

# J2EE Web Development

## Description

Java servlets and JavaServer Pages allow developers to leverage the power of the Java platform and create object-oriented, scalable, n-tier applications. In this course, students learn how to integrate key components of the Java Enterprise Edition (Java EE), including servlets and JSP technologies to create dynamic data-driven Web applications.

### Classroom Registration Price (CHF)

3100

### Virtual Classroom Registration Price (CHF)

2900

## Course Content

### Module 1: Introducing the Course

- Lesson 1: Reviewing the Java SE and Java EE Curriculum
- Lesson 2: Getting Acquainted with Other Students
- Lesson 3: Reviewing Course Objectives
- Lesson 4: Discussing 5 Day Course Schedule
- Lesson 5: Describing the Format that the Class will Use
- Lesson 6: Introducing Web Application Technologies
- Lesson 7: Describing the Java EE 6 Web Profile

### Module 2: Web Application Essentials

- Lesson 1: Describing Java Servlet Technology
- Lesson 2: Describing JavaServer Pages Technology
- Lesson 3: Understanding the Model-View-Controller (MVC) Architecture
- Lesson 4: Explaining Java EE Containers and Java Application Servers
- Lesson 5: Describing the Web Application Development Process
- Lesson 6: Identifying the Essential Structure of a WAR File

### Module 3: Developing a Servlet

- Lesson 1: Describing the HTTP Headers and Their Function
- Lesson 2: Explaining the Request and Response Processes
- Lesson 3: Understanding the Life Cycle of a Servlet
- Lesson 4: Listing Injection and Lifecycle Method Annotations
- Lesson 5: Understanding the Threading Model of a Servlet
- Lesson 6: Developing a Servlet to Respond to Requests from the Client Browser

### Module 4: Handling Form Requests in Servlets

- Lesson 1: Using HTML Forms To Collect Data From Users and Send it To a Servlet
- Lesson 2: Understanding How Form Data Is Sent in an HTTP Request
- Lesson 3: Developing a Servlet that Retrieves Form Parameters
- Lesson 4: Understanding and Using HttpSession Objects
- Lesson 5: Using Cookies for Session Management
- Lesson 6: Using URL Rewriting for Session Management

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## Module 5: Configuring Your Web Application

- Lesson 1: Describing the Purpose of Deployment Descriptors
- Lesson 2: Creating Servlet Mappings to Allow Invocation of a Servlet
- Lesson 3: Creating and Access Context and Init Parameters
- Lesson 4: Using the @WebServlet and @WebInitParam Annotations
- Lesson 5: Using the ServletContextListener Interface
- Lesson 6: Describing the Different Scopes in a Web Application
- Lesson 7: Handling Errors Using a Deployment Descriptor

## Module 6: Implementing an MVC Design

- Lesson 1: Implementing the Controller Design Element Using a Servlet
- Lesson 2: Implementing the Model Design Element Using a POJO
- Lesson 3: Implementing the View Design Element Using a JSP and Expression Language (EL)
- Lesson 4: Connecting the model, View, and Controller Elements to Implement a Working MVC Solution
- Lesson 5: Injecting a Service in a Controller

## Module 7: Developing Components with JavaServer Pages Technology

- Lesson 1: Describing JSP Page Technology
- Lesson 2: Writing JSP Code Using Scripting Elements
- Lesson 3: Writing JSP Code Using the Page Directive
- Lesson 4: Writing JSP Code Using Standard Tags
- Lesson 5: Writing JSP code using Expression Language
- Lesson 6: Configuring the JSP Page Environment in the web.xml File
- Lesson 7: Writing an Error Page by Using JSP

## Module 8: Developing JSP Pages by Using Custom Tags

- Lesson 1: Designing JSP Pages with Custom Tag Libraries
- Lesson 2: Using a Custom Tag Library in JSP Pages
- Lesson 3: Describing JSTL Tags

## Module 9: Using Filters in Web Applications

- Lesson 1: Describing the Web Container Request Cycle
- Lesson 2: Describing the Filter API
- Lesson 3: Developing a Filter Class
- Lesson 4: Configuring a Filter in the web.xml File

## Module 10: More Servlet Features

- Lesson 1: Using the Asynchronous Servlet Mechanism
- Lesson 2: Using JavaScript to Send an HTTP Request from a Client
- Lesson 3: Processing an HTTP Response Entirely in JavaScript
- Lesson 4: Combining These Techniques to Create the Effect of Server-push
- Lesson 5: Handling Multipart Form Data

## Module 11 : Implementing Security

- Lesson 1: Describing a Common Failure Mode in Security
- Lesson 2: Requiring that a User Log in Before Accessing Specific Pages in Your Web Application

- Lesson 3: Describing the Java EE Security Model
- Lesson 4: Requiring SSL Encrypted Communication for Certain URLs or Servlets

## **Module 12 : Integrating Web Applications with Databases**

- Lesson 1: Understanding the Nature of the Model as a Macro-pattern
- Lesson 2: Implementing Persistent Storage for Your Web Applications Using JDBC or Java Persistence AP

### **Lab / Exercises**

Lab 1: Developing a Servlet Lab 2: Handling Form Requests in Servlets Lab 3: Configuring Your Web Application Lab 4: Implementing an MVC Design Lab 5: Developing Components with JavaServer Pages Technology Lab 6: Developing JSP Pages by Using Custom Tags Lab 7: Using Filters in Web Applications Lab 8: More Servlet Features Lab 9: Implementing Security Lab 10: Integrating Web Applications with Databases

### **Documentation**

- Digital courseware included

### **Participant profiles**

- Individuals involved in developing Web applications with Java

### **Prerequisites**

- Real-world Java programming experience
- Knowledge of Web technologies and HTML

### **Objectives**

- Build data-driven Web applications with server-side Java technologies
- Add a Web interface to your databases using Java servlets
- Generate dynamic Web pages with JavaServer pages (JSP)
- Personalize content for users with cookies and sessions using the Java Servlet API
- Integrate JSP custom tags to minimize scriptlet code

### **Niveau**

Intermédiaire

### **Duration (in Days)**

4

### **Reference**

JAVAW