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## Python Programming Introduction

Hands-On Course 1905 • 4 Days

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#### You Will Learn How To:

- · Rapidly develop feature-rich applications with Python
- · Structure code with classes, functions, modules and OO features
- Access standard and third-party modules and packages
- Develop dynamic, platform-independent GUIs
- Create and deploy data-driven web applications



### Truly Hands-On Experience:

- Handling large data sets with built-in collection types
- Implementing a data-driven web application
- Accessing various data stores with accessors
- Developing reusable modules with functions
- Leveraging interfaces to achieve dynamic behavior
- Use of AdaptaLearn™ Exercises, PLUS access to Computing Sandbox™

About This Course: Python is a powerful and flexible object-oriented scripting language that is designed for ease of use and enhanced productivity. Organizations benefit from rapid development cycles, faster time-to-market and lower cost of maintenance. This course provides hands-on experience using Python to develop applications, automate administrative tasks and integrate systems effectively.





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### Introduction to Python

- Python language characteristics
- The Python execution model

#### Leveraging Python Built-in Types Manipulating string and numeric literals

- Declaring and initializing variables
- Performing arithmetic calculations
- Making decisions and performing iterations
- Formatting and slicing strings

#### Aggregating related data

- Accessing positional information in lists
- · Representing ordered data with tuples
- Consistently handling data collections with iterators

## Organizing and Structuring Code Defining and calling functions

- Positional, keyword and default arguments
- Implementing variable-length argument lists
- · Iterating with generator functions

#### Grouping code into modules

- Importing and reloading modules
- Referencing functions from modules by qualification
- Combining modules into packages

## Implementing Classes and Objects Declaring and modifying objects

- Encapsulating attributes and methods in classes
- Initializing objects with constructors
- Accessing derived data with properties
- Overloading operators

#### Inheritance and polymorphism

- Reusing functionality through inheritance
- Extending methods from base classes
- · Overriding methods for dynamic behavior
- Tracing the scope in the namespace
- · Enhancing functionality with class decorators

## Manipulating the File System Managing files

- Reading and writing text and binary files
- Importing the OS module for directory management

#### Increasing program robustness through handling exceptions

- Maintaining program control with error handlers
- Detecting errors and raising exceptions

## Interfacing with Relational Databases Establishing communication

- Creating a SQL database connection
- Instantiating cursors to access a database

#### Executing SQL statements within a Python program

- Retrieving desired data sets
- Updating the database with action statements

### Constructing a GUI with Tkinter



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#### Building the user interface

- Defining a window layout
- Placing widgets

#### Listening for interface events

- · Providing menu items
- Responding to mouse clicks
- Binding event handlers

## Developing Web Applications Analyzing the request processing pipeline

- Positioning the role of Python
- Mapping requests to Python scripts

#### Developing MVC with Python

- Integrating the model with a database
- Processing requests with Python controllers

#### Benefiting from the Django framework

- Improving productivity with code reduction
- Simplifying application development
- Accessing the database and producing HTML with Django templates



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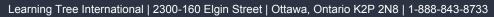














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