UCDAVIS
Continuing and Professional Education

THE CODING BOOT CAMP

Online Curriculum Overview

The digital revolution has transformed virtually every area of human activity—and you can become part of it as a web development professional. **UC Davis Continuing and Professional Education Coding Boot Camp** is a deeply engaging online Full Stack Flex course that gives you the knowledge and skills to build dynamic end-to-end web applications and become a full stack web developer in 24 weeks.

Designed to fit into the lives of busy adults and working professionals, the program pairs convenient online lessons and application practice that you can complete 24/7 with live virtual classes and support.

The program is rigorous, fast-paced, and covers both the theory and application of web development. As you gain proficiency, you'll use what you learn on real, hands-on projects. Plus, you'll develop an impressive portfolio and the confidence to succeed as a web development professional.

Is This Program Right For YOU?

Are you creative, curious, and looking to reinvent yourself professionally? If so—or if any of the following describes your situation—enrolling in our coding boot camp could be a smart career move:

- You're considering a career change but not sure how to take the first step.
- You're happy in your current field, but want to move to another company—or stay put but shift from a non-technical into a technical position.
- You want to engage more deeply with your current job—or boost your earnings and broaden your experience with freelance work.
- You have an entrepreneurial idea and need to acquire the skills to go "all in" on it and launch your business.
- You're a full-time student but hungry to learn more and expand your skill set.
- You need the flexibility of at-home study.

The SKILLS You'll Gain

You will complete the program with full stack web development skills*, including:

Computer Science applied to JavaScript

- Data Structures
- Algorithms
- Design Patterns

Browser Based Technologies

- HTML
- CSS
- JavaScript
- jQuery
- Responsive Design
- Bootstrap
- JSON
- AJAX
- Handlebars
- Cookies, Local Storage
- React.js

Deployment

- Heroku
- Git
- GitHub Pages

Databases

- MySQL
- MongoDB

Node.js (Server Side Development)

- Express
- Security and Session Storage
- User Authentication
- MERN Stack (MongoDB, Express.js, React.js, Node.js)

Quality Assurance

- Writing Tests

Agile Development

- User Stories and Acceptance Criteria
- Kanban
- Daily Scrum
- Iterative Development
- Minimum Viable Product

Supplemental Self-Study Topics

In addition to learning these critical skills, you will have access to online learning that builds foundational knowledge on in-demand technologies:

- Python
- Java
- Amazon Web Services
- C#

*The materials covered in this course are subject to change due to market demand.

Building On The Basics

In web development as with many skills, you can't succeed without a solid grounding in the fundamentals. That's why our curriculum begins with a deep dive into the basics of coding and data structure. That said, we recognize that the surest way to impress prospective employers and get job offers is to demonstrate your skills on real-world projects. You'll have ample opportunity for hands-on experience through outside projects, which will make up your professional portfolio.

REAL Projects, Real Jobs

Those who complete the program will be qualified for many different roles, including:

- Full Stack Developer
- Front End Web Developer
- Back End Web Developer
- Web Producer
- Technical Project Manager
- QA and Test Engineer
- Software Developer
- Application Development Manager
- Computer Programmer
- Web Designer
- Email Developer

What You Will LEARN

By the time you complete the program, you can expect to be able to:

- Build front end websites from scratch, as well as with ready-made frameworks, to understand primitive ways to build on the web and how to leverage pre-existing frameworks to build with efficiency.
- Create full stack single-page web applications with RESTful API routes and AJAX methods to demonstrate how front end applications communicate with back end applications and databases.
- Implement different types of databases—structured, unstructured, and real-time—to convert static websites into dynamic websites that persist data.
- Communicate and demonstrate foundational knowledge and required skills during technical interviews.
- Integrate the accepted and standard basics of social coding—including source control, issue tracking, and functional feedback—as part of a development community, while building an application.
- Demonstrate strong software development teamwork and project management skills as a collaborator and independent contributor through the development cycle of a complex project.

Course Structure

Over the course of 24 weeks, you'll work through engaging online lessons, attend exciting live online classes, and take part in a variety of individual and team exercises, working independently and in virtual break-out groups. Homework assignments provide an opportunity to apply what you've learned and build on it. The goal is to give you a comprehensive learning experience and true understanding of a "day in the life" of a full stack developer.

DISCUSSION

Instructor-led discussions cover the background, history, and use of a new technology or concept.

LAB WORK

You'll put classroom teaching into practice individually and with a team in virtual break-out rooms to work on timed, in-class exercises and projects.

PORTFOLIO PROJECTS

Your portfolio signals to employers that you are ready for primetime. You'll build a substantial portfolio of projects that demonstrate your abilities across a wide variety of technologies.

Dynamic Online Experience

The Online Coding Boot Camp is a part-time program taking place over the course of 24 weeks. You will learn applicable skills and technologies, with extra emphasis on project-based instruction, with the goal of creating a compelling portfolio of relevant project work by the end of the program.

The total program commitment time is 25-30 hours per week, including online sessions, homework, group projects, and self-study. You are supported in this journey by your dedicated cohort of staff, which includes Instructors, Teaching Assistants, Tutors, Student Success Teams, and Career Coaches. Your peers will also continually help each other through the program.

