



Introduction to Python 3

Course ID #: 1411-901-03-W

Hours: 21

Course Content

Course Description:

In this Python training course, students learn to program in Python. The course is aimed at students new to the language and who may, or may not, have experience with other programming languages. Students will learn: how Python works and its place in the world of programming languages; to work with and manipulate strings; to perform math operations; to work with Python sequences; to collect user input and output results; flow control processing; to write to, and read from, files; to write functions; to handle exception; and work with dates and times. This Python course is taught using Python 3; however, differences between Python 2 and Python 3 are noted.

Target Student:

Students new to the language who may, or may not, have experience with other programming languages.

Prerequisites:

Some programming experience would be beneficial.

Topics:

Python Basics

- Running Python
- Hello, World!
- Literals
- Python Comments
- Data Types
- Variables
- Writing a Python Module
- print() Function
- Named Arguments
- Collecting User Input
- Getting Help

- Function Parameters
- Returning Values
- Importing Modules

Math

- Arithmetic Operators
- Modulus and Floor Division
- Assignment Operators
- Built-in Math Functions
- The math Module
- The random Module
- Seeding

Functions and Modules

- Defining Functions
- Variable Scope
- Global Variables

Python Strings

- Quotation Marks and Special Characters
- String Indexing
- Slicing Strings



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- Concatenation and Repetition
- Common String Methods
- String Formatting
- Built-in String Functions

Running Python Scripts from the Command Line

- The sys Module
- sys.argv

Iterables: Sequences, Dictionaries, and Sets

- Definitions
- Sequences
- Unpacking Sequences
- Dictionaries
- The len() Function
- Sets
- *args and **kwargs

Flow Control

- Conditional Statements
- The is and is not Operators
- Python's Ternary Operator
- Loops in Python
- The enumerate() Function
- Generators
- List Comprehensions

File Processing

- Opening Files
- The os and os.path Modules

Exception Handling

- Wildcard except Clauses
- Getting Information on Exceptions
- The else Clause
- The finally Clause
- Using Exceptions for Flow Control
- Exception Hierarchy

Dates and Times

- Understanding Time
- The time Module
- The datetime Module