

# Georgia Tech | Coding Boot Camp

## Course Description

The web development industry continues to thrive with plenty of dynamic, informative and entertaining sites sprouting up every day. Positions in this field keep emerging—the Bureau of Labor Statistics expects web development job growth to far outpace the rate of the average profession. This surge should provide skilled programmers a bounty of diverse and rewarding career opportunities. We encourage all students eager to join this growing trade to enroll in our Coding Boot Camp series.

The Coding Boot Camp is a 24-week program designed to prime students for careers in the web development industry. The boot camp also provides a career service specialist who will offer job support throughout and beyond the length of these courses.

During this program, our students will build sites with responsive layouts and learn how to program interactive games, forms and quizzes. Some developers focus on writing code for either the browser or the server. Yet the full-stack developer stands out amongst the competition with mastery of both front-end and back-end programming. These coders can handle complex tasks like serving dynamic content to their users while still keeping a firm grip on the appearance of their web apps.

Web developers open up plenty of job opportunities when they learn how to build full-stack web apps. But to keep their careers steady, they must always teach themselves the latest technologies of the field—it's the only way to stay relevant in this industry.

*Note: Students who pass all four Coding Boot Camp courses will receive a Georgia Tech certificate in Full Stack Flex Web Development.*

## Schedule Focus

Weeks 1-6 will focus on Front-end Fundamentals where we will teach all the HTML, CSS and JavaScript they'll need to start building basic web apps. Students will then broaden their newfound front-end skills by using jQuery AJAX to update sections of their websites with remote API data.

During weeks 7-12, we'll explore data management with local storage, MySQL and the Firebase API. We'll also introduce Node.js, a JavaScript framework that executes code outside the browser. Students will use Node to build programs that read external data, write new files and accept command-line input. Beyond that, we'll further expand our students' JavaScript knowhow with lessons centered around object-oriented programming and callback functions. This section also includes a two-week group project. Each team will develop a web app from scratch and showcase it during a presentation day. This will be a prime chance to demonstrate the skills they'll have acquired during the boot camp.

Weeks 13-18 will focus on discovering all of the necessary steps for linking the front and back ends during weeks 13-18 of the program.

We'll start with an introduction to Express, a powerful Node.js framework that makes it simple to set up API servers and HTML routes. Students will also learn how tools like Handlebars and Sequelize can speed up the development of elaborate full-stack web apps. We'll end the course with a walkthrough of MongoDB, an alternative database management system with a growing presence in the tech industry.

Students will work in groups developing a web application of their choice. This time, we expect each team to create a full-stack app that pulls in content from a remote database. They will spend the bulk of weeks 19-24 building their most powerful web applications yet for their final group projects. Each team must develop an app with real-world potential using one of the many new frameworks we'll introduce—ReactJS, AngularJS, Meteor, Django and Laravel. We'll also cover mobile app development with React Native, as well as Computer Science topics like algorithms and data structures.

## Course Agenda

Week 1	HTML & CSS — Boot Camp Intro + Rundown of HTML and Console
	HTML & CSS — HTML/CSS Basics + Version Control with Git
	HTML & CSS — CSS Layout and Positioning
Week 2	Heroku & Bootstrap — Git Pull Requests + Heroku Deployment
	Heroku & Bootstrap — More Styling Techniques with CSS + Intro to Bootstrap
	Heroku & Bootstrap — Smooth, Responsive Layouts with Bootstrap
Week 3	Intro to JavaScript — Prompts, Variables, Arrays and Conditionals
	Intro to JavaScript — Understanding the For-Loop
	Intro to JavaScript — Declaring Functions + Handling Objects
Week 4	JavaScript & jQuery — Manipulating the DOM
	JavaScript & jQuery — More DOM Manipulation + Lexical Scope
	JavaScript & jQuery — Collaborative App Development with jQuery
Week 5	JS Recap & Timing Events — Review Day for Past Exercises
	JS Recap & Timing Events — Exploring Timeouts and Intervals
	Career Day — Interview Prep
Week 6	APIs & AJAX — Parsing through JSON Data
	APIs & AJAX — Presenting Data with jQuery AJAX
	APIs & AJAX — Building Polished Front-End Apps with APIs and AJAX

### AGENDA: (Weeks 7-12)

	Topics
Week 7	Intro to Data Management — Client-Side Storage
	Intro to Data Management — Remote Data and Firebase
	Intro to Data Management — Building Apps with Firebase
Week 8	Collaborative Front-End Development — Project Day #1
	Collaborative Front-End Development — Project Day #2
	Collaborative Front-End Development — Project Day #3
Week 9	Career Prep — Interview Questions and Project Day #4
	Career Prep — Interview Questions and Project Day #5

	Presentation Day #1 — Groups Demonstrate Their Projects
Week 10	Building Back Ends with Node — Node.js and Command Line Arguments
	Building Back Ends with Node — Reading and Writing Files with Node's fs Package
	Building Back Ends with Node — Package Management + NPM
Week 11	OOP and Callbacks — JavaScript Constructors
	OOP and Callbacks — Constructors with User Input + Connector Functions
	OOP and Callbacks — Writing Callback Functions
Week 12	Intro to MySQL — Setting Up a MySQL Database
	Intro to MySQL — Connecting Node with MySQL
	Intro to MySQL — Schemas, Seeds and CSVs

<b>AGENDA: (Weeks 13-18)</b>	
	Topics
Week 13	Intro to Express — Serving Data to the Browser
	Intro to Express — HTML and API Routing with Express
	Intro to Express — Collaborative Full-Stack Development with Express
Week 14	Handlebars & Express — Intro to the Handlebars Framework
	Handlebars & Express — GET, POST, PUT and DELETE
	Handlebars & Express — The Power of the ORM
Week 15	MySQL & Sequelize — Exploring the Sequelize ORM
	MYSQL & Sequelize — Model Associations with Sequelize
	MYSQL & Sequelize — Sequelize, Migrations and Hashing
Week 16	App Testing — Unit Testing with Mocha and Chai + Project Day #1
	App Testing — User Stories + Functional Testing with Nightmare.js + Project Day #2
	App Testing — The Discipline of Test Driven Development + Project Day #3
Week 17	SEO — Understanding Basic Search Engine Optimization + Project Day #4
	SEO — Dealing with Sites Not Optimized for Search + Project Day #5
	Presentation Day #2 — Groups Demonstrate Their Projects
Week 18	MongoDB — Setting up MongoDB
	MongoDB — Hooking MongoDB to Node
	MongoDB — The Mongoose ORM

<b>AGENDA: (Weeks 19-24)</b>	
	Topics
Week 19	ReactJS — Intro to the React Framework
	ReactJS — States, Props and Lifecycle Methods
	ReactJS — Linking React with Node, Express and MongoDB
Week 20	Frameworks at a Glance — Laravel
	Frameworks at a Glance — Meteor
	Frameworks at a Glance — Django
Week 21	Mobile Apps — Intro to React Native
	Mobile Apps — Using React Native to Build Dynamic Apps
	Final Projects — Brainstorming Session
Week 22	Computer Science Basics — Understanding Algorithms
	Computer Science Basics — Sorting Algorithms + Lodash
	Computer Science Basics — Data Structures + Project Work
Week 23	JS Design Patterns — Avoiding Anti-Patterns + Writing Well-Designed Code
	Collaborative Development — Project Work Session
	Collaborative Development — Project Work Session
Week 24	Collaborative Development — Final Touches on App
	Collaborative Development — Final Touches on App
	Final Presentations — Groups Demonstrate Their Final Apps