

# uCertify

## Course Outline

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### C# Programming I



Lesson



Practice test



Lab

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## 1. Course Objective

Create new career opportunities in the field of C# programming with the C# Programming I course and lab. The lab provides a hands-on learning experience in a safe, online environment. The C# training course provides skills for working with flow control, functions, generics, variables, expressions, defining classes, and more. The course gives the best C# tutorial to help you learn everything related to C# coding.

## 2. Pre-Assessment

Pre-Assessment lets you identify the areas for improvement before you start your prep. It determines what students know about a topic before it is taught and identifies areas for improvement with question assessment before beginning the course.

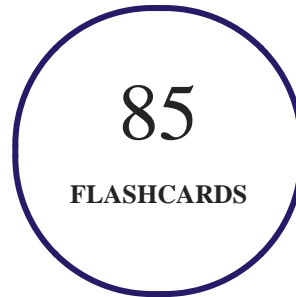
## 3. Quizzes

Quizzes test your knowledge on the topics of the exam when you go through the course material. There is no limit to the number of times you can attempt it.

107  
QUIZZES

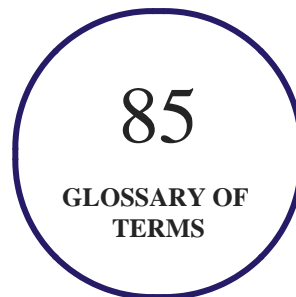
## 4. Flashcards

Flashcards are effective memory-aiding tools that help you learn complex topics easily. The flashcard will help you in memorizing definitions, terminologies, key concepts, and more. There is no limit to the number of times learners can attempt these. Flashcards help master the key concepts.



## 5. Glossary of terms

uCertify provides detailed explanations of concepts relevant to the course through Glossary. It contains a list of frequently used terminologies along with its detailed explanation. Glossary defines the key terms.



## 6. Expert Instructor-Led Training

uCertify uses the content from the finest publishers and only the IT industry's finest instructors. They have a minimum of 15 years real-world experience and are subject matter experts in their fields. Unlike a live class, you can study at your own pace. This creates a personal learning experience and gives you all the benefit of hands-on training with the flexibility of doing it around your schedule 24/7.

## 7. ADA Compliant & JAWS Compatible Platform

uCertify course and labs are ADA (Americans with Disability Act) compliant. It is now more accessible to students with features such as:

- Change the font, size, and color of the content of the course
- Text-to-speech, reads the text into spoken words
- Interactive videos, how-tos videos come with transcripts and voice-over
- Interactive transcripts, each word is clickable. Students can clip a specific part of the video by clicking on a word or a portion of the text.

JAWS (Job Access with Speech) is a computer screen reader program for Microsoft Windows that reads the screen either with a text-to-speech output or by a Refreshable Braille display. Student can easily navigate uCertify course using JAWS shortcut keys.

## 8. State of the Art Educator Tools

uCertify knows the importance of instructors and provide tools to help them do their job effectively. Instructors are able to clone and customize course. Do ability grouping. Create sections. Design grade scale and grade formula. Create and schedule assessments. Educators can also move a student from self-paced to mentor-guided to instructor-led mode in three clicks.

## 9. Award Winning Learning Platform (LMS)

uCertify has developed an award winning, highly interactive yet simple to use platform. The SIIA CODiE Awards is the only peer-reviewed program to showcase business and education technology's finest products and services. Since 1986, thousands of products, services and solutions have been recognized for achieving excellence. uCertify has won CODiE awards consecutively for last 7 years:

- 2014

1. Best Postsecondary Learning Solution

• **2015**

1. Best Education Solution
2. Best Virtual Learning Solution
3. Best Student Assessment Solution
4. Best Postsecondary Learning Solution
5. Best Career and Workforce Readiness Solution
6. Best Instructional Solution in Other Curriculum Areas
7. Best Corporate Learning/Workforce Development Solution

• **2016**

1. Best Virtual Learning Solution
2. Best Education Cloud-based Solution
3. Best College and Career Readiness Solution
4. Best Corporate / Workforce Learning Solution
5. Best Postsecondary Learning Content Solution
6. Best Postsecondary LMS or Learning Platform
7. Best Learning Relationship Management Solution

• **2017**

1. Best Overall Education Solution
2. Best Student Assessment Solution
3. Best Corporate/Workforce Learning Solution
4. Best Higher Education LMS or Learning Platform

• **2018**

1. Best Higher Education LMS or Learning Platform
2. Best Instructional Solution in Other Curriculum Areas
3. Best Learning Relationship Management Solution

- 2019
  1. Best Virtual Learning Solution
  2. Best Content Authoring Development or Curation Solution
  3. Best Higher Education Learning Management Solution (LMS)
  
- 2020
  1. Best College and Career Readiness Solution
  2. Best Cross-Curricular Solution
  3. Best Virtual Learning Solution

## 10. Chapter & Lessons

uCertify brings these textbooks to life. It is full of interactive activities that keeps the learner engaged. uCertify brings all available learning resources for a topic in one place so that the learner can efficiently learn without going to multiple places. Challenge questions are also embedded in the chapters so learners can attempt those while they are learning about that particular topic. This helps them grasp the concepts better because they can go over it again right away which improves learning.

Learners can do Flashcards, Exercises, Quizzes and Labs related to each chapter. At the end of every lesson, uCertify courses guide the learners on the path they should follow.

