



Python 101 - Basics

- 5 Day Course
- Lecture & Labs
- Every course includes the opportunity to earn a Python Basics certification from Alta3 Research.

Course Overview

Python is an interpreted, object-oriented, high-level language that empowers you to automate your work so it can be completed predictably and accurately. This freely available language is installed on all major platforms without a charge. Given Python's vast libraries, you'll have a head start programming most tasks.

Be it system admins, network, cloud, or storage engineers, all lessons in our courseware are highly relevant for scripting within the workplace, including; data retrieval and storage from the local system, working with RESTful APIs, and decoding JSON.

Class is a combination of live instructor demo and hands-on labs.

Who Should Attend


- This course is an appropriate introduction to students of any background looking to get started with Python
- System Administrators
- Network Administrators and Engineers
- DevOps Engineers
- Management, Directors, VPs

What You'll Learn

- Current Python3 Standard Library
- Popular 3rd party libraries
- Version control with git
- Git integration with popular SCM (GitHub)
- Parsing and building files
- Pull JSON from API queries
- Manipulate Excel and other popular formats with pandas dataframes
- Building feature rich charts and graphs
- Searching with Regular Expressions (regex)
- Best practice techniques
- AI LLM prompt engineering for Python snippets and jumpstarting solutions

Outline

Certification

-  Lecture + Lab: Alta3 Research Python Certification (OPTIONAL)






AI LLM Toolkit

-  Lecture + Lab: Large Language Model toolkit for AI Solution Assistance










Software Control Management

-  Lecture + Lab: SCM Option #1 - GitHub
-  Lecture + Lab: SCM Option #2 - GitLab

Basics

-  Lecture + Lab: Installing Python
-  Lecture: Python Basics
-  Lecture + Lab: The Shebang Line and File Permissions
-  Lecture + Lab: The Standard Library, functions, and print()
-  Lecture + Lab: Collecting user input()







Common Objects

-  Lecture: Python Lists
-  Lecture + Lab: Working with Lists
-  Lecture + Lab: List Objects and Methods
-  Lecture + Lab: Slicing complex lists (lists within lists)
-  Lecture: Python Dictionaries
-  Lecture + Lab: Python Dictionaries
-  Lecture + Lab: Getting dir(obj) help() and pydoc
-  Lecture: Python Strings
-  Lecture + Lab: String Methods




Interacting with the OS

-  Lecture + Lab: Copying Files and Folders
-  Lecture + Lab: Moving and Renaming Files and Folders






Conditionals

-  Lecture: Conditionals
-  Lecture + Lab: Testing if conditionals
-  Lecture + Lab: IPv4 Testing with if
-  Challenge: Writing your own if-logic script
-  Lecture + Lab: Using while, if, elif, else (Monty Python)
-  Lecture + Lab: Debugging and Troubleshooting while, if, elif, else







Loops

-  Lecture + Lab: Introduction to looping
-  Lecture + Lab: Looping with for
-  Lecture + Lab: Using for, range(), and with







Working with Files

-  Lecture: Reading and Writing to Files
-  Lecture + Lab: Parsing Log Files
-  Lecture + Lab: Creating Output Files from Data Sets
-  Lecture + Lab: Read from Files
-  Lecture + Lab: Archive with zipfile

Beyond Basics

-  Lecture + Lab: Creating Functions
-  Lecture + Lab: pip, import and PyPi Packages to Know
-  Lecture + Lab: Exploring Network Interfaces
-  Lecture + Lab: Defining Functions
-  Lecture + Lab: Scripting Commands with Python
-  Lecture + Lab: try and except




Working with Data Sets

-  Lecture + Lab: Producing Graphs and Charts
-  Lecture + Lab: os.walk() the Directory Tree
-  Lecture + Lab: Excel JSON and CSV - Intro to Pandas
-  Lecture: Converting JSON to Python Data Types
-  Lecture + Lab: Python, APIs, and JSON
-  Lecture + Lab: requests library - Open APIs




Regular Expressions

-  Lecture + Lab: Searching with Regular Expressions
-  Lecture + Lab: Use RegEx to Search Text







Testing and Tools

-  Lecture + Lab: Best Practice and pylint
-  Lecture + Lab: Testing code with pytest
-  Lecture + Lab: Packaging Python Projects

Classes and Objects

-  Lecture + Lab: Creating Classes
-  Lecture + Lab: Inheritance
-  Lecture + Lab: Using Classes

Self-Study Opportunities

-  Lecture + Lab: Running Python Scripts with Crontab
-  Lecture + Lab: Argument Parsing
-  Lecture + Lab: Unpacking Arguments
-  Lecture + Lab: Automating SMTP and Extended SMTP
-  Lecture + Lab: XML Parsing with ElementTree
-  Lecture + Lab: Timestamping - import time datetime

Prerequisites

- Keyboard proficiency

Certification

- Python Basics - Certification Project