

TT7110 Service-oriented Architecture – SOA Analysis (3 days)



Geared for business and systems analysts, **SOA Analysis** is a three day in-depth course that explores what SOA is, the impact of SOA, what it means in terms of today's systems and architectures, and how to apply the concepts in identifying business and systems services.

This course was designed for software analysts who wish to understand what services and service-oriented architectures are and what best practices and processes to use in supporting the design and implementation of SOA-based applications. This course presents a strong perspective on services as an essential and important part of enterprise systems as well as how to identify, design, and develop of complex services using sound analysis and design techniques.

► Course Objectives: What You'll Learn

Students who attend **SOA Analysis** will leave the course armed with the required skills to support the design and implementation of realistic SOA-based business application projects. This course provides coverage of advanced SOA concepts and practices for enterprise applications. The goal of this course is to empower analysts with the knowledge and foresight they need to support the design of realistic SOA-based business application projects.

After successfully completing this course, students will be able to:

- Explain the business impact of SOA
- Understand the history of services-oriented architecture and what design processes led up to SOA
- Discuss the challenges to adopting SOA in the enterprise
- Apply the concepts and principles of SOA to on-going and future projects
- Explain how Enterprise Application Integration affects the reuse of existing applications
- Relate what SOA means from an architectural perspective
- Discuss business process analysis and its relation to BPEL
- Understand the difference between OO analysis and design and SOA analysis and design
- List the various roles involved in Service-oriented Analysis and Design (SOAD)
- Perform SOA Analysis to identify useful and manageable services
- Understand the importance of business process modeling
- Explain governance and how it applies to SOA and IT in general
- Compare SOA best practices
- Understand the responsibilities crucial to governance
- Understand, at a high level, what web services bring to the table

The course provides a solid foundation in essential terminology and concepts, extended and built upon throughout the engagement. Processes and best practices are discussed and illustrated through both discussions and group activities.

COURSE SNAPSHOT

Duration: 3 days
Focus: SOA Analysis
Targeted Audience: Business and Systems Analysts
Skill level: Intermediate and beyond
Course Format: Extensive Hands-On Analysis and Design Labs; Expert lecture combined with open discussions and high-level demonstrations
Language / Tools: BPEL/This course is programming language independent/neutral
Delivery Format: Available for onsite private classroom presentation, or live online / virtual presentation
Customizable: Yes

Attending students will be led through a series of advanced topics comprised of integrated lectures, extensive hands-on lab exercises, group discussions and comprehensive demonstrations. Please see below for additional information about the hands-on lab work.

► Audience & Pre-requisites: Who Should Attend

This is an **intermediate and beyond** level SOA training course, designed for analysts who need to identify and support the design of SOA applications and infrastructures. We will explore and apply the terminology, the specification, the processes and technologies specific to SOA.

Attendees should have an extensive working knowledge with analyzing and working with enterprise applications. This is not a programming class.

► Related Courses – Suggested Learning Path

Take Before: Students should have basic understanding and working knowledge in the following topics, or attend these courses as a pre-requisite:

- **TT4100 Understanding Internet Architectures**

Take Instead: We offer other courses that provide different levels of knowledge or that blend web services development with other pertinent topics:

- If your team needs high level web services training, the **TT7000 Understanding SOA** and/or **TT7005 Understanding Web Services** courses may be more appropriate.
- For those members of your team that are more analysis and design-oriented, please consider **TT7100 Service-Oriented Architectures Analysis and Design**

Take After: We offer a variety of introductory through advanced security, development, project management, engineering, architecture and design courses. Students may want to consider the following topics as a follow-on to this course.

- Additional web services and SOA topics – Intro through Advanced
- Architecture & Analysis courses
- Software Design and Secure Software Design tracks

Please note all courses may be modified to suit your unique requirements. Please contact us for recommended next steps tailored to your longer term education, project or development objectives.

► **Experiential Learning: Hands-On Labs**

This workshop is about **50% dynamic lab exercises** and **50% lecture**. Throughout the course students will be led through a series of progressively advanced topics, where each topic consists of lecture, group discussion, comprehensive hands-on lab exercises, and lab review.

Multiple detailed lab exercises are laced throughout the course, designed to reinforce fundamental skills and concepts learned in the lessons. At the end of each lesson, students will be tested with a set of review questions to ensure that he/she has fully understands that topic.

