**Introduction to Java Servlets**

* **Describe web applications, CGI, and the role of Java**
* **Describe benefits of Java servlet technology**
* **Create a simple Java Servlet**
* **Define three-tier architecture**
* **Define Model-View-Controller (MVC) architecture**

**Introduction to Java Server Pages**

* **Describe why Servlets are not the whole solution**
* **Describe essentials of JSPs**
* **Understand the fundamentals and reasons for MVC architecture**

**Implementing an MVC Design**

* **Code a controller using a servlet**
* **Code a view using a JSP**
* **Forward control from a servlet to a JSP**
* **Understand fundamentals of EL**
* **Implement a simple MVC system**

**The servlet's environment**

* **Understand more details of the HTTP protocol**
* **Understand fundamentals of HTML forms**
* **Understand fundamentals of the HttpServlet and related APIs**
* **Write code that manages client sessions and cookies**

**Container facilities for servlets and JSPs**

* **Understand the purpose and structure of deployment descriptors**
* **Control context root and servlet mapping**
* **Create and use context and init parameters**
* **Use annotations to configure servlets**

**More view facilities**

* **Understand the four data scopes**
* **Understand and use EL dot and array access operators with Java Beans, arrays, and collections**
* **Understand and use EL implicit objects**
* **Create and use arithmetic expressions in EL**
* **Identify the need for iteration and selection in the view, and use JSTL tags to address those needs**

**Developing JSP pages**

* **Understand the origins, benefits, and weaknesses of JSPs**
* **Describe JSP technology, the conversion of JSPs to servlets, and the lifecycle of JSPs**
* **Understand JSP scripting elements, declarations and directives**
* **Use JSP implicit variables**
* **Understand and use jsp: tags**

**Developing JSP pages using custom tags**

* **Relate the JSTL to common job roles in web application development and understand the use of tags in JSP development**
* **Recognize correct syntax for tags**
* **Configure a JSP to use tags from the JSTL**
* **Write JSP code using several standard tags**
* **List capabilities of JSTL tags/span>**

**More Controller facilities**

* **Understand the servlet lifecycle**
* **Describe and use more advanced elements of the servlet APIs**
* **Create filters and use them in web applications**

**More options for the Model**

* **Understand the roles of JDBC and JPA**
* **Understand the many elements that make up the model**
* **Understand fundamentals of connecting to a database using JDBC or JPA**

**Asynchronous web applications**

* **Understand the interactions that are essential to asynchronous web pages**
* **Understand the role of AJAX-style client side programming**
* **Implement asynchronous servlets using the facilities of Java EE 6**

**Web application security**

* **Understand the role of the container in security**
* **Describe and implement four authentication models**
* **Force the use of encryption between a web application and the client browser**
* **Understand the role of JAAS in pluggable/extensible authentication for web applications**

**Introducing the Course**

* Reviewing the Java SE and Java EE Curriculum
* Getting Acquainted with Other Students
* Reviewing Course Objectives
* Discussing 5 Day Course Schedule
* Describing the Format that the Class will Use
* Introducing Web Application Technologies
* Describing the Java EE 6 Web Profile

**Web Application Essentials**

* Describing Java Servlet Technology
* Describing JavaServer Pages Technology
* Understanting the Model-View-Controller (MVC) Architecture
* Explaining Java EE Containers and Java Application Servers
* Describing the Web Application Development Process
* Identifying the Essential Structure of a WAR File

**Developing a Servlet**

* Describing the HTTP Headers and Their Function
* Explaining the Request and Response Processes
* Understanding the Life Cycle of a Servlet
* Listing Injection and Lifecycle Method Annotations
* Understanding the Threading Model of a Servlet
* Developing a Servlet to Respond to Requests from the Client Browser

**Handling Form Requests in Servlets**

* Using HTML Forms To Collect Data From Users and Send it To a Servlet
* Understanding How Form Data Is Sent in an HTTP Request
* Developing a Servlet that Retrieves Form Parameters
* Understanding and Using HttpSession Objects
* Using Cookies for Session Management
* Using URL Rewriting for Session Management

**Configuring Your Web Application**

* Describing the Purpose of Deployment Descriptors
* Creating Servlet Mappings to Allow Invocation of a Servlet
* Creating and Access Context and Init Parameters
* Using the @WebServlet and @WebInitParam Annotations
* Using the ServletContextListener Interface
* Describing the Different Scopes in a Web Application
* Handling Errors Using a Deployment Descriptor

**Implementing an MVC Design**

* Implementing the Controller Design Element Using a Servlet
* Implementing the Model Design Element Using a POJO
* Implementing the View Design Element Using a JSP and Expression Language (EL)
* Connecting the model, View, and Controller Elements to Implement a Working MVC Solution
* Injecting a Service in a Controller

**Developing Components with JavaServer Pages Technology**

* Describing JSP Page Technology
* Writing JSP Code Using Scripting Elements
* Writing JSP Code Using the Page Directive
* Writing JSP Code Using Standard Tags
* Writing JSP code using Expression Language
* Configuring the JSP Page Environment in the web.xml File
* Writing an Error Page by Using JSP

**Developing JSP Pages by Using Custom Tags**

* Designing JSP Pages with Custom Tag Libraries
* Using a Custom Tag Library in JSP Pages
* Describing JSTL Tags

**Using Filters in Web Applications**

* Describing the Web Container Request Cycle
* Describing the Filter API
* Developing a Filter Class
* Configuring a Filter in the web.xml File

**More Servlet Features**

* Using the Asynchronous Servlet Mechanism
* Using JavaScript to Send an HTTP Request from a Client
* Processing an HTTP Response Entirely in JavaScript
* Combining These Techniques to Create the Effect of Server-push
* Handling Multipart Form Data

**Implementing Security**

* Describing a Common Failure Mode in Security
* Requiring that a User Log in Before Accessing Specific Pages in Your Web Application
* Describing the Java EE Security Model
* Requiring SSL Encrypted Communication for Certain URLs or Servlets

**Integrating Web Applications with Databases**

* Understanding the Nature of the Model as a Macro-pattern
* Implementing Persistent Storage for Your Web Applications Using JDBC or Java Persistence API