- 1. Fundamental SOA, Services & Microservices
 - Business and Technology Drivers for SOA, Services and Microservices
 - Strategic Goals and Benefits of Service-Oriented Computing
 - Plain English Introduction to Services and Microservices
 - Fundamental Characteristics of a Service-Oriented Architecture
 - Understanding Service-Orientation as a Design Paradigm, including coverage of the Four Pillars of Service-Orientation
 - Introduction to Service Layers, Service Models and Service Compositions
 - Service Inventories, Service Layers and Service API Governance and Management
 - Introduction to Common Service Technologies, including API Gateways, Virtualization, Containerization
 - Introduction to Cloud Computing and Cloud Services
 - Adoption Impacts and Requirements, including considerations for Governance, Infrastructure, Performance and Standardization
- 2. Microservice Technology Concepts
 - 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, including Properties and Constraints
 - REST Services, Contracts, Resources and Messaging
 - Hypermedia and Late Binding
 - Basic WSDL and SOAP Concepts
 - WS-* Technologies
 - Web Service Contracts, Messaging and Registries
 - Cloud Computing Concepts
 - Vertical and Horizontal Scaling
 - Multitenancy, Elasticity and Resiliency
 - On-Demand Usage, Ubiquitous Access and Measured Usage
 - Public, Private and Hybrid Clouds
 - IaaS, PaaS and SaaS

- 3. Fundamental Service API Design & Management
 - Introduction to APIs and API Roles
 - Public, Private and Partner API Models
 - The Service API Lifecycle
 - Decoupled Contracts and Service Façades
 - Contract Centralization and Service Agents
 - Positive and Negative Service Coupling Types
 - Text-based Data Serialization Formats (XML, JSON)
 - Binary Data Serialization Protocols (Apache Avro, Thrift, Google Protocol Buffer)
 - REST APIs and REST Properties
 - Endpoint Redirection, Entity Linking and Idempotent Capabilities
 - Lightweight Endpoints and Uniform Contracts
 - API Gateways and Service Brokers
 - Data Model and Format Transformation, Protocol Bridging
 - Intermediate Routing, Brokered Authentication and Multi-Channel Endpoints

4. Advanced Service API Design & Management

- Understanding gRPC for (.proto and XML)
- Unary RPC, Client/Server Streaming RCP and Bidirectional RPC
- Understanding GraphQL, Data Requests and Fetches, Caching
- Understanding Falcor, Falcor vs. GraphQL, Request Batching
- Understanding Thrift (Processor, Protocol and Transport Layers)
- Concurrent Contracts, Contract Denormalization and Canonical Schema
- Schema Centralization, Policy Centralization and Canonical Protocol
- Dual Protocols and Legacy Wrappers
- Messaging Metadata and State Messaging
- Service Mesh Model, Library, Proxy and Sidecar
- Service Mesh vs. API Gateway
- Service API Management
- Decomposed Capability, Distributed Capability and Proxy Capability
- Validation Abstraction and Partial Validation

5. Service API Design & Management Lab

- Reading Exercise 14.1: Case Study Background: Handy
- Lab Exercise 14.2: Define Lines of Communication
- Lab Exercise 14.3: Define Service API View

- Lab Exercise 14.4: Define Communication Support in Processing Logic
- Lab Exercise 14.5: Identify Coupling Types
- Lab Exercise 14.6: Identify Hidden Coupling Issues
- Lab Exercise 14.7: Solve Coupling Problems
- Reading Exercise 14.8: Order Processing Service APIs
- Lab Exercise 14.9: Optimize Service API for Performance
- Lab Exercise 14.10: Deal Service Extension
- Lab Exercise 14.11: Design Product Service
- Lab Exercise 14.12: Enhance Product Service Architecture