# Oracle SOA Suite 12c Development (5 Days)

This course provides a 5-day hands-on introduction to Oracle SOA Suite version 12c.  It is intended to include everything a new Oracle Integration developer will need to know to be productive developing SOA Composites, using the adapters and JDev, securing, testing and deploying composites, processes and services.

**1. Introduction to Service Oriented Architecture**
- Service-Oriented Architecture (SOA) and Services
- Composite Applications and Service Component Architecture (SCA)
- Review Services and Key Standards (REST, SOAP, WDSL, XML)
- REST vs SOAP
- Oracle SOA Suite 12c Platform and Components
- SOA Suite 12c Architecture and Tools
- Installing SOA Suite 12c for Developers

**2. Composite Applications**
- Service Interfaces and Interaction Patterns
- XSD and Web Services Description Language (WSDL)
- SCA, Composites and composite.xml
- Mediator, Routing and Transformation
- Technology Adapters (messaging, database, file, sockets)

**3. Managing and Monitoring a Composite Application**
- Deploying Composite Apps: SAR files and partitions
- Versioning Applications
- Configuration Plans
- Composite Application Lifecycle Management
- Managing SOA Applications
- Testing Composite Apps in JDev and EM, Audit Trails

**4. Managing Data**
- Data Standards: XML and XSD
- Transformations: XSLT, XPath, XQuery
- Using Attributes
- XPath Functions
- The JDeveloper Mapper
- Testing Transformations
- The Native Format Builder
- File Adapter

**5. Adapters: Database and JMS**
- Adapter Architecture (JCA and Binding Components)
- Adapter Processing and Monitoring
- JMS Messages and the JMS Adapter
- Adapter Setup and Configuration in WebLogic
- Configuring JMS Resources with WebLogic Administration Console
- Database Adapter: Setup and Configuration
- Transactions and Adapters (JTA)

**6. REST**
- Introducing REST Services
- Comparing REST and SOAP Web Services
- Invoking REST Services with the REST Adapter
- Exposing REST Interfaces
- REST in SOA Composites and OSB

**7. Long-Running Processes (BPEL)**
- BPEL 2.0 Overview and Artifacts
- BPEL Process Source View
- Variables, Assign and XPATH
- Sequence and Scope
- JDev BPEL Designer
- Invoking a Service
- BPEL Process Testing (In JDev and EM)

**8. More BPEL Activities**
- Branching: If and Switch
- Parallel and Sequential Looping with Flow, FlowN and Foreach
- Wait, Pick and While • XML Arrays
- BPEL Architecture: Synchronous and Asychronous Processes
- Deployment Descriptors• Architecture: When to use BPMN, BPEL and OSB

**9. Fault Handling**
- Introduction to Faults
- Fault Management in Mediator
- Fault Handling in BPEL
- Compensation
- SOA Error Hospital and Fault Management Framework
- Fault Policies
- Managing Faults in EM
- Fault Handling Tips and Tricks

**10. Workflow and Human Tasks in SOA Composites**
- Human Tasks in Composite Applications
- Adding a Human Task to a BPEL Process
- Task Display Forms
- The Worklist Application
- Notification Services (UMS and Email Notifications)

**11. Oracle Business Rules**
- Oracle Business Rules and the Decision Service
- If/Then Rules and Facts
- Decision Tables
- Rulesets and Dictionaries
- Creating Rules in JDev
- SOA Composer for Run-Time Rule Editing
- Testing Business Rules

**12. SOA Testing and Debugging**
- Composite Test Framework
- Test Suites and Test Cases
- Testing Inbound Messages
- Emulating Outbound, Fault, and Callback Messages
- Running Test Cases
- Examining Results of a Test Run
- SOA Load Testing
- Using the SOA Debugger to Debug Composite Applications
- Testing Best Practices

**13. SOA Security**
- Web Service Security
- Oracle Web Services Manager and Security Policies
- Identity Propagation
- Defining Security Policies in JDeveloper
- Defining Security Policies in EM

**14. Business Events**
- Events and the Event Delivery Network (EDN)
- Event Driven Architecture: JMS and EDN Patterns and Best Practices
- Defining Business Events
- Publishing Events
- Subscribing to Events
- Managing and Monitoring Events

**15. Team Development**
- Using the Design-time Meta Data Services (MDS) Repository to share files
- Introducing Templates
- Creating and Using Project, Service Component, and Scope Activity Templates
- Introducing BPEL Subprocesses
- Creating and Using Standalone Subprocesses
- Creating and Using Inline Subprocesses
- Describing the Differences Between Templates and Subprocesses

## 16. Other Topics
- BAM and Other Monitoring Tools
- Governance
- Additional and Related Components: MFT, B2B, ODI
- SOA Suite Roadmap (new features in 12c, 12.2, futures)
- Advanced XSLT Mapper Features: Working with Large Documents