

Detailed Course Content

1. Introduction of the Session and Content Brief (2 Hours)

- **Course Overview:**
 - Outline of topics to be covered.
 - Setting expectations and goals.
- **Importance of Backend Development:**
 - Role in web applications.
 - Career opportunities.
- **Software Development Lifecycle:**
 - Stages from planning to deployment.

2. Python (6 to 8 Hours)

- **Syntax and Basics:**
 - Variables, data types, and operators.
- **Control Structures:**
 - Conditional statements and loops.
- **Functions and Modules:**
 - Creating and importing modules.
- **Object-Oriented Programming:**
 - Classes, objects, inheritance, and polymorphism.
- **Exception Handling:**
 - Try, except, and finally blocks.
- **Hands-On Exercises:**
 - Mini-projects and problem-solving tasks.

3. Git and GitHub - Version Control (2 Hours)

- **Introduction to Git:**
 - Installing and setting up Git.
- **Basic Commands:**
 - Clone, commit, push, pull, branch, and merge.
- **GitHub Collaboration:**
 - Forking repositories, pull requests, and code reviews.

- **Best Practices:**
 - Writing meaningful commit messages.

4. Web Technology (2 to 3 Hours)

- **Web Fundamentals:**
 - How the internet works.
 - Client-server architecture.
- **HTTP Protocol:**
 - Request and response cycle.
- **Frontend Overview:**
 - HTML, CSS, and JavaScript basics.
- **RESTful APIs:**
 - Principles and design.

5. Database Management Systems (DBMS) (3 to 4 Hours)

- **Database Concepts:**
 - Relational databases vs. NoSQL databases.
- **SQL Basics:**
 - CRUD operations (Create, Read, Update, Delete).
- **Database Design:**
 - Normalization and ER diagrams.
- **Integration with Python:**
 - Using libraries like SQLite3 or MySQL-client.

6. Django Framework (12 Hours)

- **Getting Started:**
 - Setting up a virtual environment and Django project.
- **MVC/MVT Architecture:**
 - Understanding Django's structure.
- **URL Routing and Views:**
 - Mapping URLs to views.
- **Templates:**
 - Creating dynamic HTML pages.
- **Models and ORM:**
 - Defining models and interacting with the database.

- **Forms and Validation:**
 - Handling user input securely.
- **Authentication:**
 - User login, logout, and registration.
- **Deployment Basics:**
 - Introduction to deploying Django applications.

7. ERP and CRM Project Explanation (4 Hours)

- **Project Overview:**
 - Detailed explanation of ERP and CRM systems.
- **Requirements Gathering:**
 - Defining features and functionalities.
- **Team Formation:**
 - Assigning roles based on domains.
- **Project Planning:**
 - Setting milestones and deadlines.

8. Final Project Building (12 to 15 Hours)

- **Development Phase:**
 - Coding sessions with mentor guidance.
- **Integration:**
 - Combining frontend and backend components.
- **Testing:**
 - Unit tests and debugging.
- **Review Sessions:**
 - Code reviews and optimization.
- **Final Presentation:**
 - Demonstrating the completed projects.