

**Price:** R8,600.00 excl. VAT  
**Duration:** 5 days  
**Code:** WBSVS

## Web Services

### Description

This course focuses on the development of web services using Java Enterprise Edition. Topics include an overview of Web Services, an XML overview, Web Services technologies, UDDI, SOAP vs RESTful web services, web service clients, and security.

### Objectives

Delegates who complete this course will be able to:

- Understand Web Service technology and usage.
- Write Web Services.
- Write Web Service clients.

### Intended Audience

Experienced Java programmers and developers who need to develop web services for enterprise applications using the JEE environment. This course is aimed at companies and individuals who are already doing JEE development and need training in the specific web services aspects of the JEE architecture.

### Prerequisites

A working knowledge of Java is essential. A good start is to attend our Java Programming course (or equivalent) and have 6 months Java programming experience.

### Course Contents

*The lecturer reserves the right to modify the contents of the course to suit the needs of the delegates.*

**Web Services Overview.** • Why use Web Services in enterprise applications. • Service-Oriented Architecture (SOA). • Web services as a realisation of SOA. • Web Service architecture, initiatives and specifications. • Web Service application programming interfaces (APIs).

**Web Services Technologies.** • Web Service Description Language (WSDL). • Simple Object Access Protocol (SOAP). • SOAP With Attachments API for Java (SAAJ). • Universal Description, Discovery and Integration (UDDI). • Java API for XML-Based Remote Procedure Calls (JAX-RPC). • Java API for XML Web Services (JAX-WS). • Java Architecture for XML Binding (JAXB). • WS-Metadata 2.0 standard annotations. • Web Services for Remote Portlets (WSRP). • RESTful web services. • SOAP vs REST.

**Overview of XML (Extensible Markup Language).** • XML syntax. • XML namespaces. • Document Type Definition (DTD). • XML schemas. • Extensible Stylesheets Language Transformations (XSLT). • Java API for XML Processing (JAXP). • Java API for XML Binding (JAXB).

**WSDL and UDDI.** • What is the Web Services Description Language (WSDL). • Creating WSDL files. • UDDI and the Service Registry.

**Web Services Endpoints and Clients.** • Exposing servlets as web service endpoints. • Exposing EJBs as web service endpoints. • Java-to-WSDL vs WSDL-to-Java development. • Accessing web service functionality from clients.

**Security and Exceptions.** • Handling exceptions in web services. • User-defined exceptions. • Web services security requirements and solutions. • Basic authentication. • Message-layer security.

**Best Practices and Design Patterns.** • Best Practices and choosing the correct WS technology. • The use of JEE design patterns in web services architecture. • The practical application of JEE design patterns.