

## **Course 589: Python Programming (4 days)**

### **Course Description...**

Python is a powerful, portable, object-oriented, open source programming language. This program starts by covering the basic: variables, control of flow, functions, modules, packages, and standard libraries. The course then takes an in-depth look at data structures, exception handling, web scripting, I/O, usefulness for system programming. This class is approximately 80% hands-on.

### **Learning objectives...**

- How to create an Python program
- How to use and manipulate variables
- How to use lists and tuples
- How to advance data structure such as collections
- How to use regular expressions effectively
- How to work with web pages
- How to handle exceptions
- How to use and create objects and classes

### **Who should attend...**

Anyone who want to learn how to program in Python.

### **Prerequisites...**

Prior programming experience is essential to achieving the full benefit of the course. Knowledge of HTML and XML is useful, as well as having done some web production work.

**See next page for a detailed course outline...**

## Course Outline...

### Python Programming Environments

1. Command Line
2. The IDLE IDE
3. A first program - Twice
4. Getting Help: Debugging

### Variable Fundamentals

1. Data types and assignment
2. Strings
3. Coercion and conversion
4. Basic I/O

### Program Flow Control

1. Truth in Python
2. if in all forms
3. while
4. break and continue
5. Shorthand operators

### Lists and Tuples

1. What is a list?
2. What is a tuple?
3. List operators
4. Tuple operators
5. for looping
6. Lists of lists

### Functions, Modules, and Packages

1. Function Basics
2. Function Attributes
3. Methods of Calling Functions
4. Variable Scope
5. Creating and using Modules
6. Using Packages

### Python Objects

1. Python and objects
2. Using objects and methods
3. Creating classes
4. Attributes and properties
5. Inheritance
6. Overloading of operators
7. Standards for objects and classes

## **Library Tour**

1. OS Interface Introduction
2. Wild cards
3. Command line
4. String Pattern Matching (RE)
5. Internet Access

## **File Handling**

1. File I/O
2. Network I/O

## **Data Structures in Python**

1. Collections and Sequences
2. Assignments
3. Operators

## **Exception Handling in Python**

1. What are exceptions
2. Creating exception handlers
3. Raising Exceptions

## **Web Scripting**

1. Forms Processing
2. Security Concerns
3. Web I/O
4. Server Side Scripting

*Please contact your ROI representative to discuss course tailoring!!!*