CTREC HILTON IT ACADEMY

BUILDING TRAINING SOLUTIONS FOR THE IT WORLD

Visual Studio 2008: Windows Communication Foundation

Days:	**3**
Format:	**Instructor-Led**
Class Code:	**6461**
Certification Exams:	**None**
Certification Track:	**None**

Recommended Course Sequence

Knowledge of prerequisites noted below.

Course content is subject to change without notice.

Course Description:
This three-day instructor-led course provides students with the knowledge and skills to build and configure a Windows Communication Foundation (WCF) solution.

Target Student:
This course is intended for application developers who know how to build and consume Web services in Microsoft .NET Framework 2.0 and how to use the common features of the base class library. The application developers do not have to understand concepts such advanced WS-*, Web Services Enhancements (WSE), service life cycle management, and diagnostics.

Prerequisites:
Before attending this course, students should have either:

- One year of experience programming in .NET
- Taken course: 4994-Introduction to Programming Microsoft .NET Applications with Microsoft Visual Studio 2005 and 2008

At Course Completion:
After completing this course, students will be able to:

- Build a simple WCF service and client
- Create and configure a service as a managed application and select an appropriate hosting option
- Expose a WCF service over different endpoints and add run-time functionality by using behaviors
- Improve debugging capabilities by examining messages and service activity
- Define service, operation, and data contracts to meet application requirements
- Add error handling to a WCF application
- Address service quality issues such as performance, availability, concurrency, and instance managements
- Implement security in a WCF application
- Protect data integrity through correct use of transactions

Course Outline

Module 1: Getting Started with Windows Communication Foundation
This module explains how to build a simple WCF service and client.

Lessons
▪ Designing an Application to be Part of a Service Oriented Architecture ▪ Overview of WCF Architecture ▪ Using a Language-Level Interface as a Service Contract ▪ Implementing a Simple WCF Service in Visual Studio 2008 ▪ Consuming a Simple WCF Service in Visual Studio 2008
Lab: Creating a Simple Service
▪ Creating a Simple WCF Service ▪ Calling the Simple WCF Service

Module 2: Configuring and Hosting WCF Services
This module explains how to create and configure a WCF service as a managed application and select an appropriate hosting option.

Lessons
▪ Programmatically Configuring a Managed Application to Host a WCF Service ▪ Programmatically Configuring a Managed Application to Call a WCF Service ▪ Defining Client and Service Settings by Using File-Based Configuration ▪ Selecting a Hosting Option for a WCF Service ▪ Deploying a WCF Service
Lab: Configure and Host a WCF Service
▪ Creating a Programmatically Configured Managed Application to Host a Service ▪ Calling a Service Hosted in a Managed Application by Using Programmatic Configuration ▪ Defining Service Settings by Using External Configuration ▪ Employing Different Hosting Options for a Service

Module 3: Endpoints and Behaviors
This module explains how to expose a WCF service over different endpoints and add run-time functionality by using behaviors.

Lessons
■ Exposing WCF Services Over Different Endpoints ■ Adding Behaviors to Services and Endpoints ■ Interoperating with Non-WCF Web services
Lab: Changing Service Endpoints and Behaviors
■ Exposing Services by Using Different Bindings ■ Adding Metadata Exchange to a Service ■ Creating WCF Clients and Services that Interoperate with Non-WCF Web Services

Module 4: Debugging and Diagnostics
This module explains how to improve debugging capabilities by examining messages and service activity.

Lessons
■ Logging Messages ■ Activity Tracing
Lab: Message Logging and Activity
■ Generating Logging Information for a Service ■ Enabling End-to-End Tracing for a Service

Module 5: Designing and Defining Contracts
This module explains how to define service, operation, and data contracts to meet application requirements.

Lessons
■ Designing a Coherent and Cohesive WCF Service Interface ■ Defining a Service Contract ■ Defining Operations on a Service ■ Defining a Data Contract
Lab: Contracts for Services and Data
■ Defining and Implementing a One-Way Operation Contract ■ Passing Complex Data with a Data Contract ■ Defining and Implementing a Callback Contract

Module 6: Handling Errors
This module explains how to add error handling to a WCF application.

Lessons
Relating .NET Exceptions to Service-Level Faults Using Faults in a Service Handling Faults and Exceptions on Clients
Lab: Error Handling
Handling Unexpected Errors in a WCF Service Add Fault Handling to a WCF Service and the Service Contract

Module 7: Improving WCF Service Quality
This module explains how to address service quality issues such as performance, availability, concurrency, and instance management.

Lessons
Managing WCF Service Instances Managing Concurrency Issues Improving WCF Service Quality
Lab: Improving WCF Service Quality
Managing WCF Service Instances Managing Concurrency Issues Throttling Access to a WCF Service Passing Bulk Data Between a WCF Client and Service

Module 8: Implementing WCF Security
This module explains how to implement security in a WCF application.

Lessons
Overview of Security in WCF Applying Overall Security Requirements to a Binding Specifying Required Client and Service Credentials Working With Security Information
Lab: Protecting a Service
Applying Security for Internal Network Communication Applying Security for Internet Communication

Module 9: Implementing Transactions
This module explains how to protect data integrity through correct use of transactions.

Lessons
■ Overview of Transactions in a Service-Oriented Application ■ Creating Transactional Service Operations ■ Enabling the Flow of Transactions from Client to Service
Lab: Implementing Transactions for a Service
■ Controlling the Flow of a Transaction from Client to Service ■ Forcing a Transaction to Start When a Service Operation Is Called