Pivot Technology,
Full Stack Web Development

Instructor Information

- Leo Rodriguez
- lrodriguez@pivottechschool.com

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
Week 1	Course Foundations	- How the course works - How to use AI as a coding assistant - Intro to Git & version control
Week 2	HTML & CSS Basics	- Intro - Elements & Tags - Boilerplate - Text, Lists, Links, Images - Box Model - Flexbox, Size, Alignment - **Project:** Recipes - **Project:** Landing Page
Week 3	JavaScript Fundamentals I	- Variables - Data Types - Functions - Problem Solving and Errors - **Project:** Simple Game pt 1
Week 4	JavaScript Fundamentals II	- Clean Code - Loops and Arrays - **Project:** Simple Game pt2
Week 5	JavaScript Objects	- More JS practice - Objects - **Project:** Calculator

Week 6	Intermediate HTML & CSS	- Emmet and workflow tools - SVG basics - Tables - Default browser styles - CSS units and text styling - Advanced CSS properties & selectors - Positioning elements
Week 7	Advanced CSS + Forms	- CSS functions & custom properties - Browser compatibility - CSS frameworks & preprocessors (conceptual) - Form structure and inputs - Form validation basics - **Project:** Sign-up Form
Week 8	Grid + Layout Systems	- CSS Grid fundamentals - Creating and positioning grid layouts - Advanced grid properties - Combining Grid and Flexbox - **Project:** Admin Dashboard
Week 9	Organizing JavaScript Code	-
Week 10	Webpack + OOP	-
Week 11	JavaScript in the Real World + Async JS	-
Week 12	Computer Science Foundations	-
Week 13	Data Structures Continued	-
Week 14	Intermediate Git + Testing	-
Week 15	Animation + Accessibility + Responsive Design	-
Week 16	React Foundations	-

Week 17	React State, Effects, and Routing	-
Week 18	Advanced React + Testing	-
Week 19-20	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