## .NET Development and Visual Studio

## CS410: C# Design and Application Patterns

Learn how to apply best practices to your C# development and .NET applications. This hand-on course uses real-life analogies that give developers the practical experience needed to succeed in their daily professions. This live class is available virtually with RemoteLive™ or locally at our Phoenix, AZ location.

$2,695.00

- 3 Days
- Taught by expert Dan Wahlin

### Upcoming Dates

### Course Description

The C# Design and Application Patterns course teaches .NET developers how to apply best practices to their .NET applications. While a thorough understanding of the C# language is key to development success, developers should also understand how to write loosely-coupled code that is based upon proven best practices and patterns. By applying design and application patterns to the development process, more consistent, flexible and maintainable code can be written.

### Course Outline

**1. Introduction to Design Patterns**

- What are Design Patterns?
- Why use Design Patterns?
- Selecting a Design Pattern
- Key Language Concepts

**2. Creational Design Patterns**

- Abstract Factory Pattern
- Singleton Pattern
- Builder Pattern
- Factory Pattern
- Prototype Pattern

**3. Structural Design Patterns**

- Façade Pattern
- Decorator Pattern
- Adapter Pattern

**4. Behavioral Design Patterns**

- Observer Pattern
- Chain of Responsibility Pattern
- Mediator Pattern

**5. Application Design Patterns**

- Overview of Application Design Patterns
- Model-View-Controller (MVC)
- Understanding the MVC Pattern
- Introduction to ASP.NET MVC
- The Role of Routing
- Creating the Model
- Creating a Controller with Actions
- Displaying Data with Views
- Model-View-ViewModel (MVVM)
- Introduction to MVVM
- The role of the ViewModel
- Applying MVVM to Silverlight Applications

## Audience

The C# Design and Application Patterns course teaches .NET developers how to apply best practices to their .NET applications. While a thorough understanding of the C# language is key to development success, developers should also understand how to write loosely-coupled code that is based upon proven best practices and patterns. By applying design and application patterns to the development process, more consistent, flexible and maintainable code can be written.

## Prerequisites

Before taking this course, students should have successfully completed the following course or have equivalent experience:

CS314: Advanced C#5 Programming with Visual Studio 2012

## What You Will Learn

- How to build re-useable code bases
- The importance of building loosely-coupled applications
- The benefits of applying design patterns to development projects
- The role of Generics and Interfaces in design patterns
- The difference between Creational, Structural and Behavioral design patterns
- Best practices for building applications and applying design patterns
- Why Separation of Concerns leads to more testable applications
- How Visual Studio can be used to unit test applications
- How to use MVC and MVVM application patterns