

# Pivot Technology, Full Stack Web Development

## Instructor Information

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## Course Information

- **Course Title:** AI-Accelerated Full Stack Web Development
- **Course Description:** This beginner course teaches students to build and deploy full stack web applications using HTML, CSS, JavaScript, Node.js, and Express, while learning problem-solving, Git, and responsible AI-assisted development.
- **Virtual (Online) Meeting Days and Times:** Monday, Tuesday, Thursdays (6pm--9pm CST)
- **Video Recordings:** All recordings will be posted in slack Friday mornings

## Course Overview and Goals

This course follows the Foundations and JavaScript (Node & Express). Students begin with core web technologies and gradually progress to building database-driven, full stack applications. AI tools are integrated throughout the course to support debugging, research, and code understanding while reinforcing independent thinking and coding fundamentals.

### Upon Completion of this Course, students will be able to:

- Build responsive websites using HTML, CSS (Flexbox), and JavaScript
- Use Git and GitHub to manage and share code projects
- Develop back-end servers and APIs using Node.js and Express
- Connect databases to web applications and perform CRUD operations
- Implement user authentication and basic security practices
- Deploy a full stack application to a live hosting platform
- Use AI tools responsibly to support learning, debugging, and code improvement

# Course Requirements

## Class Participation

Students are expected to engage in coding exercises, debugging sessions, and AI-assisted learning activities. Collaboration is encouraged, but all submitted work must reflect each student's understanding.

## Course Schedule

### Topics and Assignments

Week	Topic	Overview
<b>Week 1</b>	Course Foundations	<ul style="list-style-type: none"><li>- How the course works</li><li>- How to use AI as a coding assistant</li><li>- Intro to Git &amp; version control</li></ul>
<b>Week 2</b>	HTML & CSS Basics	<ul style="list-style-type: none"><li>- Intro</li><li>- Elements &amp; Tags</li><li>- Boilerplate</li><li>- Text, Lists, Links, Images</li><li>- Box Model</li><li>- Flexbox, Size, Alignment</li><li>- <b>Project:</b> Recipes</li><li>- <b>Project:</b> Landing Page</li></ul>
<b>Week 3</b>	JavaScript Fundamentals I	<ul style="list-style-type: none"><li>- Variables</li><li>- Data Types</li><li>- Functions</li><li>- Problem Solving and Errors</li><li>- <b>Project:</b> Simple Game pt 1</li></ul>
<b>Week 4</b>	JavaScript Fundamentals II	<ul style="list-style-type: none"><li>- Clean Code</li><li>- Loops and Arrays</li><li>- <b>Project:</b> Simple Game pt2</li></ul>
<b>Week 5</b>	JavaScript Objects	<ul style="list-style-type: none"><li>- More JS practice</li><li>- Objects</li><li>- <b>Project:</b> Calculator</li></ul>

<b>Week 6</b>	Intermediate HTML & CSS	<ul style="list-style-type: none"> <li>- Emmet and workflow tools</li> <li>- SVG basics</li> <li>- Tables</li> <li>- Default browser styles</li> <li>- CSS units and text styling</li> <li>- Advanced CSS properties &amp; selectors</li> <li>- Positioning elements</li> </ul>
<b>Week 7</b>	Advanced CSS + Forms	<ul style="list-style-type: none"> <li>- CSS functions &amp; custom properties</li> <li>- Browser compatibility</li> <li>- CSS frameworks &amp; preprocessors (conceptual)</li> <li>- Form structure and inputs</li> <li>- Form validation basics</li> <li>- <b>Project:</b> Sign-up Form</li> </ul>
<b>Week 8</b>	Grid + Layout Systems	<ul style="list-style-type: none"> <li>- CSS Grid fundamentals</li> <li>- Creating and positioning grid layouts</li> <li>- Advanced grid properties</li> <li>- Combining Grid and Flexbox</li> <li>- <b>Project:</b> Admin Dashboard</li> </ul>
<b>Week 9</b>	Organizing JavaScript Code	<ul style="list-style-type: none"> <li>- Code organization principles</li> <li>- Objects &amp; constructors</li> <li>- Factory functions &amp; module pattern</li> <li>- ES6 modules</li> <li>- npm basics</li> <li>- <b>Project:</b> Library</li> </ul>
<b>Week 10</b>	Webpack + OOP	<ul style="list-style-type: none"> <li>- Intro to Webpack</li> <li>- Managing assets</li> <li>- JSON basics</li> <li>- OOP principles</li> <li>- Classes</li> <li>- <b>Project:</b> Restaurant Page</li> <li>- <b>Project:</b> Todo List</li> </ul>
<b>Week 11</b>	JavaScript in the Real World + Async JS	<ul style="list-style-type: none"> <li>- Linting</li> <li>- Advanced form validation with JS</li> <li>- ECMAScript overview</li> <li>- Asynchronous code concepts</li> <li>- APIs and fetch</li> <li>- Async/await</li> </ul>

		- <b>Project:</b> Weather App
<b>Week 12</b>	Computer Science Foundations	-
<b>Week 13</b>	Data Structures Continued	-
<b>Week 14</b>	Intermediate Git + Testing	-
<b>Week 15</b>	Animation + Accessibility + Responsive Design	-
<b>Week 16</b>	React Foundations	-
<b>Week 17</b>	React State, Effects, and Routing	-
<b>Week 18</b>	Advanced React + Testing	-
<b>Week 19-20</b>	Capstone Project	-

## Course Materials

### Materials

- Computer capable of running a modern code editor and web browser
- VS Code (or similar IDE)
- Git and GitHub account
- Node.js and npm installed
- Reliable internet access
- Slack
- AI assistant tool (such as ChatGPT or similar) for guided learning support

## Course Policies

### Communication

- Slack is the best way to reach me, but make sure its a DM or else I wont be notified

**Attendance and Tardiness**

- Students are expected to attend every class and arrive on time.
- Cameras must remain on during class; students with cameras off will be marked absent.
- If you know you will be absent, you must notify Maricrus in advance.

**Late Assignments**

- Assignments are expected to be completed on time.
- Late work may not be reviewed or receive feedback.
- Staying on schedule is important to keep up with the course pace.

**Academic Honesty / Plagiarism**

- AI tools are allowed to support learning and understanding
- Submitting work you do not understand wastes your learning time
- The goal is skill development, not grades, so focus on learning rather than shortcuts