

## Course Description



# MS 1015 - Mastering MFC Development Using Microsoft Visual C++

**Duration: 5 Days**

**Price: \$1,895.00**

**Discounts Available for:** Groups of Six or More – Save Up to 25%  
Patuxent Partnership Members – Minimum of 5%  
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**Description:** This course will teach C++ programmers how to develop applications by using Microsoft Foundation Class (MFC) Library and the Microsoft Visual C++® 6 development environment.

### **Prerequisites:**

This course assumes that the student has experience and knowledge in the following areas:

- C++ programming skills
- Some programming experience with MFC Library
- Familiarity with document/view architecture and non-document/view architecture
- Windows architecture concepts including event-driven programming, processes, virtual memory models, threading, multitasking, and messaging
- Using the resource editors, tools, and debugger in the Microsoft Visual Studio™ development environment
- Familiarity with Microsoft Internet Explorer
- Creating, modifying, compiling, and running projects in Visual Studio
- Familiarity with object-oriented programming (OOP) terminology and concepts such as objects, properties, and methods
- Completing course 1011, Mastering MFC Fundamentals Using Microsoft Visual C++, satisfies the prerequisite skills listed above. The course materials, lectures, and lab exercises are in English. To benefit fully from our instruction, students need an understanding of the English language and completion of the prerequisites.

### **Course Objectives:**

At the end of the course, students will be able to:

- Describe the Visual C++ 6 development environment.
- Describe the new MFC features introduced with Visual C++ 6.

- Debug MFC applications.
- Create robust applications that handle errors and exceptions.
- Enhance the user interface features of an application by adding dynamic menus, graphical status bars, rebars, and dialog bars.
- Implement view classes.
- Use Microsoft Windows® operating system controls, Internet Explorer controls, and ActiveX™ controls in MFC applications.
- Use ActiveX and component object model (COM) objects in MFC.
- Create ActiveX controls.
- Create applications that access both DBMS and non DBMS data sources by using OLE DB templates and ActiveX Data Objects (ADO).
- Create MFC applications that communicate across the Internet.

### **Microsoft Certified Professional Exams**

This course will help the student prepare for the following Microsoft Certified Professional exam(s):

- Exam 70-016, *Designing and Implementing Desktop Applications with Microsoft Visual C++ 6.0*

### **Course Materials**

The course workbook and lab book are yours to keep. You will be provided with the following software for use in the classroom:

- Mastering MFC Development Using Microsoft Visual C++ 6.0
- Microsoft Visual C++ 6.0

## **Course Outline:**

### **Chapter 1: Introduction to Microsoft Visual C++ 6.0**

#### **Topics:**

Overview of Visual C++ and MFC  
 Enhancements to Visual C++  
 Enhancements to MFC

#### **Lab:**

Creating an MFC application by using AppWizard

#### **Skills:**

*After completing this chapter, students will be able to:*

- Describe the features of Visual C++ and MFC Library.
- List the major enhancements made to Visual C++ and MFC in Visual C++ 6.0.
- Create, build, and run an MFC application.

## Chapter 2: Debugging and Error Handling

### Topics:

Debugging

Handling errors and exceptions

### Labs:

Using Edit and Continue

Implementing exception-handling

### Skills:

*After completing this chapter, students will be able to:*

- Use the Visual Studio Debugger to identify and eliminate errors.
- Use the Edit and Continue feature to simplify debugging.
- Write functions with built-in error-handling code.
- Use the C++ exception-handling technique to handle runtime exceptions.
- Describe and use the various types of MFC exception classes.

## Chapter 3: Enhancing User Interface Features

### Topics:

Enhancing menus

Enhancing toolbars

Enhancing status bars

Enhancing dialog boxes

Using modeless dialog boxes

Using dialog bars

Using rebars

### Labs:

Creating a dynamic menu

Customizing the common dialog class

Adding a modeless dialog box

Adding a dialog bar

Adding a rebar

### Skills:

*After completing this chapter, students will be able to:*

- Create dynamic menus, cascading menus, and ownerdraw menus.
- Place dockable toolbars in an application.
- Include graphics and additional panes in status bars.
- Use and customize common dialog boxes.
- Extend dialog data validation (DDV).
- Create tabbed dialog boxes and property sheets.
- Invoke and display modeless dialog boxes.
- Create dialog bars and rebars.

