

Certified Associate in Python Programming (PCAP)

This PCAP – Certified Associate in Python Programming training covers how to write and develop with Python in backend development, software development, and data science at an associate level. Python is one of the simplest, most accessible programming languages around today, and it's hard to imagine a developer who won't benefit from knowing it. Python always seems to show up everywhere.

[CBT Nuggets course material](#) →

WEEK 1

Introduction to Programming and Python

- Supplemental File
- Wherefore Art Thou Programming?
- Compiling Code into Executables
- Installing Python 3
- Configuring the PATH variable
- Choosing a Code Editor
- Writing our First Program

Python Variables and Data Types

- Overview
- Supplemental Files
- Understanding Variables
- Understanding Python Data Types
- Casting Data Types
- Python Literals
- Putting it All Together

Introduction to the Python Language

- Overview
- Supplemental File
- Preparing Our Coding Environment
- Basic Python Vocabulary
- Our First Programming Steps
- Good Programming Techniques

WEEK 2

Python Operators

Overview

Supplemental Files

Python Operators

Assignment Operator

Arithmetic Operators

Relational Operators

Combination, String, and Bitwise Operators

Making Change

Basic Input and Output with Python

Overview

Supplemental File

Basic Input and Output

Output with Print

Print Parameters Sep, End, and File

Getting data with Input

Using fileinput to Read Files

Formatting Text Output

Putting Input and Output to Use

Conditionals and Loops in Python

Overview

Supplemental File

Conditionals and Loops in Python

Branching Code with Conditionals

Iterating Code with While Loops

Iterating Code with For Loops

Conditional and Loop Control

Creating the Game Hangman

WEEK 3

Understand Python Strings

Overview

Supplemental Files

Understand Python Strings

Storing and Manipulating Strings

Encoding Strings with ASCII, Unicode, and UTF-8

Escape Characters for Strings

Operators and String Functions

Lists and Dictionaries in Python

Overview

Supplemental Files

Lists and Dictionaries in Python

Ordering Values in Lists

Named Values in Dictionaries

Working with Dictionaries

Using Collections in Practice

Introduction to Functions in Python

Overview

Supplemental Files

Introduction to Functions in Python

Invoking Functions

Importing Functions

Defining Functions

Lambda Functions

WEEK 4

Recursive Functions

Advanced Operations with Functions in Python

Overview

Supplemental File

Advanced Python Functions

Python Variable Scope

Yielding Python Functions

Mapping, Filtering, and Reducing

Sorting Functions

Importing and Using Modules in Python

Overview

Supplemental File

Importing Modules

Using Import and Modules

Installing Packages with Pip

Writing Modules

Handle Exceptions with Python

Overview

Supplemental File

Handle Exceptions with Python

Understanding Exceptions and Assertions

Handling Errors with Try and Except

Else, Finally, and the Exception Object

Exception Object Hierarchy

WEEK 5

Introduction to Object Oriented Programming with Python

Overview

Supplemental File

Introduction to Object-Oriented Programming with Python

Classes and Objects

Understanding Attributes

Understanding Methods

Using Objects in Practice

Advanced Object-Oriented Programming with Python

Overview

Supplemental File

Advanced Object-Oriented Programming with Python

Public vs Private Members

Using the Constructor Method

Introspection Methods

Serializing Objects

Inheritance

Read and Write Files with Python

Overview

Supplemental File

Reading and Writing Files

Opening Files and File Objects

Reading Stream File Objects

Writing to Stream File Objects

Binary Reading and Writing

