**Backend Development Using Python**

**Phase 1: Introduction to Python**

* **Duration:** 3 weeks
* **Goal:** Understand the fundamentals of Python programming.

**Week 1: Basic Python Programming**

* **Topics:**
  + Syntax and Basic Constructs (variables, data types, basic operators)
  + Control Structures (if, for, while)
  + Basic I/O operations

**Week 2: Intermediate Python**

* **Topics:**
  + Functions and modules
  + Exception handling
  + Working with files

**Week 3: Advanced Python Concepts**

* **Topics:**
  + Object-oriented programming (classes, objects, inheritance)
  + List comprehensions
  + Lambda functions, map and filter

**Phase 2: Introduction to Web Development and Databases**

* **Duration:** 2 weeks
* **Goal:** Lay the groundwork for web development and understand how databases integrate with Python.

**Week 4: Basics of Web Development**

* **Topics:**
  + HTML and CSS basics
  + Introduction to HTTP and web servers
  + Simple CRUD operations

**Week 5: Python with Databases**

* **Topics:**
  + SQL basics
  + Connecting Python to a SQL database
  + Performing CRUD operations with Python

**Phase 3: Flask Framework**

* **Duration:** 4 weeks
* **Goal:** Master the Flask framework for building simple web applications.

**Week 6 & 7: Introduction to Flask**

* **Topics:**
  + Setting up Flask environment
  + Routing and URL building
  + HTTP methods, templates, and static files

**Week 8 & 9: Advanced Flask**

* **Topics:**
  + Flask extensions (Flask-SQLAlchemy, Flask-Migrate)
  + Building RESTful APIs with Flask
  + Session management and user authentication

**Phase 4: Django Framework**

* **Duration:** 5 weeks
* **Goal:** Learn Django for building robust web applications.

**Week 10 & 11: Introduction to Django**

* **Topics:**
  + Setting up Django
  + Models, Views, and Templates
  + Admin interface and apps

**Week 12 to 14: Advanced Django**

* **Topics:**
  + Forms and generic views
  + Authentication and permissions
  + Testing and deployment of Django apps

**Phase 5: Real-World Projects and Advanced Topics**

* **Duration:** 4 weeks
* **Goal:** Apply knowledge to real-world projects and explore advanced topics.

**Week 15 to 18: Project Work and Advanced Exploration**

* **Topics:**
  + Integrating third-party APIs
  + Performance optimization
  + Asynchronous tasks with Celery
  + Security best practices

**Final Evaluation:**

* **Project Presentation:** Build a complete backend for an application using Flask or Django.
* **Code Review:** Submit project for peer and mentor review.
* **Improvement Plan:** Based on feedback, refine the project.