

uCertify

Course Outline

Basics of Python Programming



04 Aug 2025

1. Exercises, Quizzes, Flashcards & Glossary

Number of Questions

2. Expert Instructor-Led Training

3. ADA Compliant & JAWS Compatible Platform

4. State of the Art Educator Tools

5. Award Winning Learning Platform (LMS)

6. Chapter & Lessons

Syllabus

Chapter 1: Preface

Chapter 2: Introduction to Python Variables, Datatypes and Operators

Chapter 3: Conditions and Loops

Chapter 4: Arrays and Functions

Chapter 5: Lists, Tuples, Iterators Generators, and Sets

Chapter 6: Dictionaries and Modules

Chapter 7: Object-Oriented Programming

Chapter 8: File Handling and Databases

Chapter 9: Regular Expressions, Date and Time

Chapter 10: Exception Handling

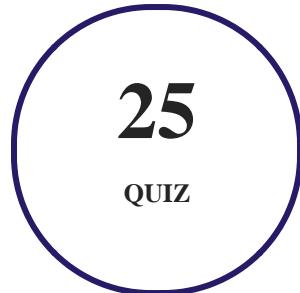
Chapter 11: NumPy and Tkinter

Chapter 12: Appendix 1: Practice Exercises with Solutions

Videos and How To

1. 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.



2. 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.

3. 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.

4. 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.

5. 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

6. 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: Preface

Chapter 2: Introduction to Python Variables, Datatypes and Operators

- Introduction
- Python installation
- Operators in Python
- Conclusion
- Points to remember
- Exercises

Chapter 3: Conditions and Loops

- If condition
- Nested-if condition
- Loops
- Break and continue statement
- Conclusion
- Questions
- Points to remember

Chapter 4: Arrays and Functions

- Arrays
- Functions
 - Local and global variables in functions
- Lambda function
- Conclusion
- Points to remember
- Exercises

Chapter 5: Lists, Tuples, Iterators Generators, and Sets

- Introduction
- Lists
- Slicing
- Tuples
- Python iterators
- Python generators
- Sets
- Conclusion
- Points to remember

- Exercises

Chapter 6: Dictionaries and Modules

- Introduction
- Dictionaries in Python
- Modules
- Conclusion
- Points to remember
- Exercises

Chapter 7: Object-Oriented Programming

- Introduction
- Classes and objects
- Inheritance
- Overriding
- Encapsulation
- Conclusion
- Points to remember
- Exercises

Chapter 8: File Handling and Databases

- Introduction
- File and modes used in file handling
- Databases
- Conclusion
- Points to remember
- Exercises

Chapter 9: Regular Expressions, Date and Time

- Introduction
- Regular expression for pattern matching
- Date and time functions
- Conclusion
- Points to remember
- Exercises

Chapter 10: Exception Handling

- Introduction
- Exception

- Conclusion
- Points to remember
- Exercises

Chapter 11: NumPy and Tkinter

- Introduction
- 1-D array operations using NumPy
- Matrix addition and multiplication using NumPy
- Fundamentals of Tkinter main application window
- Label and button widget in Tkinter
- Button click event and input from user in Tkinter
- Conclusion
- Points to remember
- Exercises

Chapter 12: Appendix 1: Practice Exercises with Solutions

- Sample programs

You can't stay away! Get
in touch with our team to