

**Manohar Papasani**

**EMAIL**: **manohar.vidhatri@gmail.com Phone: +91 9493014078**

Python Syllabus

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* **Introduction**
  + What is Scripting Language
  + Scripting language vs Programming Language
  + Features of Python
  + History of python
  + Python versions
  + Installing Python
  + Executing Python from the Command line
  + IDLE
  + Editing Python Files
  + Running python Scripts on windows/unix/linux
  + Python Documentation
  + Getting Help
  + Setting up path
* **Basic Python Syntax**
  + - Basic Syntax
    - Comments
    - Python Reserved Words
    - Naming Conventions
    - Print Function
    - Variable and Data Types
    - Type(),id() Functions
    - Del keyword
    - **String Manipulations**
      * Accessing Strings
      * Basic Operations
        + String Indexing and slicing
        + Functions and Methods
    - **Operators**
      * + Arithmetic operators
        + Relational Operators
        + Logical Operators
        + Assignment Operators
        + Short Hand Assignment Operators
        + Bitwise Operators
        + Membership Operators
        + Identity Operators
  + **Input Functions**
    - * Input() Function
      * Raw\_input() Function
  + Numeric Functions
  + Conversion Functions
* **Conditional Statements**
  + Simple if
  + If … else
  + Nested if else
  + If ..elif ….
  + Single line if statement

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| **Looping Statements** | | | |  |  | **Dictionaries** | | |
|  |  | While loop | |  |  |  |  | Introduction |
|  |  | While … else | |  |  |  |  | Accessing values |
|  |  | Infinte loop | |  |  |  |  | Working with |
|  |  | While …. Pass | | |  |  |  | dictionaries |
|  |  | For loop | |  |  |  |  | Functions and |
|  |  | Nested loops | |  |  |  |  | methods |
|  | **Control Statements** | | |  |  |  |  | Dictionary |
|  |  | Break |  |  |  |  |  | comprehension |
|  |  | Continue | |  |  |  |  | Iterators |
|  |  | Pass |  |  | **Sets** | |  |  |
|  | **Collections** | |  |  |  |  | Introduction | |
|  |  | **Lists** |  |  |  |  | Accessing values | |
|  |  |  | Introduction | |  |  | Workings with sets | |
|  |  |  | Accessing list | |  |  | Functions and methods | |
|  |  |  | Operations | |  |  | Set comprehension | |
|  |  |  | Working with lists | | **Functions** | |  |  |
|  |  |  | Functions and | |  | Defining function | | |
|  |  |  | methods | |  | Calling function | | |
|  |  |  | List comprehension | |  | Function Documentation | | |
|  |  |  | Iterators | |  | String | |  |
|  |  | **Tuples** |  |  |  | Types of Parameters | | |
|  |  |  |  | Introduction |  |  |  | Function without |
|  |  |  |  | Accessing |  |  |  | parameters |
|  |  |  |  | tuples |  |  |  | Function with |
|  |  |  |  | Operations |  |  |  | positional |
|  |  |  |  | Working with |  |  |  | parameters |
|  |  |  |  | tuples |  |  |  | Function with named |
|  |  |  |  | Functions and |  |  |  | parameters |
|  |  |  |  | methods |  |  |  | Function with default |
|  |  |  |  |  |  |  |  | parameters |

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* + - * + Function with variable length parameters
  + Return statement
  + Call by value
  + Call by reference
  + Scope of variables
    - * Global variables
      * Local variables
  + Passing collections to a function
  + Passing functions to function
  + Lamda function
* **Modules**
  + - Usage of modules
    - Creating user defined module
    - Setting path
    - Importing module
    - From … import
    - Creating alias name
    - Dir function
    - **Standard modules**
    - Turtle
    - pickle
* **File Handling**
  + What is file
  + Opening files
  + Closing files
  + Access modes
  + Writing data to files
  + Reading data from files
  + Tell(),seek() functions
  + File methods
  + Working directories
* **Exception Handling**
  + What is exception
  + Need of exception handling
  + Predefined exception names
  + Except, try,finally clause
  + Handling Multiple exceptions
  + User defined exceptions
  + Raise,assert statements

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|  | Math |  | **Advanced** |
|  | Random |  | **Python** |
|  | Date and time |  |  |
|  | Os and sys | **OOPs concept** | |
|  | String |  | Creating classes |
|  | Re |  | Creating object |
|  | Glob |  | Class attributes and |
|  | Urllib2 |  | methods |

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|  | Class variables | |  | Connections | |
|  | Self | argument |  | Executing Queries | |
|  | Constructor | |  | Transactions | |
|  | Destructor | | **Multi Threading** | | |
|  | **Inheritenance** | |  | Thread | |
|  |  | Single inheritance |  | Starting a thread | |
|  |  | Multiple inheritance |  | Threading module | |
|  |  | Multilevel inheritance |  | Synchronizing threads | |
|  | **Polymorphism** | |  | Multithreaded priority queue | |
|  |  | Over loading | **Advanced** | | **Modules** |
|  |  | Over riding |  | **Maths and Sciences** | |
|  | Data hiding | |  |  | Numpy |
| **Regular Expresssions** | | |  |  | Scipy |
| What is regular expression | | |  |  | Matplotlib |
|  | Wild card characters | |  | **Data Analysis** | |
|  | Forming regular | |  |  | Pandas |
|  | expressions | |  | **Excel** | |
|  | Character classes | |  |  | Openpyxl |
|  | Quantifiers | |  |  | Xlrd |
|  | Greedy matches | |  |  | Xlwt |
|  | Grouping | |  | **Gaming** | |
|  | Match function | |  |  | Pygame – 2d |
|  | Serach function | |  |  | animation |
|  | Matching VS searching | |  | Piglet–3d animation | |
|  | Sub function | |  |  | Random |
|  | Splitting a string | |  | **GUI programming** | |
|  | Flags | |  |  | Tkinter programming |
|  |  |  |  |  | PyGtk |
|  |  |  |  |  | PyQT |

* **Database**

 Introduction  **Network Programming**

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* + - Socket module
    - Twisted module
    - Client and server
  + **Testing**
    - Unittest
  + **Images**
    - Pil
    - Videocapture
  + **Web**
    - Beautiful soup
    - Pythonweb
    - Mechanize
* **Exercises**
* **Assignments**
* **Tasks**
* **Interview Questions**
* **Mock tests**
* **Detail hand notes**
* **Resume preparation**