## Chapter 4: Implementing View Classes

### Topics:

Introduction to views  
Adding multiple views  
Adding scrolling views  
Implementing splitter windows  
Implementing form views  
Implementing control views  
Creating an Explorer-style application  
Coordinating multiple interrelated views

### Labs:

Adding a splitter bar to an application  
Adding Open File dialogs and a rich edit view  
Building a text viewer (optional)

### Skills:

*After completing this chapter, students will be able to:*

- Describe the purpose of documents, views, templates, and frames within the document/view architecture, and how they interact.
- Describe the various types of view classes in MFC.
- Implement applications that use views derived from the CView class.
- Create SDI and MDI applications with multiple views.
- Implement interrelated views in an application.

## Chapter 5: Using Controls

### Topics:

Windows common controls  
Internet Explorer 4.0 common controls  
ActiveX controls  
Controls supplied by MFC

### Labs:

Creating controls dynamically  
Adding the Progress control  
Using the Calendar control

### Skills:

*After completing this chapter, students will be able to:*

- Add Windows common controls, Internet Explorer 4.0 common controls, ActiveX controls, and controls supplied by the MFC library to MFC applications.

## Chapter 6: Creating ActiveX Controls

### Topics:

Overview of ActiveX controls  
ActiveX control properties  
ActiveX control methods  
ActiveX control events  
Implementing ActiveX control property pages  
Creating an enumerated property  
Data binding in an ActiveX control  
Optimizing ActiveX controls  
Debugging and handling errors in ActiveX applications

### Lab:

Building an ActiveX control using an existing class

### Skills:

*After completing this chapter, students will be able to:*

- Describe the advantages of the ActiveX control technology.
- Describe the elements of an ActiveX control.
- Explain the features of the ControlWizard in creating an ActiveX control.
- Describe the primary tasks of an ActiveX control container.
- Explain the interaction between an ActiveX control container and an ActiveX control.
- Use ControlWizard to create skeletal code for your ActiveX control.
- Use ClassWizard to define properties, methods, and events for your ActiveX control.

## Chapter 7: Using OLE DB Templates for Data Access

### Topics:

Overview of OLE DB  
Introduction to OLE DB templates  
Creating an OLE DB consumer application

### Labs:

Create an OLE DB consumer application by using the CAccessor class  
Create an OLE DB consumer application by using the CDynamicAccessor class

### Skills:

*After completing this chapter, students will be able to:*

- State the benefits of using the OLE DB technology for data access.
- Describe the role of OLE DB components in data access.
- Explain the architecture of provider and consumer template classes.
- Build consumer applications using OLE DB consumer templates.

## **Chapter 8: Creating ADO Database Applications**

### **Topics:**

Introduction to ADO  
Using data controls  
Using data bound dialog  
Performing queries

### **Lab:**

Using the data bound dialog

### **Skills:**

*After completing this chapter, students will be able to:*

- Describe the role of ADO in applications that require database access.
- Describe the ADO object model.
- Implement ADO in MFC applications using data controls.
- Implement ADO in MFC applications using the Data Bound Dialog.
- Perform queries and searches on databases and rowsets.

## **Chapter 9: Building Internet Applications**

### **Topics:**

Basic Internet concepts  
Using the Internet Explorer object  
Using the Web Browser control  
Using the WinInet classes  
Using the WinSock classes

### **Labs:**

Using the Web Browser control  
Using the HTTP WinInet classes  
Adding an HTML view

### **Skills:**

*After completing this chapter, students will be able to:*

- Describe the Internet framework.
- Describe the different types of Internet applications.
- Create MFC-based applications that invoke Internet Explorer.
- Use the Web Browser control in MFC applications.
- Create MFC applications that use the WinInet classes to communicate across the Internet.
- Create MFC applications that use the synchronous and asynchronous WinSock classes.

## **Chapter 10: Printing and Print Preview**

### **Topics:**

Adding default printer support  
Enhancing printer support

**Lab:**

Adding Print and Print Preview to an application

**Skills:**

*After completing this chapter, students will be able to:*

- Describe the printing process and the default printing capabilities provided by MFC for an AppWizard-generated application.
- Add default printer support to your application.
- Retrieve information relating to printers and print jobs at run time.
- Enhance default printer support to implement custom requirements.