**Basics Of Python:**

**Section 1 - Getting Started**

* Why Python?
* Running Python Programs
* Python Scripts
* Data Types
* Numbers and Variables
* Operators and Expressions
* Strings

**Section 2 - Working with Data**

* Lists
* Indexing and Slicing
* Tuples
* Dictionaries
* References and Copies

**Section 3 - Program Structure**

* Assignment Statements
* Blocks and Syntax Rules
* Expression Statements
* Multiway Branching
* Looping, Decisions
* Control Flow

**Section 4 - Functions**

* Defining Functions
* Scope Rules
* Global Statements
* Closures
* Argument Matching
* Passing Arguments

**Section 5 - Modules**

* Imports and Attributes
* Creating Modules
* Namespaces
* Reloading
* Module Packages
* File I/O
* File Scanners
* Files and Directories
* File Positioning

**Section 6 - Classes and Objects**

* Classes, Instances, Methods
* Static and Class Methods
* Invoking Methods
* Method Objects
* Inheritance
* Abstract Classes
* Polymorphism
* Method Overloading
* Properties
* Factories

**Section 7 - Exception Handling**

* Exception Keywords
* Exception Statements
* Raising Exceptions
* Catching Exceptions
* Propagating Exceptions
* Finally Blocks
* Built-in Exceptions
* Exception Classes and Objects
* Exception Hierarchies
* Exception Methods
* Custom Exceptions
* Signal Conditions

**Advanced Topics Python:**

**Section 1 - Functional Programming**

* Lambdas
* List Comprehensions
* Set and Dictionary Comprehensions
* Closures and Decorators
* Generators and Coroutines
* Generator Expressions
* Declarative Programming

**Section 2 - Systems Programming**

* File Descriptors
* Reading and Writing Files
* Files and Directories
* File Locking
* Memory Mapped I/O
* Creating Processes
* Process Management
* Pipes and Signals

**Section 3 - Classes and Objects**

* New Style Classes
* Inheritance and Mixins
* Properties and Slots
* Static and Class Methods
* Abstract Base Classes
* Method Overriding
* Attributes and Functors
* Decorators and Factories
* Descriptors and MetaClasses

**Section 4 - Persistence and Databases**

* Shelve and Pickle
* SQL Relational Databases
* Connection, Cursor, Row Objects
* Create, Read, Update, Delete
* Error Handing
* Query Results and Metadata
* Create and Aggregate Functions
* Exporting and Importing
* Transactions and Rollbacks
* Database Objects

**Section 5 - Network Programming**

* Sockets and Addresses
* Establishing Connections
* TCP Clients and Servers
* UDP Clients and Servers
* UDS Clients and Servers
* Network Objects
* SocketServers
* Secure Sockets Layer

**Section 6 - Web Programming**

* JSON and XML
* Using XML-RPC
* Rest Interfaces
* WSGI and HTML
* Flask Framework
* Controller Functions
* Templates and Forms
* Database ORMs

**Section 7 - Threads and Concurrency**

* Creating and Joining Threads
* Daemon Threads
* Thread Objects
* Timer Threads
* Locks and Semaphores
* Events and Conditions
* Thread Locals
* Thread Queues
* Process Queues and Tasks
* Process Pools

**Section 8 - Extending and Embedding Python**

* Calling C/C++ from Python
* Using ctypes
* Extension Modules in C/C++
* Raising Python Exceptions
* Calling Python from C/C++
* Embedding Python Interpreter
* Importing Python Modules from C/C++
* Converting Python Objects to C/C++
* Invoking Python Functions from C/C++