► **Student Materials: What You'll Receive**

Our robust course materials include much more than a simple slideshow presentation handout. Trivera Technologies Student materials include a comprehensive hard-copy course manual, complete with detailed course notes, code samples, diagrams and current reference materials, all directly related to the course at hand, indexed for ease of use.

Step-by-step lab instructions and project descriptions are clearly illustrated and commented for maximum learning and ease of use.

Our course kits are designed to serve as a useful reference set, long after we leave your classroom.

► **Delivery Environment & LoadNGo™ Classroom Set Up**

Although this training is skills-centric, this course may run using a variety of IDEs and application server combinations, including but not limited to: JBoss 4.x; BEA WebLogic Server 8.1/9.X; 10; IBM Rational Application Developer (6.x or 7.x); Oracle JDeveloper 10g; JBuilder; Apache TomCat; Eclipse Web Tools Project, MyEclipse; and others.

Our lab guides are complete with software-specific instructions, screen shots and detailed tutorials for using the software you select. In most cases we can easily port our classes to run in the environment of your choosing.

For course deliveries or virtual presentation using open-source tools, we'll provide our unique **LoadNGo Instant Classroom Kit**, which enables students to run the entire course off of a DVD that hosts the entire course set up software, labs, and other pertinent useful educational resources, whitepapers and more. You only need to provide the hardware and appropriate O/S, and we'll do the rest. No installation needed. **Great for secure environments.** Minimum set up burden for your team or firm, with maximum results for your students.

No matter which set up option or software your firm requires, we're pleased to provide a detailed set up guide for all private or on-site courses, and as much assistance as you require to prepare your students or classroom for the course. Our support personnel and instructors can be contacted for any advice you may require to prepare your classroom and/or students for attendance.

► **Optional Pre-Testing & Assessment**

We work with you to ensure that your resources are well spent. Through our basic pre-testing, we ensure your team is up to the challenges that this course offers. We will work with you to come up with the best solution to ensure your needs are met, whether we customize the material, or devise a different educational path to prepare for this course.

Please contact us for details about our online pre and post test assessment services, custom managed training plans for one student or your entire organization, and our custom online training program management system for monitoring the courses or progress while skilling your students of all experience levels.

Workshop Topics Covered

Need more info? Please note that a more detailed outline of the course table of contents, lists of lab exercises and project descriptions is available. Please contact us at Training@triveratech.com for info.

Need courseware? This course is fully customizable, and also available for license with complete support for qualified organizations. Please contact Courseware@triveratech.com for details

Session: SOA Overview

- Introduction to SOA
- Business impact/ROI
- History
- Myths/Reality
- SOA and client/server
- SOA and web services
- Adoption issues

Session: SOA: the Business Proposition

- Web services standards
- ESBs
- Leveraging business processes
- Challenge to adoption
- The SOAD Process
- Roles and Skills

Session: SOA: an Architectural Perspective

- SOA Design Principles
- RPC vs. REST
- Web services, SOAP, and WSDL
- Architectural Issues
- SOA Maturity Model

Session: SOA: a Development Perspective

- The SOAD Process
- Architecture
- OO/UML
- Services, operations and data

- Policies
- W3C standards
- Web services standards
- Testing

Session: Service-Oriented Architecture

- Principles
- Business Process-driven development
- Roles
- Messaging
- Transactions
- Security
- Business modeling
- Design issues
- EAI
- ESB
- Web services
- RPC vs. REST
- Web services, SOAP, and WSDL
- Integrating legacy applications
 - Extending the lifetime of legacy apps
- External integration
- Governance
 - What needs to be governed and what is already governed?
 - Governing IT vs. SOA
 - Continuous improvement
- Strategies

Session: Defining Business Processes Using BPEL

- BPEL Overview
- Top-down Process Design
- Bottom-up Process Design
- Using WSDL
- Process Elements and Properties
- Select Expression Language
- Partner Links
- Variables
- Fault Handler
- Compensation Handlers
- BPEL Process as a Service

Session: Service-oriented Analysis and Design

- OOAD vs. SOAD
- Analysis
- Design
- Implementation
- Process

Session: SOA Analysis

- Use cases
- Identifying services
- Operations and data formats
- Error conditions
- Service reusability
- Identifying processes
- Best practices

Session: SOA Design

- Business process modeling
- XML and XML Schema
- Asynchronous services
 - Callbacks
 - Messaging
 - Non-blocking calls
- Best practices

Session: SOA Best Practices

- Planning
- Standardizing
- Designing
- Managing
- Implementing

Session: SOA Governance

- Governance Overview
- Importance
- Responsibilities
- Implementation

► Why Work With Trivera Technologies?

