

Developing Microsoft .NET Applications for Windows (Visual C# .NET)

- **Course Number:** 2555
- **Length:** 5 Day(s)

Certification Exam

This course will help you prepare for the following Microsoft Certified Professional exams:

- **Exam 70-316:** Developing and Implementing Windows-based Applications with Microsoft Visual C# .NET and Microsoft Visual Studio .NET

Course Overview

This five-day course provides students with the skills required to build Microsoft Windows Forms applications by using the Microsoft .NET Framework. This course is a part of the Microsoft Visual C# .NET curriculum and is intended to provide C# programmers with the skills required to create Windows Forms applications by using the .NET Framework. The course will cover the major topics for Windows client application programming on the .NET Framework. These topics include: Windows Forms, GDI+, simple data access, interoperating with unmanaged code, threading and asynchronous programming issues, simple remoting, Web access, Web Services consumption, debugging, security, and deployment issues for desktop applications.

Prerequisites

The course assumes that students have the following skills:

- Understanding of C# programming
- Experience building applications

The following prerequisites are recommended for this course:

- Course 2124: Introduction to C# Programming for the Microsoft .NET Platform or equivalent knowledge

Audience

This course is intended for the intermediate programmer who is responsible for designing and building Windows-based applications with the .NET Framework. It is designed for developers who have C# development skills. Students are required to have the following skills:

- Experience with a .NET language such as Visual C# .NET or Microsoft Visual C++ .NET
- Experience developing basic applications with MFC and/or Microsoft Visual Basic 6.0

Typically, these individuals perform the following key activities:

- Help create functional specifications.
- Design and develop user interfaces.
- Create and test prototypes.
- Write Windows Forms applications.

Course Outline

- Level 1
- Course Introduction
- 1.0 Course Prerequisites
- 1.1 Course Overview
- Survey of the .NET Platform
- 1.1 .NET Framework
- 1.2 Common Language Runtime
- 1.3 Base Classes
- 1.4 Languages
- 1.5 Review
- 1.6 Reference Websites
- Survey of C# Programming
- 2.1 Demonstration – Console Application
- 2.2 .NET Tools
- 2.3 Demonstration – .NET Tools
- Lab - C# Language Specifications – Brief History
- Level 2
- Exploring Variables
- 1.1 Common Type System
- 1.2 Declaring Variables
- 1.3 Demo - Declaring Variables
- 1.4 Operators
- 1.5 Demo - Operators
- 1.6 Enumerations & Structures
- 1.7 Demo - Enumerations & Structures
- 1.8 Demo - Data Conversion
- 1.9 Demo - Value & Reference Types
- 1.10 Review
- Level 3
- Exceptions & Statements
- 1.1 Demo - Statement Blocks
- 1.2 Demo - Selection Statements
- 1.3 Demo - Iteration Statements
- 1.4 Demo - Jump Statements
- 1.5 Exception Handling
- 1.6 Demo - Exception Handling
- 1.7 Review
- Level 4
- Parameters & Methods
- 1.1 Demo - Methods
- 1.2 Demo - Parameters
- 1.3 Demo - Recursive & Overloaded Methods
- 1.4 Review
- Organizing with Arrays
- 2.1 Demo - Declaring Arrays
- 2.2 Demo - Passing & Returning Arrays
- 2.3 Demo - Console Application
- 2.4 Collections
- 2.5 Review
- Level 5
- Object-Oriented Programming
- 1.1 Classes & Objects

- 1.2 Demo - Object Browser
- 1.3 Encapsulation & Development
- 1.4 Encapsulation Defined
- 1.5 Demo - Building Classes
- 1.6 Demo -Keywords & Classes
- 1.7 Review
- Level 6
- Forming & Disposing Objects
- 1.1 Demo - Creating Objects
- 1.2 Demo - Object Constructors
- 1.3 Demo - Private & Static Constructors
- 1.4 Object Disposal
- 1.5 Demo - Object Disposal
- 1.6 Demo - Disposal Design Pattern
- 1.7 Review
- Level 7
- C# Inheritance
- 1.1 Inheritance
- 1.2 Demo - Inheritance
- 1.3 Interfaces & Abstract Classes
- 1.4 Demo - Interfaces
- 1.5 Demo - Abstract Classes
- 1.6 Demo - Polymorphism
- 1.7 Review
- Level 8
- Internal Scope & Namespaces
- 1.1 Demo - namespaces
- 1.2 Demo - Base Class Library
- 1.3 Demo - String Class
- 1.4 Internal Scope
- 1.5 Demo - Internal Scope & Factory Pattern
- 1.6 Review
- Level 9
- Operators and Delegates
- 1.1 Demo - Overloading Operators
- 1.2 Demo - Delegates
- 1.3 Review
- Exploring Attributes
- 2.1 Demo - Attributes
- 2.2 Demo - Custom Attributes
- 2.3 Demo - Reflection
- 2.4 Review
- 2.5 Final Comments
- Level 10
- Windows Forms
- 1.1 Demo - Creating a Form
- 1.2 Form Lifecycle
- 1.3 Demo - Events
- 1.4 Demo - Inheritance
- 1.5 MDI Applications
- 1.6 Demo - MDI Applications
- 1.7 Review

