

## **Microsoft .NET Framework 2.0 – Application Development Foundation**

- **Course Number:** 70-536 VB
- **Length:**

### **Certification Exam**

This exam is part of a series of exams in pursuit of the MCPD certification.

### **Course Overview**

This exam is an essential step to achieving the MCPD certification: the premier certification that highlights your job role, featuring your specific area of expertise. Now it is easy to distinguish yourself as an expert in Windows and Web development.

### **Prerequisites**

Candidates should have a working knowledge of Visual Studio 2005, and they should also have at least two to three years of experience developing Web-based, Microsoft Windows-based, or distributed applications by using the:

- .NET Framework 1.0
- .NET Framework 1.1
- .NET Framework 2.0

### **Audience**

Candidates typically work on a team in a medium or large development environment that uses Microsoft Visual Studio .NET 2003 Enterprise Developer or Visual Studio 2005.

### **Course Outline**

- Module 01 - Framework Fundamentals
- Framework Fundamentals
- Value Types
- User-Defined Types
- Enumerations
- Common Reference Types
- Reference and Value Types
- Built-in Reference Types
- Arrays and Streams
- Throw and Catch Exceptions
- Constructing Classes
- Interface
- Process Diagrams

- Demo - Fundamentals
- Demo - Type Conversion
- Demo - Safe Conversion
- Module 1 Review
- Module 02 - Input/Output (I/O)
- Input/Output (I/O)
- Converting Types
- Navigating the File System
- Reading and Writing Files
- Compressing Streams
- Isolated Storage
- Demo - File I/O
- Demo - File System Watcher
- Demo - Binary Read and Write
- Demo - Memory Stream
- Demo - Compress and Decompress
- Demo - Isolated Storage
- Module 2 Review
- Module 03 - Searching, Modifying, and Encoding Text
- Searching, Modifying, and Encoding Text
- Regular Expressions
- Limitations
- RegExp
- Encoding & Decoding
- Formats
- System.Text Namespace
- Demo - Regular Expressions
- Demo - Encoding and Decoding
- Module 3 Review
- Module 04 - Collections and Generics
- Collections and Generics
- Collections
- Collection Types
- Sequential Lists
- Working Dictionary
- Generic Collections
- Demo - Collections
- Demo - Objects and Generics
- Module 4 Review
- Module 05 - Serialization
- Serialization
- Deserializing
- Implementation
- Serializable Attributes
- Guidelines
- XML Serialization

- Limitations
- Demo - Dictionary and Serialization
- Demo - Serialization
- Module 5 Review
- Module 06 - Graphics
- Graphics
- System.Drawing Namespace
- Graphics
- Classes
- Structures
- Drawing lines and Shapes
- Working with Pens
- Methods
- Images
- Icons
- Bitmaps
- Text
- Text Formatting
- StringFormat Class
- Formatting
- Demo - Graphics
- Module 6 Review
- Module 07 - Threading
- Threading
- System.Threading Namespace
- Main Thread
- Threading Process
- Thread Priority Enumerations
- ParameterizedThreadStart
- Stopping Threads
- Critical Region
- Run Method
- Share and Lock Data
- Thread State Diagram
- Demo - Threads
- Module 7 Review
- Module 08 - Application Domains and Services
- Application Domains and Services
- Application Domain
- userName
- Isolate Tasks
- Implementation
- Loading Assemblies
- Configure Application Domains
- Application Domain Security
- Application Domain Properties

- Demo - Application Domain
- Module 8 Review
- Module 09 - Installing and Configuring Applications
- Installing and Configuring Applications
- Configuration Settings
- Configuration Decisions
- Handling Configurations
- Benefits of .NET Configuration
- Common Settings
- Creating An Installer
- Installer Class
- Using the Installer Class
- Committing the Installation
- Demo - Windows Service
- Demo - Debugging Windows Service
- Demo - Configuration
- Module 9 Review
- Module 10 - Instrumentation
- Instrumentation
- Reproduction of Problems
- Log Files
- Resolution of Problems
- Windows Events
- Benefits of Windows Events
- Security
- Debugging Code
- Reasons for Debugging
- Compilation Options
- Common Methods of Debug Class
- Trace Class
- Monitoring Performance
- Knowing Applications
- Windows Management Instrumentation (WMI)
- WMI Query Language
- Demo - WMI
- Demo - Instrumentation
- Demo - Instrument Trigger
- Module 10 Review
- Module 11 - Application Security
- Application Security
- Code Access Security (CAS)
- Role-Based Security (RBS)
- Evidence
- Security Policies
- How CAS Works
- Declarative CAS Demands

- CAS Assembly Declarations
- Types of Assembly Permission Declarations
- Types of CAS Assembly Declarations
- Permissions
- Demo - CAS
- Module 11 Review
- Module 12 - User and Data Security
- User and Data Security
- Protection
- Role-Based Security (RBS)
- Integration
- Authentication & Authorization
- Authentication & Authorization Example
- User Name & Password
- WindowsIdentity
- WindowsIdentity Class Methods
- User Information
- Access User Groups
- Access User Groups (Cont.)
- Permissions
- Properties for PrincipalPermission
- Identity
- Access Control List (ACL)
- Discretionary Access Control List (DACL)
- Managing Permissions
- Security Access Control List (SACL)
- Users of SACL
- Data
- Encryption
- Symmetric Key Encryption
- Demo - Encryption and Decryption
- Demo - Encrypt and Decrypt Data
- Demo - RBS
- Module 12 Review
- Module 13 - Interoperation
- Interoperation
- Component Object Model (COM)
- Runtime Callable Wrapper (RCW)
- Exceptions
- Functionality
- P/Invoke
- Benefits of Creating a P/Invoke Class
- Callback Functions
- Shortcomings with Using Unmanaged Code
- Demo - COM
- Module 13 Review

- Module 14 - Reflection
- Reflection
- Code in the CLR
- Assembly
- Assemblies and Modules
- Assembly Class
- Assembly Attributes
- Common Attributes
- Getting Attributes
- Reflecting Types
- Enumerating Class Members
- Demo - Reflection
- Module 14 Review
- Module 15 - Mail
- Mail
- Creating A Mail Message
- MailMessage Object
- MailMessage Properties
- Attach Files
- HTML Messages
- Sending Mail
- Demo - Messaging
- Demo - Mail
- Module 15 Review
- Module 16 - Globalization
- Globalization
- System.Globalization Namespace
- CultureInfo Class
- Uses of CultureInfo Class
- Culture Categories
- Custom Culture
- Installing Custom Culture
- Custom Culture Properties
- Demo - Culture
- Module 16 Review
- Course Closure