

## WCF Programming for Experienced VB.NET Programmers

**Duration:** 3 Days

**Price:** £645

**Discounts:** For multiple course purchases, please [contact us](#) for applicable discounts.

**Delivery Options:** Perform training at your own pace via our [on-demand training](#) option or attend regularly scheduled live courses via [remote-live attendance](#).

### Students Will Learn

- Service-oriented architecture
- Web Services implementation
- Binding options
- Defining service contracts
- Defining data contracts
- WCF security options
- Hosting WCF services
- Choosing WCF bindings
- Managing service instances
- Fault handling
- WCF routing control

### Course Description

This course provides students with hands on experience using Visual Studio to create service-oriented applications using Windows Communication Foundation (WCF) and VB.NET. 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.

This course provides thorough coverage of the use of **Windows Communication Foundation** for service-oriented applications. Students requiring additional coverage of **ASP.NET Web Forms, ASP.NET MVC, Windows Forms** or **Windows Presentation Foundation** should contact HOTT or refer to HOTT's [complete course listing](#) for additional training courses.

Students unfamiliar with the VB.NET programming language should register for the 5-day [WCF Programming Using VB.NET](#) course instead.

## Course Prerequisites

Prior experience with VB.NET is required.

## Course 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
- MSMQ Binding
- `BasicHttpBinding` Class

### 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

### Endpoints

- Endpoints Explained

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

### Defining Data Contracts

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

### Fault Handling

- `FaultException` class

- Working with Endpoints
- Configuring Endpoints
- Using Multiple Endpoints

- 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

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