

# **Arcitura Certified Microservice Architect**

Duration: 10 days

Prerequisites: Working Experience on API and Microservices

## **Modules:**

### **1. Module 1: Fundamental SOA, Services & Microservices**

#### *Topics Covered:*

- Business and Technology Drivers for SOA, Services, and Microservices
- Strategic Goals and Benefits of Service-Oriented Computing
- Introduction to Services and Microservices
- Fundamental Characteristics of a Service-Oriented Architecture
- Service-Oriented as a Design Paradigm
- Introduction to Service Layers, Service Models, and Service Compositions
- Service Inventories, Service Layers, and Service API Governance and Management
- Introduction to Common Service Technologies
- Introduction to Cloud Computing and Cloud Services
- Adoption Impacts and Requirements

### **2. Module 2: Microservice Technology Concepts**

#### *Topics Covered:*

- Comparing Service Implementation Mediums
- Service Roles and Service Agents
- Message Exchange Patterns and Service Activities
- Basic XML, XML Schema, JSON, and JSON Schema Concepts
- HTTP Methods, Response Codes, and Headers
- Basic REST Service Concepts
- Hypermedia and Late Binding
- Basic WSDL and SOAP Concepts
- WS-\* Technologies
- Web Service Contracts, Messaging, and Registries
- Cloud Computing Concepts
- Public, Private, and Hybrid Clouds

- IaaS, PaaS, and SaaS

### 3. **Module 9: Fundamental Microservice Architecture & Containerization**

- *Topics Covered:*

- Introduction to Microservice Architecture
- Common Microservice Design Challenges
- Microservices and Design Granularity
- Microservice Guiding Design Principles
- Introduction to Containerization
- Containerization vs. Virtualization
- Fundamental Container Architecture Elements
- Container Engines, Build Files, Images, and Networking
- Microservice Automation, Logging, and Monitoring
- Microservice Instance Registration
- Scaling Technology, Basic Scalability Types, and Mechanisms
- Technology Drivers for Cloud-based Microservice Deployments
- Micro Task Abstraction and Segregation
- Rich Containers and Logical Pod Containers
- DevOps Practices and Benefits
- DevOps Stages and Toolchains
- Domain-Driven Design and Microservices

### 4. **Module 10: Advanced Microservice Architecture & Containerization**

- *Topics Covered:*

- Microservice Compositions and Compositor Services
- Autonomous Proxy Services
- Shared Isolated Databases
- Microservice Layers and Isolation Levels
- Pre-Defined Data Views
- Microservice Instance Registrations
- Event-Driven Messaging
- Microservice Data Processing
- Microservice State Management and Caching

- Microservice Security Architecture
- Microservice Security Controls and Patterns
- Microservice Testing and Test Automation
- Microservice Resiliency and Reliability
- Dynamic Scalability Models
- Microservice Deployment and Orchestration
- Container Orchestration Platforms
- Service Mesh Architecture
- Microservice Observability and Monitoring

## 5. **Module 11: Microservice Architecture & Containerization Lab**

- *Topics Covered:*

- Case Study Backgrounds (e.g., "Cube Cars" and "XYZ Travel Agency")
- Lab Exercise Scenario and Requirements
- Microservice Design and Architecture Exercises
- Containerization and Deployment Exercises
- Microservice Scaling Architecture
- Redesigning Microservices
- Performance Optimization
- Security Implementation
- Testing and Automation
- Monitoring and Logging Implementation