

Timeline	Category	Details
Week 1 - 2 (8th Jan - 20th Jan) Python Fundamentals	Data Structures	Lists - Understanding creation, manipulation and slicing of lists
		Dictionaries - Using key-value pairs effectively
		Sets - Learning set operations like union, intersection and difference
		Tuples - Immutability and usage in Python
		Derived Data Structures - Comprehensions, deque and defaultdict from collections module
	Control Flow	Conditionals - If-else statements and conditional expressions
		Loops - For and while loops, iterating through iterables
		Control Statements - Usage of break, continue and pass
	Functions and Scoping	Functions - Defining and using functions, *args and **kwargs
		Scoping - Understanding global, local and nonlocal scopes
	Exception Handling	Error Handling Basics - Try-except blocks and error categories
		Defining Custom Exceptions - Creating user-defined exception classes
		Raising Exceptions - Using the 'raise' keyword with proper messages
		Best Practices & Usage - Structuring and documenting robust error handling
	Typing and Validation	Typing Module - Type hints and annotations in Python
		Data Validation with Pydantic - Ensuring structured data with Pydantic models
	Memory Management & Interpreter	Memory Model - Understanding Python's memory allocation and garbage collection
		Interpreter - Exploring how Python code is executed
		Global Interpreter Lock (GIL) - Introduction to GIL and its impact on multithreading
		Threads - Using threading module effectively
		Event Loops - Understanding the concept of event loops
	Coroutines & Async Programming	Coroutines - Writing and using Python coroutines
		Asyncio Framework - Using asyncio for asynchronous programming
		Concurrency vs. Parallelism - Clarifying concepts of concurrency and parallelism
	Task Management	Task Types - Identifying IO-bound, CPU-bound, and mixed tasks
		Concurrency Models - Exploring threading, multiprocessing and async models