- **We provide a solid web services development foundation.** Students will learn how to develop (and reuse!) essential Java and web services development and design skills and concepts properly, using best design practices, grounding them for advanced curriculum. Students will be prepared for designing and implementing real solutions, right after the class ends. Students will learn the importance of developing and maintaining well-designed web services and SOA applications.
- **Our courses are focused - no "fluff" included.** We offer more than a "laundry list" approach to teaching. All lessons have clear objectives, are fundamental to core development and design practices, and are reinforced by hands-on labs and solid practical examples. Each lesson has performance driven objectives that ensure students will learn technologies and skills core to fundamental application design – nothing more, nothing less. All labs are take-home, and all solution code is presented in an easy to use self-study format for future use and review.
- **Our materials are comprehensive, and current.** Our comprehensive manuals include not only a hard copy of the course presentation, but also detailed reference notes, pertinent diagrams and charts, current lists of suggested online resources and articles, and often technical tutorials or white papers geared to the topics at hand.
- **We set you up!** Hands-on courses also include our unique materials for each student, complete with our **LoadNGo Instant Classroom** course set up DVD, software, and a multitude of learning resources that complement the course. Run the course right off the DVD – minimal set up for your company – maximum results for your students.
- **True content ownership gives us flexibility & quality above the rest.** These course materials are wholly-owned by our company and fully customizable - at little or no cost - to help you best meet your learning objectives. We have many dedicated experts available worldwide to instruct your team, and can provide services around the globe, either locally or virtually. We work closely with you to produce the most effective events and materials for your team, within your desired timeframe and budget.
- **We have to adhere to higher standards.** As a courseware provider, our content and hands-on lab materials are licensed internationally by dozens of firms, and are therefore subject to very stringent quality requirements. Not only will your organization benefit from our own technical team's technical expertise, but also the feedback of hundreds of students and trainers using these materials, worldwide, on a regular basis. This unique fact guarantees that our materials are not only robust and interesting, but also technically correct, current and of the highest quality and usability.
- **We bring years of practical, current experience into the classroom and content.** Our instructors and course authors are also skilled mentors, Java, J2EE / JavaEE, .Net, SOA, and web services developers, architects and security-oriented professionals. We believe that learning, using and maintaining solid software execution and delivery methods are as important as gaining sharp coding skills. Best Practices for software development and execution, beyond technical coding skills, are enforced throughout all of our courses and discussions. Our team brings this extensive experience into every classroom and engagement.
- **We're skills-centric.** Although our team has extensive experience using a variety of tools and solutions, our core content is "technology-centric". Our aim is to teach you the best skills and solutions out there – not to sell you software from any particular vendor.
- **We're Java & J2EE authors and industry speakers.** Our team was selected to write the online *J2EE, EJB, EJB CMP-CMR and Web Services Tutorial Series for IBM developerWorks®* (www.ibm.com) These are the same instructors who train our classes and author the courseware. Most of our trainers/consultants have also authored additional articles on web services, EJB< Struts, J2EE and advanced Java topics, and are recognized speakers and presenters on the industry technical seminar circuit. Our team is comprised on several successful published authors. Members of our team have written or contributed to: *Eclipse Kick Start, Mastering Eclipse; Professional Jakarta Struts; Using Java Tools for Extreme Programming; Mastering Resin; Mastering TomCat and others.*
- **Our services are guaranteed.** Whether you're a stakeholder organizing your firm's educational services, a student in our live or virtual classroom or a trainer using our materials to educate your own client or team – **Our core mission is to make YOU a success in the classroom.**

► For Additional Information

Need dedicated training? All courses can be brought onsite for a **private presentation**, customized to suit your unique requirements or goals. Please contact Training@triveratech.com for course details, Public Schedule dates and locations, and Special Discount Offers.

Need courseware? Let us take the risk out of your classroom delivery! All materials are also available for corporate license with complete instructor support and free corporate branding. We guarantee our pricing and service. Samples of our course materials, as well as live client references for all of our services are available upon request. Please contact Courseware@triveratech.com for details.



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 Female-Owned Small Business Concern
 GSA Schedule # GS-35F-0188T
 Please contact us for details & pricing.

For more information about our training, mentoring or courseware licensing options, or to see our complete list of course offerings and services, please visit us at www.triveratech.com, email Training@triveratech.com or call 609.953.1515.