

## Specialist ICT Learning

### **ADVANCED PYTHON 3– GTIT20**

#### **Course Description**

The Advanced Python course aims to take attendees beyond basic Python. The course will enable attendees to enable to produce more efficient, safer and maintainable code using standard Python idioms.

The course assumes you are happy with core Python concepts and syntax.

#### **Duration**

3 days

#### **Target Audience**

This course is for delegates wanting to further their knowledge of Python.

#### **Course Prerequisites**

Delegates should have taken an introductory Python course or have six months of Python programming experience.

#### **Course Content**

##### **OO Programming in Python**

- classes/objects
- constructors/destructors
- methods instance/class
- inheritance/polymorphism
- abstract classes
- privacy/data hiding
- data attribute control

##### **Meta Programming**

- monkey patching
- meta classes

## Functional Programming in Python

- map/filter/reduce
- decorators
- closures
- lambdas
- comprehensions
- generators
- use of yield
- the itertools module

## Collections

- the collections module (defaultdict/Counter ...)
- the array module

## Data Transfer (Parsing/Generation)

- XML
- JSON
- YAML

## Concurrency

- threads
- processes
- coroutines

## Testing with pytest

## Debugging with pdb

## Potential Extra Topics

- socket programming
- integrating with C
- RESTful services