### Syllabus

#### Chapter 1: Introducing C#

- What is the .NET Framework?
  
- What is C#?
  
- Visual Studio 2017



## Chapter 2: Writing a C# Program

- The Visual Studio 2017 Development Environment
- Console Applications
- Desktop Applications

## Chapter 3: Variables and Expressions

- Basic C# Syntax
- Basic C# Console Application Structure
- Variables
- Expressions
- Exercises

## Chapter 4: Flow Control

- Boolean Logic
- Branching
- Looping
- Exercises

## Chapter 5: More About Variables

- Type Conversion
- Complex Variable Types
- String Manipulation
- Exercises

## Chapter 6: Functions

- Defining and Using Functions
- Variable Scope
- The Main() Function
- Struct Functions
- Overloading Functions

- Using Delegates
- Exercises

## Chapter 7: Introducing to Object-Oriented Programming

- What is Object?Oriented Programming?
- OOP Techniques
- OOP in Desktop Applications
- Exercises

## Chapter 8: Defining Class

- Class Definitions in C#
- System.Object
- Constructors and Destructors
- OOP Tools in Visual Studio
- Class Library Projects
- Interfaces Versus Abstract Classes
- Struct Types
- Shallow Copying versus Deep Copying

- Exercises

## Chapter 9: Generics

- What are Generics?
- Using Generics
- Defining Generic Types
- Variance
- Exercises

## Chapter 10: Additional C# Techniques

- The :: Operator and the Global Namespace Qualifier
- Custom Exceptions
- Events
- Expanding and Using Cardlib
- Attributes
- Initializers
- Type Inference
- Anonymous Types

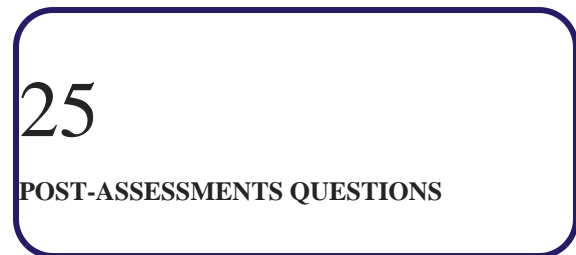
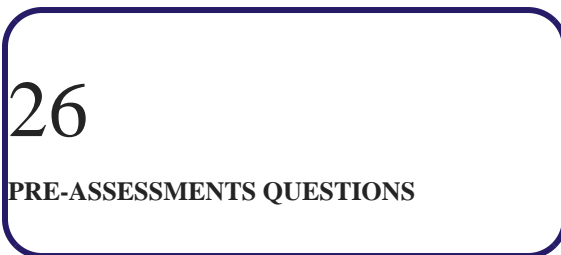
- Dynamic Lookup
- Advanced Method Parameters
- Lambda Expressions
- Exercises

### Chapter 11: Basic Desktop Programming

- XAML
- The Playground
- Control Layout
- The Game Client
- Exercises

## 11. Practice Test

## Here's what you get



## Features

### Full Remediation

Each question comes with detailed remediation explaining not only why an answer option is correct but also why it is incorrect.

### Unlimited Practice

Each test can be taken unlimited number of times until the learner feels they are prepared. Learner can review the test and read detailed remediation. Detailed test history is also available.

### Learn, Test and Review Mode

Each test set comes with learn, test and review modes. In learn mode, learners will attempt a question and will get immediate feedback and complete remediation as they move on to the next question. In test mode, learners can take a timed test simulating the actual exam conditions. In review mode, learners can read through one item at a time without attempting it.

## 12. Performance Based Labs

uCertify's performance-based labs are Live Labs. Learn the real world skills using Live Labs. uCertify Labs are cloud-based, device-enabled and can be easily integrated with an LMS. Features of uCertify labs:

- Provide hands-on experience in a safe, online environment
- Labs simulate real world, hardware, software & CLI environment
- Flexible and inexpensive alternative to physical Labs
- Comes with well-organized component library for every task
- Highly interactive - learn by doing
- Explanations and remediation available
- Videos on how to perform

## Lab Tasks

- Finding the largest number
- Understanding operator precedence
- Using the if-else double-selection statement
- Using the switch statement
- Using the switch statement with the string
- Using the while loop
- Using the while loop for printing the Fibonacci series
- Using the if-else statement within the while loop
- Understanding the do-while loop
- Using the do-while loop
- Using the for loop - Part 1
- Using the for loop - Part 2
- Obtaining the sum of even numbers using the for loop
- Using the nested for loop for printing a pattern
- Understanding one-dimensional array
- Initializing an array and using linear search

- Comparing strings
- Extracting a substring from a string
- Concatenating strings
- Converting a string to lower case
- Using the Replace function
- Converting a string to upper case
- Using the trim function
- Understanding functions - Part 1
- Understanding functions - Part 2
- Creating multiple arguments in a function
- Understanding the variable scope
- Using the delegate Keyword
- Working with objects
- Understanding inheritance
- Using polymorphism
- Understanding constructor overloading
- Using access modifiers
- Using a List
- Sorting a List
- Implementing a Lambda Expression

### Here's what you get





## 13. Post-Assessment

After completion of the uCertify course Post-Assessments are given to students and often used in conjunction with a Pre-Assessment to measure their achievement and the effectiveness of the exam.

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