

# Java back-end developer certification course

*Practical course - 20d - 140h00 - Ref. KGV*

*Price : 7850 CHF E.T.*

This certification course will enable you to master all the steps required to build a back-end application. You'll learn the fundamentals of SQL, HTML5, Java and the development of Java EE/Jakarta EE enterprise applications using the Spring framework.

## Teaching objectives

**At the end of the training, the participant will be able to:**

- ✓ Understanding relational databases and their operating principles
- ✓ Master the fundamentals of SQL, HTML and Java
- ✓ Design and develop Java EE/Jakarta EE enterprise applications
- ✓ Mastering the Spring framework

## Intended audience

Toutes les personnes souhaitant développer une application back end avec Java.

## Prerequisites

None.

## Certification

This certification program is validated by a written exam in the form of a case study (see Ref. KGZ).

### PARTICIPANTS

Toutes les personnes souhaitant développer une application back end avec Java.

### PREREQUISITES

None.

### TRAINER QUALIFICATIONS

The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

### ASSESSMENT TERMS

The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more.

Participants also complete a placement test before and after the course to measure the skills they've developed.

## Course contents

This course consists of the following modules :

### SQL databases and language for non-IT people

Ref. SIF - 3 days  4 / 5

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### Java Programming

Ref. LJO - 5 days  4 / 5

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### Java EE 7 : Web application design and development

Ref. APJ - 5 days  4 / 5

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### Spring 5: Developing enterprise apps

Ref. SPG - 5 days  4 / 5

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### Java back-end developer certification

Ref. KGZ - 1 day  3 / 5

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## Course schedule

### 1 Databases and SQL for non-computer specialists

- Introduction to databases.
- Extract data from a table.
- Query data from multiple tables.
- Scheduling and statistics.
- Present and sort data.
- Use subqueries.

#### Hands-on work

Alternating presentations of sample queries, demonstrations and practical exercises.

### 2 HTML5, introduction

- Introduction to HTML.
- The structure of an HTML document.
- The HTML document header.
- The body of an HTML document.
- Tabular data display.
- The main form tags.
- Digital accessibility.

#### Hands-on work

HTML language implementation.

## TEACHING AIDS AND TECHNICAL RESOURCES

- The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
- At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
- A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

## TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

## ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@orsys.fr to review your request and its feasibility.

### 3 Java and object basics

- Object techniques.
- Basic language constructs.
- Class definition and instantiation.
- Inheritance.
- Exceptions.
- I/O programming.
- Graphic programming.
- Some utility classes.

#### Hands-on work

Practical exercises have been designed to illustrate all the elements of the language and to implement the concepts of object-oriented design: all exercises include an analysis/design phase followed by a programming phase.

### 4 Java EE, Jakarta EE, developing enterprise applications

- Introduction.
- Working environment.
- n-tier slicing and dependency injection with CDI.
- Data access with JPA.
- Distributed architecture with EJB and JMS.
- Web and JSF.
- REST Web services.
- WebSockets.

#### Hands-on work

Install IDE and server. Setting up an n-tier application, using CDI (dependency injection, etc.). Set up the data access layer. Implementation of JSF and Ajax. Expose services, consume these REST services via a web client.

### 5 Spring 5, developing enterprise applications

- The Spring container.
- Bean management with Spring Core.
- Data access and transaction management.
- REST API with Spring MVC and Spring WebFlux.
- Packaging and deployment with Spring Boot.
- Spring Security.
- Exchanging messages with Spring Websocket.
- Web GUI with Spring MVC.

#### Hands-on work

An exercise "fil rouge" accompanies the training, each step of which will be validated by unit tests.

## Dates and locations

#### REMOTE CLASS

2026 : 16 Feb., 16 Mar., 8 Apr., 22 Apr., 18 May,  
3 June, 17 June, 22 July, 19 Aug., 2 Sep., 23 Sep.,  
14 Oct., 2 Nov., 18 Nov., 9 Dec.

#### LAUSANNE

2026 : 18 May, 19 Aug., 18 Nov.

#### GENÈVE

2026 : 18 May, 19 Aug., 18 Nov.