

# 30-Day Python Learning Plan

Day	Topic	Description
1	Introduction to Python	Understand Python basics, installation, and setting up the environment.
2	Basic Syntax & Variables	Learn Python syntax, variables, and basic data types.
3	Operators and Expressions	Learn about arithmetic, comparison, and logical operators.
4	Control Flow	Master if-else, loops, and basic control structures.
5	Functions	Learn how to define functions, arguments, and return values.
6	Lists and Tuples	Work with lists and tuples, their methods and operations.
7	Dictionaries	Learn about dictionaries, key-value pairs, and methods.
8	Sets	Introduction to sets and operations like union, intersection, etc.
9	String Manipulation	Learn string methods and operations.
10	File I/O	Learn reading from and writing to files in Python.
11	Error Handling	Understand try-except blocks and custom exceptions.
12	Object-Oriented Programming (OOP)	Learn about classes, objects, inheritance, and encapsulation.
13	Modules and Packages	How to organize Python code into modules and packages.
14	Regular Expressions	Learn how to use regex for pattern matching in strings.
15	Python Virtual Environments	Learn to use virtual environments for project dependency management.
16	Working with APIs	Learn how to make requests and handle responses with APIs.
17	Web Scraping	Use libraries like BeautifulSoup to scrape data from web pages.
18	Unit Testing	Learn about testing with unittest and pytest.
19	Database Interaction	Connect to a database using SQLite or MySQL and perform queries.
20	JSON Handling	Learn to parse and manipulate JSON data.
21	Python Libraries: NumPy	Introduction to NumPy for handling arrays and mathematical operations.
22	Python Libraries: Pandas	Learn to manipulate and analyze data with pandas.
23	Data Visualization	Use Matplotlib or Seaborn for plotting and visualizing data.
24	Introduction to Machine Learning	Learn about machine learning concepts and libraries like scikit-learn.

25	Project: Data Analysis	Create a project using Pandas and Matplotlib to analyze a dataset.
26	Web Development with Flask	Create a simple web app using Flask framework.
27	Web Development with Django	Understand how Django works and build a small web app.
28	Asynchronous Programming	Learn about async/await and asynchronous programming in Python.
29	Debugging and Profiling	Learn debugging techniques and how to profile your Python code.
30	Final Project	Create a small project combining concepts learned over the past month.