- Level 11
- Using Controls
- 1.1 Events
- 1.2 Demo - Events
- 1.3 Controls
- 1.4 Demo - Controls
- 1.5 Dialog Boxes
- 1.6 Demo - Dialog Boxes
- 1.7 Run Time Control Modification
- 1.8 Demo - Run Time Controls
- 1.9 Menus
- 1.10 Demo - Menus
- 1.11 Validating User Input
- 1.12 Demo - Validating User Input
- 1.13 Review
- 1.14 Web Resources
- Level 12
- Creating Controls
- 1.1 Overview
- 1.2 Options for Building Controls
- 1.3 How to Test a Control
- 1.4 Demo - Creating a Composite Control
- 1.5 Demo - Creating a Custom Control
- 1.6 Design-Time Support
- 1.7 Licensing a Control
- 1.8 Review
- Lab - Creating and Using Controls
- Level 13
- Windows Forms Applications
- 1.1 ADO.NET
- 1.2 Data Connections Objects
- 1.3 Demo - Typed Data Set
- 1.4 Demo - Updating Data
- 1.5 Data Binding
- 1.6 Demo - Data Binding
- 1.7 Formatting Controls & Parsing Data
- 1.8 XML Web Services
- 1.9 Web Service Structure
- 1.10 Demo - Accessing a Web Service
- 1.11 Persisting Data & Serialization
- 1.12 Demo - File I/O
- 1.13 Demo - Serialization & De-serialization
- 1.14 Isolated Storage
- 1.15 Demo - Isolated Storage
- 1.16 Persisting Application Settings
- 1.17 Review
- 1.18 MS Application Blocks
- Lab - Using DataSets
- Level 14
- Interoperability
- 1.1 .NET vs COM
- 1.2 Role of RCW

- 1.3 Demo - .NET vs COM
- 1.4 .NET & Win32 API
- 1.5 Demo - .NET & Win32 API
- 1.6 Review
- Lab - Interoperability with COM
- Printing and Reporting
- 2.1 Demo - Print Document Objects
- 2.2 Adding Functionality
- 2.3 Demo - Print Dialog Boxes
- 2.4 Using GDI+
- 2.5 Demo - Using GDI+
- 2.6 Review
- Lab - Creating a Crystal Report
- Level 15
- Asynchronous Programming
- 1.1 Demo - Asynchronous Programming
- 1.2 Asynchronous Design Pattern
- 1.3 Demo - Asynchronous Design Pattern
- 1.4 Demo - Asynchronous Calls
- 1.5 Keeping Code Safe
- 1.6 Demo - Thread Safety
- 1.7 Review
- Level 16
- Application Usability
- 1.1 Demo - Accessibility
- 1.2 Application Help
- 1.3 Demo - Application Help
- 1.4 Localization
- 1.5 Demo - Localization
- Lab - Add Context-Sensitive Help
- Level 17
- Windows Forms Application
- 1.1 Demo - Private Assemblies
- 1.2 Demo - Strong Named Assemblies
- 1.3 Global Assembly Cache
- 1.4 Demo - GAC & .dll Files
- 1.5 Demo - Application Configuration Files
- 1.6 Additional Configuration Files
- 1.7 Packaging & Deploying .NET
- 1.8 Demo - Deploying Applications
- 1.9 Review
- Lab - Windows-Based Application
- Level 18
- Security
- 1.1 Code Access Security
- 1.2 Declaring Security Level
- 1.3 Demo - MSCorCfg & Permissions
- 1.4 Demo - Code Access Security
- 1.5 Role Based Security
- 1.6 Demo - Role Based Security
- 1.7 Demo - Generic Principle
- 1.8 Review

- 1.9 Course Summary
- Lab - Administrating Policy Settings