

Day - 1

- **Introduction to Python**
 - What is Python?
 - Why Python?
 - Python installation and setup
 - Python interpreter and REPL
 - Python syntax and semantics
- **Python fundamentals**
 - Variables and data types
 - Operators and expressions
 - Conditional statements
 - Loops
 - Functions
 - Modules and packages
 - Object-oriented programming
- **Python data structures**
 - Lists
 - Tuples
 - Dictionaries
 - Sets
 - NumPy arrays
 - Pandas DataFrames
- **Python file handling**
 - Reading and writing files
 - Working with directories
 - Serialization and deserialization

Day - 2

- **Python regular expressions**
 - What are regular expressions?
 - How to use regular expressions in Python
 - Regular expression patterns and metacharacters
 - Compiling and matching regular expressions
- **Python database programming**
 - What is database programming?
 - How to connect to and interact with databases from Python
 - Popular Python database libraries
 - SQL queries and transactions
- **Python networking**
 - What is networking?
 - How to create and send HTTP requests in Python
 - How to create and manage TCP/UDP sockets in Python
 - Popular Python networking libraries

Day - 3

- **Python GUI programming**
 - What is GUI programming?
 - How to create and manage GUI windows in Python
 - Popular Python GUI libraries
 - Graphical user interfaces design
- **Python web development**
 - What is web development?
 - How to create and deploy web applications using Python
 - Popular Python web development frameworks
 - Web application security

Day - 4

- **Python machine learning**
 - What is machine learning?
 - How to implement machine learning algorithms in Python
 - Popular Python machine learning libraries
 - Supervised learning, unsupervised learning, and reinforcement learning
- **Python data science**
 - What is data science?
 - How to use Python for data science tasks
 - Popular Python data science libraries
 - Data cleaning, data preparation, and data visualization

Day - 5

- **Python for cloud computing**

- What is cloud computing?
- How to deploy Python applications to the cloud
- Popular cloud computing platforms
- Serverless computing

- **Python for DevOps**

- What is DevOps?
- How to use Python for DevOps tasks
- Continuous integration and continuous delivery (CI/CD)
- Infrastructure as code

- **Python for the future**

- Emerging trends in Python development
- How to stay ahead of the curve with Python