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Learning Style: Virtual Classroom

Technology:

Difficulty: Advanced

Course Duration: 3 Days

## Python® Programming: Advanced (LO-94012)



### About this course:

Python® continues to be a popular programming language, perhaps owing to its ability to get a lot of work done in few lines of code, and its versatility. Python is useful for developing custom software tools, applications, web services, and cloud applications. In this course, you'll build upon your basic Python skills, learning more advanced topics such as object-oriented programming patterns, development of graphical user interfaces, data management, threading, unit testing, and creating and installing packages and executable applications.

The average salary for Python Developer is **\$115,222** per year.

## Course Objectives:

- Create object-oriented Python applications.
- Design and create a GUI.
- Store data in a database from Python applications.
- Communicate using client/server network protocols.
- Manage multiple processes with threading.
- Implement unit testing.
- Package an application for distribution.

## Audience:

- This course is designed for existing Python programmers who have at least one year of Python experience and who want to expand their Python proficiencies.

## Prerequisites:

- You should have experience with object-oriented programming and Python

## Course Outline:

### Lesson 1: Using Object-Oriented Python

**Topic A:** Create and Use Classes in an Application

**Topic B:** Use Magic Methods

**Topic C:** Incorporate Class Factories

### Lesson 2: Creating a GUI

**Topic A:** Design a GUI

**Topic B:** Create and Arrange a GUI Layout

**Topic C:** Interact with User Events

### Lesson 3: Using Databases

**Topic A:** Basics of Data Management

**Topic B:** Use SQLite Databases

**Topic C:** Manipulate SQL Data

## Lesson 4: Network Programming

**Topic A:** Basics of Network Programming

**Topic B:** Create a Client/Server Program

## Lesson 5: Managing Multiple Processes with Threading

**Topic A:** Create a Threaded Application

**Topic B:** Manage Thread Resources

## Lesson 6: Implementing Unit Testing

**Topic A:** Test-Driven Development

**Topic B:** Write and Run a Unit Test Case

**Topic C:** Create a Test Suite

## Lesson 7: Packaging an Application for Distribution

**Topic A:** Create a Package Structure

**Topic B:** Generate the Package Distribution Files

**Topic C:** Generate a Windows Executable

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