



## Introduction to Python

- 2 Days
- Lecture and Hands-on Labs

### Course Overview

This Python fundamentals course provides essential skills required for anyone looking to advance in Python programming. It is ideal for both beginners taking their first steps in programming and seasoned developers transitioning to Python or seeking to fill gaps in their knowledge. Over two hands-on days, participants will master the core concepts that form the foundation of all Python programming and are critical for any further specialization. Additionally, this course includes all the necessary labs to prepare for and earn the PCEP certification, making it a perfect choice for those seeking official recognition of their Python proficiency. By the end of this course, students will be equipped with the essential Python knowledge and practical skills necessary for success in any Python-driven field or project. Whether you're just starting out or refining your expertise, this course will solidify your Python foundation and prepare you for advanced applications.

Review this course online at <https://www.alta3.com/courses/py-100>

### Who Should Attend

- Anyone looking to build a strong foundation in Python
- Software Developers




### What You'll Learn

- Understand the Basics of Python Programming: Build foundational knowledge of Python, including functions, objects, and methods.
- Work with Core Data Structures: Learn how to create, manipulate, and apply Python lists and dictionaries for effective data handling.
- Master Conditional Logic and Control Flow: Use if-elif-else statements and loops (for and while) to build dynamic and responsive scripts.
- Interact with Files in Python: Gain hands-on experience reading from and writing to files for data storage and processing.
- Explore Python Modules and Libraries: Discover how to use built-in modules, third-party libraries, and manage dependencies with PIP.
- Handle Errors with Python's Try-Except: Learn how to write robust code by catching and managing runtime errors effectively.
- Work with Classes and Inheritance: Understand the basics of object-oriented programming in Python, including creating and extending classes.

- Develop Advanced Iteration Techniques: Refine your use of loops and iterations to solve complex problems with Pythonic efficiency.
- Explore Advanced Data Structures: Delve into advanced use cases for lists, tuples, and dictionaries to handle structured data.
- Prepare for Python Certification: Get introduced to the PCEP exam and tackle advanced Python topics to enhance your credentials.

## Outline






### Source Code Management

-  Lecture: What to Choose?
-  Lecture + Lab: SCM Option #1 - GitHub
-  Lecture + Lab: SCM Option #2 - GitLab





### Foundational Python

-  Lecture + Lab: Built-in Functions
-  Lecture + Lab: Custom Functions
-  Lecture + Lab: Objects and Methods
-  Lecture: Python Lists
-  Lecture + Lab: Python Lists
-  Lecture: Python Dictionaries
-  Lecture + Lab: Python Dictionaries
-  Lecture: Conditionals
-  Lecture + Lab: If, Elif, and Else Conditions
-  Lecture + Lab: While Loops
-  Lecture + Lab: For Loops
-  Lecture: Reading and Writing to Files
-  Lecture + Lab: Reading Files
-  Lecture + Lab: Using Modules
-  Lecture + Lab: PIP and Third Party Libraries
-  Lecture + Lab: Try and Except
-  Lecture + Lab: Python Classes & Inheritance

### Optional- PCEP Certification Guide

-  Lecture: Introduction to the PCEP Exam
-  Lecture + Lab: Advanced Numbers and Operators
-  Lecture + Lab: Pythonic Loops and Iteration
-  Lecture + Lab: Advanced Lists and Tuples
-  Lecture + Lab: Advanced Functionality and Error Handling

### PCEP Mock Exams

-  Lecture + Lab: Mock Exam 1
-  Lecture + Lab: Mock Exam 2
-  Lecture + Lab: Mock Exam 3
-  Lecture + Lab: Mock Exam 4

### Prerequisites

- Basic Keyboard Proficiency: Ability to efficiently navigate and use a keyboard, including typing, copy-pasting, and basic text editing in terminal and/or text editors.

## Next Courses

- Python 201: Building API Clients and Servers with Python (<https://alta3.com/courses/py201>)
- Python 202: Network Automation with Python (<https://alta3.com/courses/py202>)
- Python 301: Data Sciences with Python (<https://alta3.com/courses/py301>)
- Git and GitHub (2 days) (<https://alta3.com/courses/github>)
- Git and GitLab CI/CD (2 days) (<https://alta3.com/courses/gitlab>)