SYLLABUS FOR FULL STACK DEVELOPMENT

Module 1: Introduction to Full Stack Development

- Overview of frontend, backend, and databases

- Understanding client-server architecture

- Tools required: VS Code, Browser DevTools, MySQL, JDK, Python, etc.

Module 2: HTML – Structure of Web Pages

- HTML tags, elements, and attributes

- Forms, input fields, buttons, and validation basics

- Tables, lists, links, media (audio/video), semantic HTML

Module 3: CSS – Styling Web Pages

- CSS syntax, selectors, and types (inline, internal, external)

- Box model, positioning, float, display

- Flexbox, Grid, responsive design with media queries

Module 4: JavaScript – Interactivity & Logic

- Variables, data types, operators

- Functions, conditionals, loops

- DOM manipulation and event handling

- Form validation and basic dynamic effects

Module 5: Python for Backend Development

- Python syntax, functions, data types

- File handling and basic OOP

- Introduction to Flask: routing, request handling

- Template rendering with Jinja2

Module 6: Java for Backend Development

- Java basics: syntax, OOP (classes, objects, methods)

- Servlet and JSP fundamentals

- Handling form data using Servlets

- Setting up web server and basic web app structure

Module 7: SQL & Database Integration

- SQL basics: CREATE, INSERT, SELECT, UPDATE, DELETE

- Table relationships: Primary key, foreign key

- JOIN operations and WHERE clauses

- Connecting SQL with Python (using Flask) or Java (JDBC)

Module 8: Full Stack Integration

- Connecting frontend with backend (HTML forms + Python/Java)

- Passing data between client and server

- Full CRUD operations: Create, Read, Update, Delete

- Session handling and basic authentication flow

Module 9: Mini Project Development

- Planning a small project (e.g., blog, task tracker, registration form)

- Building frontend, backend, and database layers

- Testing, debugging, and refining features

Module 10: GitHub & Deployment Basics

- Git fundamentals: init, commit, push

- Hosting frontend on GitHub Pages

- Intro to deploying backend on Render, Replit, or Heroku

- Best practices for code submission and project presentation