# Course Outline

**Developing RESTful Web Services in Java**

**Course Overview:**

The Developing RESTful Web Services in Java training course provides students with an in-depth examination of how how to build RESTful web services using the Java API for RESTful Web Services, or JAX-RS.

RESTful Web Service Development with Java begins with an overview of REST web service design and development in the Java EE platform, and then moves into creating web services using the JAX-RS API. Along the way, you’ll learn about the advantages and disadvantages of REST. You’ll also learn how to work with XML and JSON in a JAX-RS service implementation.

The Developing RESTful Web Services in Java training course assumes students have a basic familiarity with distributed computing concepts, JSON, and have a proficient command of the Java Programming Language.

**Productivity Objectives:**

After this course, you will be able to:

* Describe the advantages and disadvantages of the REST architecture for web services
* Use JAX-RS to develop RESTful services
* Control dispatching to service methods based on URL, content type, and HTTP methods
* Use JAX-RS to build a simple REST client
* Understand how to properly handle exceptions within a RESTful web service

**Course Duration:** This course will be delivered in 2 Days

**Course Outline:**

**Day 1**

* Overview of REST Services
  + Using HTTP for distributed computing
  + Benefits
  + Key concepts of API design
* Working with JAX-RS
  + Responsibilities of the toolkit
  + A first REST service
  + Core Annotations for request routing
  + Injecting query parameters
  + Injecting headers and cookies
  + Service classes and methods
  + Extracting data from the request URI
  + Matching URIs with regular expressions for request routing
  + Handling complex/compound URIs
* Configuring JAX-RS implementations
  + Application class
  + Scanning
  + ApplicationPath
  + Grizzly container
* JAX-RS service object lifecycle
  + @Singleton
  + Per-request data injection
  + Injectable data
  + Defaulting Injected data
  + Additional injections with @Context

**Day 2**

* Advanced Response Control
  + The Response class
  + Response.Builder
  + Controlling status
  + Controlling content type
  + Cookies and headers
* Structured Data Requests and Responses
  + Overview of JAX-B
  + JAX-RS Providers
  + Receiving and returning structured Entities
  + Configuring Jersey for JSON conversions
  + Complex media type management
  + Non-standard HTTP method handing
* Handling Errors
  + Status codes
  + WebApplicationException
  + ExceptionMapper
* Overview of JAX-RS Client API