Full Stack Web Development Syllabus

Module 1: HTML, CSS, and Bootstrap

Objective: Build static, responsive, and visually appealing web pages using HTML, CSS, and Bootstrap.

Week	Topic	Subtopics / Practical
1	Introduction to Client-Server Architecture	Components, Models & Benefits, Static vs Dynamic Websites, Web Portal Overview
2	Web Servers & IDE Setup	Prominent Web Servers, WAMP/XAMPP Installation, Eclipse IDE Setup
3	HTML Basics	HTML Role, First HTML Code, Boilerplate, HTML5 Syntax, HTML Tree
4	HTML Elements	Headings, Paragraphs, Lists, Links, Images, Tables, Block vs Inline Elements, Semantic Tags (nav, article, section, header, main, footer, aside, figure, figcaption)
5	CSS Basics	Adding CSS, Selectors (Basic + Advanced), Colors (Hex, RGB, RGBA, HSL), Box Model, CSS Units
6	CSS Layouts & Responsive Design	Display, Positioning, Flexbox, Media Queries, Animations, Transitions, Transformations
7	Bootstrap Framework	Introduction to Bootstrap, Grid System, Typography, Forms, Buttons, Navigation, Cards, Modals, Responsive Components

Practical Exercises:

- Create a static portfolio page with semantic HTML.
- Apply responsive layouts using Flexbox and Media Queries.
- Implement a Bootstrap-based multi-section landing page.

Module 2: JavaScript, jQuery, and React

Objective: Make web pages dynamic and interactive using JavaScript, jQuery, and React, including modern frontend concepts.

Week	Topic	Subtopics / Practical
1	JavaScript Fundamentals	JS Engine, Compiled vs Interpreted vs JIT, Dynamic vs Static Typing, Math Objects, Random Numbers
2	Control Flow & Operators	if-else, Ternary, Logical & Bitwise Operators, Short-Circuiting
3	Arrays & Objects	Array Methods, Loops (for, for-of, while, for-in), JS Objects, Prototypes & Inheritance
4	Functions	Function Expressions, Arrow Functions, First-Class Functions, Constructor Functions, ES6 Classes (getter, setter, static methods)
5	Asynchronous JS	Event Loop, Callback Queue, Web APIs, Callback Hell, Promises
6	DOM Manipulation	DOM Tree, Element Selection, Event Handling (Bubbling, Capturing, Delegation)
7	jQuery Basics	DOM Manipulation, Event Handling, jQuery API usage
8	Introduction to React	JSX, Babel, Virtual DOM, Rendering JSX, Functional & Class Components, Lifecycle Overview
9	React State & Props	Passing Props, State Management (useState, this.state), Dynamic Rendering
10	React Routing	BrowserRouter, Route, Routes, Nested Routes, Route Parameters, useNavigate

Practical Exercises:

- Create a JS-based interactive to-do list using DOM manipulation.
- Implement a small jQuery form validation project.
- Build a React app with multiple components, state, props, and routing.