

# uCertify

## Course Outline

**MTA: Basics of Python Programming (98-381 & PCAP-31-02)**



26 Apr 2024

1. Course Objective
2. Pre-Assessment
3. Exercises, Quizzes, Flashcards & Glossary  
Number of Questions
4. Expert Instructor-Led Training
5. ADA Compliant & JAWS Compatible Platform
6. State of the Art Educator Tools
7. Award Winning Learning Platform (LMS)
8. Chapter & Lessons

Syllabus

Chapter 1: Introduction

Chapter 2: Python Basics

Chapter 3: The Control Flow Tools in Python

Chapter 4: Data Structures

Chapter 5: Functions in Python

Chapter 6: Modules in Python

Chapter 7: Input and Output

Chapter 8: Errors and Exceptions

Chapter 9: Object Oriented Programming

Chapter 10: What's Next in Python

Chapter 11: Appendix A: Resources/Works Consulted

Chapter 12: Appendix B: The Python Standard Library

Chapter 13: Appendix C: PCAP and 98-381 Exam Objectives

Videos and How To

9. Practice Test

Here's what you get

Features

10. Performance Based labs

Lab Tasks

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11. Post-Assessment

## 1. Course Objective

Prepare for the MTA 98-381 and PCAP-31-02 certification exams with the Basics of Python Programming for 98-381 and PCAP-31-02 course and lab. The lab provides a hands-on learning experience in a safe, online environment. The Microsoft Python certification course and lab cover the 98-381 and PCAP-31-02 exam objectives and include topics such as Python basics, Data structure, Python modules, errors and exceptions, object-oriented programming, input and output, Python functions, control flow tools in Python, and more.

## 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.

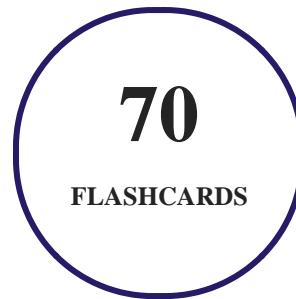
## 3. Quizzes

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.



## 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: Introduction

- About Python
- Getting Started with Python
- Running Python
- Basic Syntax
- Lesson Summary

#### Chapter 2: Python Basics

- Data Types



- Python Operators and Expressions
- Lesson Summary

### Chapter 3: The Control Flow Tools in Python

- Decision Making
- Loops
- Lesson Summary

### Chapter 4: Data Structures

- Lists
- Tuples
- Sets
- Dictionaries
- Sequences
- Looping Techniques
- Lesson Summary

### Chapter 5: Functions in Python

- Functions

- More on Defining Functions
- Intermezzo: Coding Style
- Lesson Summary

## Chapter 6: Modules in Python

- Modules
- Detailed Study on Modules
- Standard Modules
- The dir() Function
- Packages
- Lesson Summary

## Chapter 7: Input and Output

- Input from User
- Output Formatting
- Reading and Writing Files
- Directories in Python
- Lesson Summary

## Chapter 8: Errors and Exceptions

- Syntax Errors
- Exceptions
- Defining Clean-Up Actions
- Lesson Summary

## Chapter 9: Object Oriented Programming

- Names and Objects
- Scopes and Namespaces
- Classes
- Data Hiding
- Inheritance
- Private Variables and Methods
- Odds and Ends
- Iterator and Generator
- Lesson Summary

## Chapter 10: What's Next in Python

- More on Python
- Applications of Python
- The Complete Python Program

## Chapter 11: Appendix A: Resources/Works Consulted

- Books
- Online Resources

## Chapter 12: Appendix B: The Python Standard Library

## Chapter 13: Appendix C: PCAP and 98-381 Exam Objectives

## 11. Practice Test

### Here's what you get

**40**

PRE-ASSESSMENTS  
QUESTIONS

**2**

FULL LENGTH TESTS

**40**

POST-ASSESSMENTS  
QUESTIONS

### Features

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.

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 simulators that provides virtual environment. Labs deliver hands on experience with minimal risk and thus replace expensive physical 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**

- Exchanging the numbers
- Converting float data type to integer data type
- Using the len() built-in function
- Using arithmetic operators

- Using the exponentiation operator
- Using the bitwise operator
- Truncating the decimals
- Using the if-elif-else statement - Part 1
- Using the if-elif-else statement - Part 2
- Using the if-else statement
- Checking whether a string is palindrome
- Truncating vowels from a string
- Comparing two variables
- Using the for loop to print a pattern
- Using the break statement
- Using the while statement
- Finding LCM of two numbers
- Sorting words from a string
- Finding elements of a list
- Concatenating tuples
- Modifying a set
- Creating a dictionary
- Finding the cube of a number
- Creating a function
- Creating a function with its default value
- Using an anonymous function
- Using the math module
- Using the datetime module
- Obtaining a year from the date
- Using old string formatting
- Printing the pattern
- Using the format() method
- Retrieving all the files from a folder
- Printing the first line from a file
- Writing the text to a file
- Reading a file
- Performing different operations on file
- Correcting the errors
- Rectifying the errors - Part 1

- Rectifying the errors - Part 2

## 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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