the different methods and tools available for developing a Java EE application and related components

Describe how to configure and package Java EE applications

#### Web Component Model

Describe the role of web components in a Java EE application

Define the HTTP request-response model

Compare Java servlets and components and JSP components

Describe the basic session management strategies

Manage thread safety issues in web components

Describe the purpose of web-tier design patterns

#### Developing Servlets

Describe the servlet API

Use the request and response APIs

Forward control and pass data

Use the session management API

#### Developing With JavaServer Pages Technology

Evaluate the role of JSP technology as a presentation mechanism

Author JSP pages

Process data received from servlets in a JSP page

Describe the use of tag libraries

#### EJB Component Model

Describe the role of EJB components in a Java EE application

Describe the EJB component model

Identify the proper terminology to use when discussing EJB components and their elements

#### Implementing EJB 3.0 Session Beans

Compare stateless and stateful behaviour

Describe the operational characteristics of a stateless session beans

Describe the operational characteristics of a stateful session bean

Create session beans

Package and deploy session beans

Create a session bean client

#### The Java Persistence API

Describe the role of the Java Persistence API (JPA) in a Java EE application

Describe the basics of Object Relational Mapping

Describe the elements and environment of an Entity component

Describe the life cycle and operational characteristics of Entity components

#### Implementing a Transaction Policy

Describe transaction semantics

Compare programmatic and declarative transaction scoping

Use the Java Transaction API (JTA) to scope transactions programmatically

Implement a container-managed transaction policy

Support optimistic locking with the versioning of entity components

Predict the effect of transaction scope on application performance

Describe the effect of exceptions on transaction state

#### Developing Java EE Applications Using Messaging

Describe JMS technology

Create a queue message producer

Create a synchronous message consumer

Create an asynchronous message consumer

List the capabilities and limitations of EJB components as messaging clients

### Developing Message-Driven Beans

Describe the properties and life cycle of message-driven beans  
Create a JMS message-driven bean  
Create lifecycle event handlers for a JMS message-driven bean

### Web Service Model

Describe the role of web services  
List the specifications used to make web services platform independent  
Describe the Java APIs used for XML processing and web services

### Implementing Java EE Web Services with JAX-WS

Describe endpoints supported by the Java EE 5 platform  
Describe the requirements of JAX-WS Servlet Endpoints  
Describe the requirements of JAX-WS EJB Endpoints  
Develop Web Service Clients

### Implementing a Security Policy

Exploit container-managed security  
Define user roles and responsibilities  
Create a role-based security policy  
Use the security API  
Configure authentication in the web tier

**Dauer:**

5 Tage

**Preis:**

Die Kursgebühr pro Teilnehmer beträgt € 2700,- zzgl. Mehrwertsteuer.

**Anmerkung:** Kurssprache deutsch, Unterrichtsmaterial überwiegend in englischer Sprache.**Empfohlene weitere Ausbildung:**

SL-314: Programmierung von Web-Komponenten mit Servlets und JSP (SL-314)

SL-351: Business Component Development With Enterprise JavaBeans Technology (SL-351)

## Anmeldung per Fax 02302 / 91421-21

Oder schriftlich an:

**CNS**  
**Computer Network Systems GmbH**  
**Wullener Feld 9**  
**58454 Witten**

**Ja, hiermit melde ich mich verbindlich zu folgenden Seminaren an:**

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Seminarartikel

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Veranstaltungsort und Datum

### Teilnehmer:

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Ort, Datum, Unterschrift

Developing Applications for the Java EE Platform (FJ-310-EE5)

### Und so melden Sie sich an:

Per Fax unter: 02302 / 91421-21

Per Email unter: [training@cns-gruppe.com](mailto:training@cns-gruppe.com)

Telefonisch unter: 02302 / 91421-0

Im Internet unter: [www.cns-gruppe.com](http://www.cns-gruppe.com)

### Mehr Informationen:

Wenn Sie weitere Informationen und Neuigkeiten von uns erhalten möchten, dann können Sie sich hier in unseren Newsletter- Verteiler eintragen:

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