

Python Programming

Course Name	Python Programming
Course Description	Python is an easy-to-use interpreted language that has steadily gained in popularity over the last few years in a wide spectrum of applications, ranging from AI to Web Services. Python is also powerful, portable, object-oriented open source programming language for writing stand alone programs, quick scripts, and prototypes for large applications. This course provides an in-depth and hands-on introduction to the Python programming language, as well as the most common Python application domains and tool.
Target Population	Developers and system administrators who need the powerful scripting capability of Python for system administration and Web Applications.
Pre-requisites	Basic understanding of programming topics or another programming language such as Perl, Ruby or Bash/Shell Script.
Course Topics	<p>Module 1 -</p> <ul style="list-style-type: none"> ○ Define <p>Introduction</p> <ul style="list-style-type: none"> ● History of python ● Why python? ● Python is an OO language. ● Python is a dynamic language (what does that mean?) ● Basic OO principles (for those who need them) ● Comparison of python with other programming languages. <p>Your first python program:</p> <ul style="list-style-type: none"> ● How to install the python programming environment ● Your first script ● Running your script ● IDEs and tools for python. <p>Types and operators:</p> <ul style="list-style-type: none"> ● Why do we need basic types? ● Numbers ● Strings ● Lists ● Sets ● Dictionaries



- Tuples
- Files
- Object properties

Basic statements:

- Assignments
- Expressions
- Print
- Conditionals
- Loops

Functions:

- Why do we need functions?
- Basics
- Scoping
- Argument passing

Modules:

- Why do we need modules?
- Basics
- Namespaces
- Importing modules.
- Reloading modules.

Classes:

- Why do we need classes?
- Basics.
- The class statement.
- Using class methods.
- Inheritance in python.
- Operator overloading.
- Namespace lookup rules.
- Design using classes.

	<p>Exceptions:</p> <ul style="list-style-type: none">● Why do we need exceptions?● Basics● How are exceptions used?● Catching modes. <p>Systems programming in python:</p> <ul style="list-style-type: none">● IO● processes● threads● pipes● signals <p>Using modules:</p> <ul style="list-style-type: none">● Built in python modules● Downloading, installing and using modules off the net● Custom and specific modules for the use: pyusb◦ Writing your own module and uploading it.
Course Duration	32 hours (4 days)

