

# Python Course Content

## 1. Introduction to Python (1 hours)

- ☐ What is Python
- ☐ Why should I learn Python
- ☐ Installing Python
- ☐ How to execute Python Programs

## 2. Variables and Data types ( 3 hours)

- ☐ What are Python Variables
- ☐ Python Numbers
- ☐ Python Strings
- ☐ Python Lists
- ☐ Python Tuples
- ☐ Python Dictionaries
- ☐ Python Sets
- ☐ Python Operators

## 3. Conditional Statements and Loops in Python (3 hours)

- ☐ Python If...Else Loop
- ☐ Elif statement in Python
- ☐ Python While Loops
- ☐ Python For Loops
- ☐ While and For loop with Else statement

## 4. Control Statements in Python (3 hours)

- ☐ Return Statement
- ☐ Continue Statement
- ☐ Break statement
- ☐ Pass statement

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## 5. Functions (4 hours)

- ☐ What are functions
- ☐ Creating a function
- ☐ Calling a function
- ☐ Parameters in function
- ☐ Built-in functions
- ☐ Function Recursion

## 6. Modules and Packages (4 hours)

- ☐ Importing Modules
- ☐ Creating Module
- ☐ Use a Module
- ☐ Renaming Modules
- ☐ Built-in Modules

## 7. Classes and Objects (4 hours)

- ☐ Create a Class
- ☐ Create an Object
- ☐ Object Methods
- ☐ Modify Object
- ☐ Class Inheritance
- ☐ Abstraction, Polymorphism, Encapsulation

## 8. File and Exception Handling (3 hours)

- ☐ File handling\Read files
- ☐ Write\Create files
- ☐ Delete files
- ☐ Try...except...finally statement

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## 9. Python Libraries (2 hours)

- ☐ Essential Python Libraries
- ☐ Installation & Setup
- ☐ Jupyter Notebook (Anaconda Distribution)

## 10. NumPy Arrays (4 hours)

- ☐ Creating multi-dimensional arrays
- ☐ NumPy Data Types
- ☐ Array attributes
- ☐ Indexing and Slicing
- ☐ Manipulating array shapes
- ☐ I/O with Numpy

## 11. Introduction to Pandas (3 hours)

- ☐ Installing Pandas
- ☐ Dataframes\Series
- ☐ Joining Dataframes
- ☐ Handling missing data
- ☐ Concatenating\Appending dataframes

## 12. Python Regular Expressions (3 hours)

- ☐ Match function
- ☐ Search function
- ☐ Match vs String function
- ☐ Search and Replace
- ☐ Extended Regular Expression
- ☐ Wildcards