



# WCF Programming for Experienced C# Programmers

**Duration:** 21 hours

**Prerequisites:** Prior experience with C# is required.

**Course Description:** This course provides students with hands on experience using Visual Studio to create service-oriented applications using Windows Communication Foundation (WCF) and C#. Students learn how to leverage the power of the .NET Framework to build Web Service applications that interoperate with consumer applications including other platforms and technologies. Students will learn how to configure addresses, bindings, and service and data contracts as well as how to use various techniques for developing endpoints to allow communication between consumer applications and the web services provider.

The course includes coverage of instance management, fault handling, and security. Students will learn how to use the WCF Routing Service for load balancing, content-based routing, and protocol bridging.

Comprehensive labs and exercises provide the students with experience creating both content server and consumer applications.

## Students Will Learn

- ➔ Introduction to WCF
- ➔ Service Addresses
- ➔ Selecting Binding Options
- ➔ Managing a Service Instance
- ➔ Defining Service Contracts
- ➔ Defining Data Contracts
- ➔ Endpoints
- ➔ Fault Handling
- ➔ Securing WCF Applications
- ➔ WCF Routing Configuration

## Overview

### Introduction to WCF

- WCF Web Services Architecture
- Addresses, Bindings and Contracts
- WCF Service Libraries
- WCF Test Host and Test Client
- `ChannelFactory` Class
- Configuring WCF Clients
- Standard Endpoints

### Selecting Binding Options

- Binding Selection
- HTTP Bindings
- TCP and Named Pipe Bindings

### Service Addresses

- Address Types
  - Endpoint Address
  - Base Address
  - MEX (Message Exchange) Address
- Metadata Exchange
- Address Formats

### Managing a Service Instance

- Configuring Behaviors
- Service Instance Models
  - Per-Call

- MSMQ Binding
- `BasicHttpBinding` Class

- Per-Session
- Singleton
- Threading Considerations
- Consuming WCF Application Services with .NET Applications
- Consuming WCF Application Services on foreign platforms

### Defining Service Contracts

- Service and Operation Contracts
- Creating Contracts at the Class and Interface Level
- Using `ServiceContractAttribute`
- Types of Service Contracts
  - Oneway
  - Request-Reply
  - Duplex
- Callbacks
- Asynchronous Proxies
- WSDL Files
- Contract Inheritance and Overloading
- Implementing Message Exchange Patterns
- Versioning

### Defining Data Contracts

- Using `DataContractAttribute`
- Mapping Data to Schema
- Returning Arrays
- Returning Generic Collections
- Data Serialization
- Versioning

### Endpoints

- Endpoints Explained
- Working with Endpoints
- Configuring Endpoints
- Using Multiple Endpoints

### Fault Handling

- `FaultException` class
- `FaultCode` class
- `FaultContract` class
- Client Exception Handling
- Including Exception Details

### Securing WCF Applications

- Security Issues with Services
- Types of Security
  - Transfer Security
  - Transport Security
  - Message Security
- Configuring Security on Client and Server
- Managing Certificates
- Configuring Client Certificates
- Sending Credentials

### WCF Routing Configuration

- WCF Routing Service
- Hosting the Service
- Consuming the Service
- Service Contract and Implementation
- Routing Contracts
- Message Filters
- Common Routing Scenarios
  - Load Balancing
  - Content Based Routing
  - Service Partitioning
  - Protocol Bridging

## Related Bootcamp

Track	Duration	Price
Microsoft .NET Developer: C#	5-course track	\$6,000
	6-course track	\$7,200

7-course track	\$8,400
8-course track	\$9,600
9-course track	\$10,800
10-course track	\$12,000

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