uCertify

Course Outline

Beginning Programming with Python

21 May 2024

1. Course Objective

2. Exercises, Quizzes, Flashcards & Glossary

   Number of Questions

3. Expert Instructor-Led Training

4. ADA Compliant & JAWS Compatible Platform

5. State of the Art Educator Tools

6. Award Winning Learning Platform (LMS)

7. Chapter & Lessons

   Syllabus

   Chapter 1: Introduction

   Chapter 2: Talking to Your Computer

   Chapter 3: Working with Google Colab

   Chapter 4: Interacting with Python

   Chapter 5: Writing Your First Application

   Chapter 6: Performing Magic

   Chapter 7: Storing and Modifying Information

   Chapter 8: Managing Information

   Chapter 9: Making Decisions

   Chapter 10: Performing Repetitive Tasks

   Chapter 11: Dealing with Errors

   Chapter 12: Interacting with Packages

   Chapter 13: Working with Strings

   Chapter 14: Managing Lists

   Chapter 15: Collecting All Sorts of Data

   Chapter 16: Creating and Using Classes

   Chapter 17: Storing Data in Files

   Chapter 18: Sending an Email

   Chapter 19: Ten Amazing Programming Resources

8. Live labs

Lab Tasks

Here's what you get

1. 📖 Course Objective

Are you eager to explore the fascinating world of programming? The Beginning Programming with Python course is your perfect starting point. Whether you're a complete beginner or have some programming experience, this course will guide you through the fundamentals of coding using the versatile Python language. Start with the fundamentals of programming, including variables, data types, and basic control structures and build a solid foundation to understand how code works and how to create simple programs.

2. ⊕ Exercises

There is no limit to the number of times learners can attempt these. Exercises come with detailed remediation, which ensures that learners are confident on the topic before proceeding.

40

EXERCISES

3. ⏱ Quiz

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.

100

QUIZ
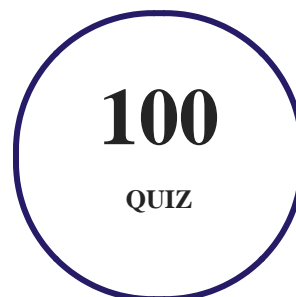
4. ⚡ flashcards

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.

83

FLASHCARDS
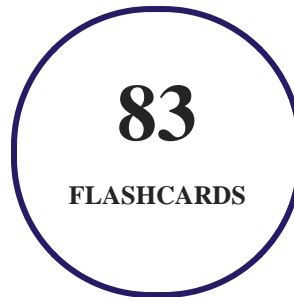
5. 📖 Glossary of terms

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.

83

GLOSSARY OF 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: Introduction

- About This Course

- Icons Used in This Course

- Where to Go from Here

Chapter 2: Talking to Your Computer

- Understanding Why You Want to Talk to Your Computer

- Knowing that an Application Is a Form of Communication

- Creating the Application

- Running the Application

- Understanding the Use of Indentation

- Adding Comments

- Making Your Notebook Informative, Descriptive, and Pretty

- Closing and Halting a Notepad

Chapter 6: Performing Magic

- Understanding the Concept of a Magic Command

- What Kind of Magic Do You Want to Perform?

- Learning the Magic Commands

Chapter 7: Storing and Modifying Information

- Storing Information

- Defining the Essential Python Data Types

- Working with Dates and Times

Chapter 8: Managing Information

- Controlling How Python Views Data

- Working with Operators

- Creating and Using Functions

- Getting User Input

Chapter 9: Making Decisions

- Making Simple Decisions by Using the if Statement

- Choosing Alternatives by Using the if…else Statement

- Using Nested Decision Statements

Chapter 10: Performing Repetitive Tasks

- Processing Data Using the for Statement

- Processing Data by Using the while Statement

- Nesting Loop Statements

Chapter 11: Dealing with Errors

- Knowing Why Python Doesn't Understand You

- Considering the Sources of Errors

- Catching Exceptions

- Raising Exceptions

Chapter 14: Managing Lists

- Organizing Information in an Application

- Creating Lists

- Accessing Lists

- Looping through Lists

- Modifying Lists

- Searching Lists

- Sorting Lists

- Printing Lists

- Working with the Counter Object

Chapter 15: Collecting All Sorts of Data

- Understanding Collections

- Working with Tuples

- Working with Dictionaries

- Creating Stacks Using Lists

- Working with queues

- Working with deques

- Discovering Details Using a Tutorial

- Performing Web Programming by Using Python

- Locating Useful (versus Useless) Modules

- Creating Applications Faster by Using an IDE

- Checking Your Syntax with Greater Ease

- Using XML to Your Advantage

- Getting Past the Common Python Newbie Errors

- Understanding Unicode

- Making Your Python Application Fast

Chapter 20: Ten Ways to Make a Living with Python

- Working in QA

- Becoming the IT Staff for a Smaller Organization

- Performing Specialty Scripting for Applications

- Administering a Network

- Teaching Programming Skills

- Helping People Decide on Location

- Performing Data Mining

- Interacting with Embedded Systems

- Carrying Out Scientific Tasks

- Performing Real-Time Analysis of Data

Chapter 21: Ten Tools That Enhance Your Python Experience

- Tracking Bugs with Roundup Issue Tracker

- Creating a Virtual Environment by Using VirtualEnv

- Installing Your Application by Using PyInstaller

- Building Developer Documentation by Using pdoc

- Developing Application Code by Using Komodo Edit

- Debugging Your Application by Using pydbgr

- Entering an Interactive Environment by Using IPython

- Testing Python Applications by Using PyUnit

- Tidying Your Code by Using Isort

- Providing Version Control by Using Mercurial

Chapter 22: Ten (Plus) Libraries You Need to Know About

- Developing a Secure Environment by Using CryptLib

- Interacting with Databases by Using SQLAlchemy

- Seeing the World by Using Google Maps

- Adding a Graphical User Interface by Using TkInter

- Providing a Nice Tabular Data Presentation by Using PrettyTable

- Enhancing Your Application with Sound by Using PyAudio

- Manipulating Images by Using PyQtGraph

- Locating Your Information by Using Whoosh

- Creating an Interoperable Java Environment by Using JPype

- Accessing Local Network Resources by Using Twisted Matrix

- Accessing Internet Resources by Using Libraries

11. Live Labs

The benefits of live-labs are:

- Exam based practical tasks
- Real equipment, absolutely no simulations
- Access to the latest industry technologies
- Available anytime, anywhere on any device
- Break and Reset functionality
- No hardware costs

Lab Tasks

Writing Your First Application

- Exploring Google Colab

Managing Information

- Using Membership, Identity, and Assignment Operators
- Using Unary and Ternary Operators
- Using Bitwise, Logical, and Relational Operators
- Creating Custom Function

Making Decisions

- Using Conditional Statements

Performing Repetitive Tasks

- Using the for Loop
- Using the while Loop
- Using Nested Loops

Dealing with Errors

- Handling Exceptions

Working with Strings

- Working with Escape Sequences
- Working with Strings
- Formatting the Strings

Managing Lists

- Working with Lists

Collecting All Sorts of Data

- Working with Tuples

- Working with Dictionaries
- Working with Stacks
- Working with Queues and Dequeues

Creating and Using Classes

- Working with Classes
- Creating and Using an External Class

Storing Data in Files

- Working with Data in a File

Here's what you get

21	21	37
LIVE LABS	**VIDEO TUTORIALS**	**MINUTES**

GET IN TOUCH:

3187 Independence Drive Livermore, CA 94551, United States

+1-415-763-6300

support@ucertify.com

www.ucertify.com