

# MA-2039: Intermediate C#

**Price:** 2595

**Duration:**

**Delivery Methods:** Virtual

## Overview

## Outline

### C# Compilation

- Manual builds and automation using VS and VSC.
- Customizing the .CSPROJ file.
- Compiler Directives

### Visual Studio Tricks and Tips

- Renaming a project
- Power user shortcuts
- Multi-cursor editing

### C# Objects and OOP

- Review of the family of C# objects
- Anonymous Types
- Records
- The Four Pillars of OOP and how they are supported in C#
- Inheritance vs. Composition

## Patterns

- SOLID
- Creational, Structural, Behavioral, Architectural, Concurrency & Reactive, Domain-Driven Design

## **Parallel Operations**

- Concurrency vs. Parallelism
- Async await
- Task
- For and Parallel.ForEach
- Race conditions and Lock

## **Lambda Expressions**

- Expression, statement and parameterless lambdas

C# Patterns – switch, if

## **Developer Security Best Practices**

- Security standards
- OWASP Top 10 web application security risks
- SQL Injection and Input Validation
- Exception Handling best practices
- Defensive Programming

## **Memory Management**

- Garbage collection
- The IDisposable pattern and the Using statement

## **Generic Types**

- Using .NET generic classes
- Creating custom generic classes
- Generics using Funcs and lambdas

## **Bonus Content (if time available)**

- Interesting Projects
  - Watermark and annotate images
  - Work with ZIP files: ZIP, list, read and write content
  - Add text-to-speech to a project
- Chainable Classes
  - Create Fluent APIs
  - Create object Builders
- Dynamic and Expand Objects

## Course Schedule

Date	Time	Price	Options
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