1. Introduction to Full Stack Development

- **What is Full Stack Development?**
  - Overview of Full Stack Development
  - Front-end vs. Back-end vs. Full Stack
- **Tools and Technologies Overview**
  - HTML, CSS, JavaScript
  - Python, Django, Flask
  - Databases: SQLite, PostgreSQL, MongoDB
  - Version Control: Git

2. Front-end Development

HTML and CSS

- **HTML Basics**
  - HTML Syntax and Structure
  - Elements, Attributes, and Tags
  - Forms and Input Handling
- **CSS Basics**
  - CSS Syntax and Selectors
  - Styling Text, Layouts, and Boxes
  - Flexbox and Grid Layouts

JavaScript

- **JavaScript Basics**
  - Variables, Data Types, and Operators
  - Control Structures: Conditional Statements and Loops
  - Functions and Scope
- **DOM Manipulation**
  - Selecting and Manipulating DOM Elements
  - Event Handling
- **ES6+ Features**
  - Arrow Functions
  - Promises and Async/Await
  - Modules

Front-end Frameworks and Libraries

- **Introduction to React**
  - Components and Props
  - State and Lifecycle
  - React Router for Single Page Applications
- **Introduction to Vue.js (Optional)**
  - Vue Instance
  - Data Binding and Events
  - Components

3. Back-end Development with Python

Python Basics (If Not Already Covered)

- **Python Syntax and Semantics**
  - Variables, Data Types, and Operators
  - Control Structures: Conditional Statements and Loops
  - Functions and Modules

Web Frameworks

- **Flask**
  - Setting Up Flask
  - Routing and View Functions
  - Templates with Jinja2
  - Forms and Validation
  - Working with Databases (SQLite)
  - Blueprints for Modular Applications
- **Django**
  - Setting Up Django
  - Django Project Structure
  - Models, Views, and Templates (MVT)
  - Forms and Model Forms
  - User Authentication and Authorization
  - Admin Interface
  - REST Framework for APIs

4. Databases

- **SQL Databases**
  - Introduction to SQL
  - CRUD Operations
  - Database Design and Normalization
  - Using PostgreSQL with Django
- **NoSQL Databases**
  - Introduction to NoSQL

- ○ Working with MongoDB

5. Version Control with Git

- **Git Basics**
  - ○ Installing and Configuring Git
  - ○ Basic Commands: init, clone, add, commit, push, pull
  - ○ Branching and Merging
- **GitHub**
  - ○ Creating and Managing Repositories
  - ○ Pull Requests and Code Reviews
  - ○ Collaborating on Projects

6. Full Stack Integration

- **Connecting Front-end with Back-end**
  - ○ AJAX and Fetch API
  - ○ RESTful APIs with Flask and Django
  - ○ Handling CORS
- **Authentication**
  - ○ Implementing JWT (JSON Web Tokens)
  - ○ OAuth Authentication

7. Deployment

- **Deploying Flask Applications**
  - ○ Deploying on Heroku
  - ○ Deploying on AWS
- **Deploying Django Applications**
  - ○ Deploying on Heroku
  - ○ Deploying on AWS

8. Advanced Topics

- **Testing**
  - ○ Unit Testing with pytest
  - ○ Integration Testing
- **Web Sockets**
  - ○ Introduction to Web Sockets
  - ○ Real-time Communication with Flask-SocketIO and Django Channels
- **Task Queues**
  - ○ Background Tasks with Celery
  - ○ Scheduling Tasks

9. Project Work

- **Building Real-World Projects**
  - ○ Planning and Designing the Project

- Implementing Features
- Testing and Debugging
- Deployment and Maintenance