

Python Course Syllabus

Module 1 - Introduction to python

- ◆ Introduction
- ◆ A Brief History of Python
- ◆ Python Versions
- ◆ Installing Python
- ◆ Environment Variables
- ◆ Executing Python from the Command Line
- ◆ IDLE
- ◆ Editing Python Files
- ◆ Python Documentation
- ◆ Naming Conventions

Module 2 - Basic Python Syntax

- ◆ Basic Syntax
- ◆ Comments
- ◆ String Values
- ◆ String Methods
- ◆ The format Method
- ◆ String Operators
- ◆ Numeric Data Types
- ◆ Conversion Functions
- ◆ Simple Output
- ◆ Simple Input
- ◆ The % Method

- ◆ The print Function

Module 3 - Language Components

- ◆ Indenting Requirements
- ◆ The if Statement
- ◆ Relational and Logical Operators
- ◆ Bit Wise Operators
- ◆ The while Loop
- ◆ break and continue
- ◆ The for Loop

Module 4 - Collections

- ◆ Introduction
- ◆ Lists
- ◆ Tuples
- ◆ Sets
- ◆ Dictionaries
- ◆ Sorting Dictionaries
- ◆ Copying Collections

Module 5 – Functions

- ◆ Introduction
- ◆ Defining Your Own Functions
- ◆ Parameters
- ◆ Keyword and Optional Parameters
- ◆ Passing Collections to a Function
- ◆ Variable Number of Arguments
- ◆ Scope

- ◆ Functions - "First Class Citizens"
- ◆ Passing Functions to a Function
- ◆ map
- ◆ filter
- ◆ Inner Functions

Module 6 - Modules

- ◆ Modules
- ◆ Standard Modules - sys
- ◆ Standard Modules - math
- ◆ Standard Modules - time
- ◆ The dir Function

Module 7 – Exceptions

- ◆ Errors
- ◆ Runtime Errors
- ◆ The Exception Model
- ◆ Exception Hierarchy
- ◆ Handling Multiple Exceptions
- ◆ raise
- ◆ assert

Module 8 – Input & Output

- ◆ Introduction
- ◆ Data Streams
- ◆ Creating Your Own Data Streams
- ◆ Access Modes
- ◆ Writing Data to a File

- ◆ Reading Data From a File
- ◆ Additional File Methods
- ◆ Using Pipes as Data Streams
- ◆ Handling IO Exceptions
- ◆ Working with Directories
- ◆ Metadata
- ◆ The pickle Module

Module 9 – Classes in Python

- ◆ Classes in Python
- ◆ Principles of Object Orientation
- ◆ Creating Classes
- ◆ Instance Methods
- ◆ File Organization
- ◆ Special Methods
- ◆ Class Variables
- ◆ Inheritance
- ◆ Polymorphism
- ◆ Type Identification
- ◆ Custom Exception Classes

Module 10 – Regular Expressions

- ◆ Introduction
- ◆ Simple Character Matches
- ◆ Special Characters
- ◆ Character Classes
- ◆ Quantifiers

- ◆ The Dot Character
- ◆ Greedy Matches
- ◆ Grouping
- ◆ Matching at Beginning or End
- ◆ Match Objects
- ◆ Substituting
- ◆ Splitting a String
- ◆ Compiling Regular Expressions