

Introduction to Python Training

Applied Technology Academy

This 5-day course introduces the student to the Python language. Upon completion of this class, the student will be able to write non-trivial Python programs dealing with a wide variety of subject matter domains. Topics include language components, working with a professional IDE, control flow constructs, strings, I/O, collections, classes, modules, and regular expressions. The course is supplemented with many hands-on labs, solutions, and code examples.

LEVEL	DURATION	EXPERIENCE	AVERAGE SALARY	LABS
Beginner	5 Days	1 year: coding	\$85,000	Yes

Course Overview

- Create working Python scripts following best practices
- Use Python data types appropriately
- Read and write files with both text and binary data
- Get familiar with the standard library and its work-saving modules
- Use statements and control structures
- Create professional Python applications to a basic level
- Learn to work with functions such as modules and classes
- Know when to use collections such as lists, dictionaries, and sets

Course Outline

- 1. An Introduction to Python
- A Brief History of Python
- Python Versions
- Installing Python
- Environment Variables
- Executing Python from the Command Line
- IDLE
- Editing Python Files
- Python Documentation
- Getting Help
- Dynamic Types
- Python Reserved Words
- Naming Conventions
- 2. Basic Python Syntax

- Basic Syntax
- Comments
- String Values
- String Methods
- The format Method
- String Operators
- Numeric Data Types
- Conversion Functions
- Simple Input and Output
- The % Method
- The print Function
- 3. Language Components
- Indenting Requirements
- The if Statement
- Relational Operators
- Logical Operators
- Bitwise Operators
- The while Loop
- break and continue
- The for Loop
- 4. Collections
- Lists
- Tuples
- Sets
- Dictionaries
- Sorting Dictionaries
- Copying Collections
- 5. Functions
- Defining Your Own Functions
- Parameters
- Function Documentation
- Keyword and Optional Parameters
- Passing Collections to a Function
- Variable Number of Arguments
- Scope
- Functions – “First Class Citizens”

- Passing Functions to a Function
- Mapping Functions in a Dictionary
- Lambda
- Inner Functions
- Closures
- 6. Modules
- Modules
- Standard Modules – sys
- Standard Modules – math
- Standard Modules – time
- The dir Function
- 7. Exceptions
- Errors
- Run Time Errors
- The Exception Model
- Exception Hierarchy
- Handling Multiple Exceptions
- raise
- assert
- Writing Your Own Exception Classes
- 8. Input and Output
- Data Streams
- Creating Your Own Data Streams
- Access Modes
- Writing Data to a File
- Reading Data From a File
- Additional File Methods
- Using Pipes as Data Streams
- Handling IO Exceptions
- Working with Directories
- Metadata
- The pickle Module
- 9. Classes in Python
- Classes in Python
- Principles of Object Orientation
- Creating Classes

- Instance Methods
- File Organization
- Special Methods
- Class Variables
- Inheritance
- Polymorphism
- Type Identification
- Custom Exception Classes
- 10. Regular Expressions
- Simple Character Matches
- Special Characters
- Character Classes
- Quantifiers
- The Dot Character
- Greedy Matches
- Grouping
- Matching at Beginning or End
- Match Objects
- Substituting
- Splitting a String
- Compiling Regular Expressions
- Flags

Intended Audience

Anyone interested in learning Python with experience with at least one programming language. The course is supplemented with many hands-on labs, solutions, and code examples.

Prerequisites

Optimally, students will have experience with at least one programming or scripting language e.g., C, C++, Java, etc. This being said, students with a technical inclination with experience developing projects like spreadsheets, SPSS scripts, Bash scripts, or macros are welcome to join.

Follow-On Courses

- Python for Network Automation
- Python for Reverse Engineers
- Threat Hunting with Python

Ready to enroll? Call 800.674.3550 or email Info@AppliedTechAc.com — private team cohorts, GSA MAS purchasing, military credentialing funding, VA GI Bill and VR&E and student financing available.