

Month 1: HTML, CSS, and JavaScript Fundamentals

Week 1: HTML

- **Day 1-2: Introduction to HTML, structure of an HTML document**
- **Day 3-4: HTML elements (headings, paragraphs, lists, links, images)**
- **Day 5-6: Forms and form elements (input, textarea, buttons, etc.)**
- **Day 7: Semantic HTML (header, footer, article, section)**

Week 2: CSS

- **Day 8-9: Introduction to CSS, syntax, and selectors**
- **Day 10-11: Box model, margins, padding, borders**
- **Day 12-13: Positioning (static, relative, absolute, fixed)**
- **Day 14: Flexbox and Grid layout**

Week 3: Advanced CSS

- **Day 15-16: Responsive design and media queries**
- **Day 17-18: CSS frameworks (Bootstrap)**
- **Day 19-20: CSS animations and transitions**
- **Day 21: CSS preprocessors (Sass)**

Week 4: JavaScript Basics

- **Day 22-23: Introduction to JavaScript, syntax, and variables**
- **Day 24-25: Data types, operators, and expressions**
- **Day 26-27: Functions and scope**

-
- **Day 28: Control structures (if, else, switch, loops)**

Week 5: Advanced JavaScript

- **Day 29-30: Arrays and objects**
- **Day 31-32: DOM manipulation and events**
- **Day 33-34: ES6+ features (let, const, arrow functions, template literals)**
- **Day 35: Asynchronous JavaScript (callbacks, promises, async/await)**

Month 2: Advanced JavaScript and React.js

Week 6: Advanced JavaScript Concepts

- **Day 36-37: Closures and modules**
- **Day 38-39: Prototypes and inheritance**
- **Day 40-41: Error handling and debugging**
- **Day 42: Working with APIs (fetch, axios)**

Week 7: Introduction to React.js

- **Day 43-44: Introduction to React, setting up the environment**
- **Day 45-46: Components and JSX**
- **Day 47-48: Props and state**
- **Day 49: Event handling in React**

Week 8: React Basics

- **Day 50-51: Lifecycle methods and hooks (useState, useEffect)**
- **Day 52-53: Forms and controlled components**
- **Day 54-55: Routing with React Router**
- **Day 56: Conditional rendering**

.

Week 9: Advanced React

- **Day 57-58: Context API**
- **Day 59-60: Higher-order components and render props**
- **Day 61-62: Error boundaries**
- **Day 63: Code splitting and lazy loading**

Month 3: Node.js and Express.js

Week 10: Introduction to Node.js

- **Day 64-65: Introduction to Node.js, setup, and basics**
- **Day 66-67: Modules and npm**
- **Day 68-69: File system and path modules**
- **Day 70: Building a basic server**

Week 11: Node.js Core Modules

- **Day 71-72: Working with the HTTP module**
- **Day 73-74: Streams and buffers**
- **Day 75-76: Events and EventEmitter**
- **Day 77: Introduction to Express.js**

Week 12: Express.js Basics

- **Day 78-79: Setting up an Express server**
- **Day 80-81: Routing in Express**
- **Day 82-83: Middleware functions**
- **Day 84: Handling requests and responses**

Week 13: Advanced Express.js

- **Day 85-86: Working with templates (EJS, Pug)**
- **Day 87-88: Authentication and authorization**

-
- **Day 89-90: Error handling**
- **Day 91: Building RESTful APIs**

Month 4: MongoDB and Full Stack Integration

Week 14: Introduction to MongoDB

- **Day 92-93: Introduction to NoSQL databases and MongoDB**
- **Day 94-95: Setting up MongoDB and MongoDB Atlas**
- **Day 96-97: CRUD operations**
- **Day 98: MongoDB queries and indexing**

Week 15: Mongoose

- **Day 99-100: Introduction to Mongoose**
- **Day 101-102: Defining schemas and models**
- **Day 103-104: Data validation and middleware**
- **Day 105: Advanced queries and population**

Week 16: Integrating MongoDB with Express

- **Day 106-107: Connecting Express with MongoDB using Mongoose**
- **Day 108-109: Building CRUD APIs with Express and MongoDB**
- **Day 110-111: Authentication with JWT**
- **Day 112: Role-based access control**

Week 17: Full Stack Integration

- **Day 113-114: Connecting React with Express APIs**
- **Day 115-116: State management in React (Context API, Redux)**
- **Day 117-118: Handling forms and authentication in React**

-
- **Day 119: Deploying the MERN stack application**

Month 5: Projects and Advanced Topics

Week 18: Building a Full Stack Project

- **Day 120-121: Project planning and setup**
- **Day 122-123: Building the backend (Node.js, Express, MongoDB)**
- **Day 124-125: Building the frontend (React)**
- **Day 126: Integrating frontend and backend**

Week 19: Advanced Topics

- **Day 127-128: WebSockets and real-time communication**
- **Day 129-130: Server-side rendering with Next.js**
- **Day 131-132: Testing (unit tests, integration tests)**
- **Day 133: Performance optimization and best practices**

Week 20: Final Project

- **Day 134-135: Project planning and architecture**
- **Day 136-137: Backend development**
- **Day 138-139: Frontend development**
- **Day 140: Integration and deployment**

Week 21: Revision and Assessment

- **Day 141-142: Review key concepts and topics**
- **Day 143-144: Practice problems and coding challenges**
- **Day 145-146: Final assessment and project presentations**
- **Day 147: Wrap-up and feedback**

•
This syllabus provides a comprehensive roadmap to teaching the MERN stack over 5 months, ensuring students gain a solid understanding of both the frontend and backend aspects of web development. Adjustments can be made based on the pace and needs of the students.