

## **Programming C#: Advance**

**Modality: Self-Paced Learning**

**Duration: 8 Hours**

**SUBSCRIPTION: No**

### **About this course:**

The Programming C# 6: Advanced is the third course in the three course series on the programming language C#. This course further builds on the concepts taught in the C# Fundamentals and C# Intermediate courses and covers the technically complex topics such as objects, methods, inheritance, interfaces and arrays.

This programming language course will explore some of the more advanced features of the C# language. Candidates will be able to learn how to systematically program in C# and solve complex real-world programming problems. The course fully prepares the students to work in demanding environments with full confidence and efficiency.

### **Course Objective:**

- Identify how to work with objects
- Learn about properties and methods
- Save and retrieve information in a C# program
- Understand the concept of inheritance, abstract classes and derived classes
- Learn to use interfaces in .NET framework
- Implement partial and nested classes
- Comprehend the concept and usage of arrays

### **Audience:**

- Experienced software developers looking to enhance their knowledge of C# and Microsoft Visual Studio and .NET framework
- Candidates with understanding of Java, C++, Microsoft Visual Basic and Objective-C
- Candidates with strong concept of object-oriented-programming

### **Prerequisite:**

- This advanced level course requires the students to have complete command of C# basics.
- Ideally the students should enroll for C# Fundamentals and C# Intermediate courses before opting to register for this course.
- Additionally, the candidates should also possess a minimum of two years of hands-on programming experience in any programming language preferably C#.

### **Course Outline:**

## Chapter 01 - Working With Objects

- **Topic A: Value and Reference Types - Part 1**
- Value and Reference Types - Part 2
- Value and Reference Types - Part 3
- **Topic B: Deterministic Object Lifetimes - Part 1**
- Deterministic Object Lifetimes - Part 2
- Deterministic Object Lifetimes - Part 3
- **Topic C: Instance and Static Members - Part 1**
- Instance and Static Members - Part 2
- Instance and Static Members - Part 3
- **Topic D: Working with Objects - Part 1**
- Working with Objects - Part 2
- Working with Objects - Part 3

## Chapter 02 - Methods

- **Topic A: Properties - Part 1**
- Properties - Part 2
- Properties - Part 3
- **Topic B: Automatic Properties - Part 1**
- Automatic Properties - Part 2
- Automatic Properties - Part 3
- **Topic C: Methods - Part 1**
- Methods - Part 2
- Methods - Part 3
- **Topic D: Optional Param and Caller Info - Part 1**
- Optional Param and Caller Info - Part 2
- Optional Param and Caller Info - Part 3

## Chapter 03 - Methods in Classes

- **Topic A: Methods in Classes - Part 1**
- Methods in Classes - Part 2
- Methods in Classes - Part 3
- **Topic B: Save and Retrieve Info - Part 1**
- Save and Retrieve Info - Part 2
- Save and Retrieve Info - Part 3
- **Topic C: Return and Pass Arrays - Part 1**
- Return and Pass Arrays - Part 2
- Return and Pass Arrays - Part 3
- **Topic D: Instance and Static Members - Part 1**
- Instance and Static Members - Part 2
- Instance and Static Members - Part 3
- **Topic E: Expression Bodied Methods - Part 1**
- Expression Bodied Methods - Part 2
- Expression Bodied Methods - Part 3

## Chapter 04 - Inheritance

- **Topic A: Inheritance - Part 1**
- Inheritance - Part 2
- Inheritance - Part 3
- **Topic B: Derived Classes - Part 1**
- Derived Classes - Part 2
- Derived Classes - Part 3
- **Topic C: Override and Overload Members - Part 1**
- Override and Overload Members - Part 2
- Override and Overload Members - Part 3
- **Topic D: Abstract Classes and Members - Part 1**
- Abstract Classes and Members - Part 2
- Abstract Classes and Members - Part 3

## Chapter 05 - Interfaces

- **Topic A: Sealed Classes and Members - Part 1**
- Sealed Classes and Members - Part 2
- Sealed Classes and Members - Part 3
- **Topic B: Interfaces - Part 1**
- Interfaces - Part 2
- Interfaces - Part 3
- **Topic C: Interfaces in .NET Framework - Part 1**
- Interfaces in .NET Framework - Part 2
- Interfaces in .NET Framework - Part 3
- **Topic D: Partial and Nested Classes - Part 1**
- Partial and Nested Classes - Part 2
- Partial and Nested Classes - Part 3
- **Topic E: Namespaces - Part 1**
- Namespaces - Part 2
- Namespaces - Part 3

## Chapter 06 - Arrays

- **Topic A: Arrays - Part 1**
- Arrays - Part 2
- Arrays - Part 3
- **Topic B: Initialize Array, Retrieve Data - Part 1**
- Initialize Array, Retrieve Data - Part 2
- Initialize Array, Retrieve Data - Part 3
- **Topic C: Arrays as Method Parameters - Part 1**
- Arrays as Method Parameters - Part 2
- Arrays as Method Parameters - Part 3
- **Topic D: Arrays in the .NET Framework - Part 1**
- Arrays in the .NET Framework - Part 2
- Arrays in the .NET Framework - Part 3
- **Topic E: Manipulating Arrays - Part 1**

- Manipulating Arrays - Part 2
- Manipulating Arrays - Part 3
- **Topic F: Allowing Flexible Sorting - Part 1**
- Allowing Flexible Sorting - Part 2
- Allowing Flexible Sorting - Part 3
- **Topic G: Advanced Sorting - Part 1**
- Advanced Sorting - Part 2
- Advanced Sorting - Part 3
- **Topic H: Searching Arrays - Part 1**
- Searching Arrays - Part 2
- Searching Arrays - Part 3
- **Topic I: Creating Indexers - Part 1**
- Creating Indexers - Part 2
- Creating Indexers - Part 3