We're Here To HELP

As you move up the learning curve, you're likely to have questions around some of the concepts covered in the lessons. We're here to help—through our instructor-led live virtual classes, regular TA office hours, and dedicated Slack community, where you can get assistance from instructors, support staff, and your fellow peers. All project work is done via GitHub, so you are able to build your career-oriented portfolio as you work. In addition to learning to code, you will have access to career support that will help you prepare for technical roles after completing the program. Career support includes:

Career Content and Practice Sessions

Database of Customizable Tools and Templates

- Multiple Technical Resume Templates
- GitHub Best Practices
- Guidelines to Building a Portfolio
- Creating an Elevator Pitch
- Developing a Bio

Online Career Events with Industry Professionals

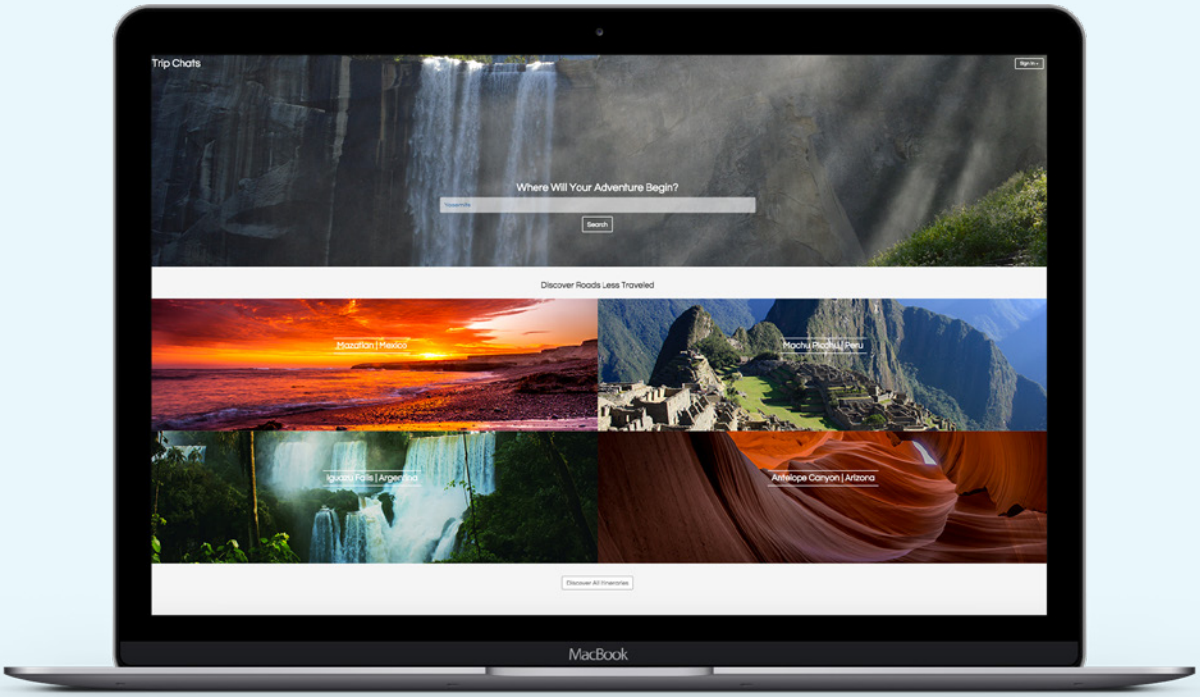
Soft Skills Training

One-on-One Career Coaching

BUILDING

Your Portfolio

It's a fact: companies care about what you can do, not what you say you can do. For that reason, our curriculum teaches you how to put what you've learned to work on actual portfolio projects. There are three multi-week group projects that challenge you to apply what you have learned. Projects range from simple HTML and CSS code samples to sophisticated Single Page Applications with back end databases.



Building Your Portfolio

Self-Selected Front End Project

This is a group project that forces you to think outside your comfort zone. You and your group will decide what to build and then build it—a front end application that interacts with real-world services like Google Maps, Twitter, or the OMDb API.

Skills Needed

- HTML5/CSS
- JavaScript/jQuery
- API Consumption
- Bootstrap
- Git

Objectives

- Work in a group to build a project together
- Interact with third-party services
- Think in terms of mobile responsive design

Full Stack Project

In your first full stack web application, you'll create an intuitive front end, robust back end and scalable database.

Skills Needed

- HTML5/CSS
- JavaScript/jQuery
- Authentication
- Unit Testing
- ORM
- Heroku
- MySQL
- Node.js
- Express.js

Objectives

- Track issue progress with industry standard tools
- Communicate with team members asynchronously
- Design a MySQL Database Schema
- Create a full stack application
- Write project documentation
- Understand database relationships

Final Project

You will work independently or break out into groups to collaborate on a final project. You will come up with your own project and actually build it. The skills you learn during this project will truly help you to prepare for your first interviews and jobs!

Skills Needed

- Everything you've learned!

Objectives

- Define project scope
- Quality assurance testing
- Responsive design
- Deployment
- Code Organization

Course CURRICULUM By Unit

Unit	Description	What You'll Learn
Unit 1: Foundations-Front End Fundamentals (Weeks 1-8)	You will learn the fundamental concepts of web development: HTML, CSS, and JavaScript. You will also work deeply with APIs and DOM manipulation to create visually compelling and data-rich applications. In this phase, you will initiate your portfolio and deploy your work in GitHub.	• Create a mobile-friendly website for a small business. • Develop a robot gladiator game complete with levels, lives, and health. • Create a personal task tracker to keep you productive.
Unit 2: Technical-Full Stack Development (Weeks 9-16)	You will learn the skills necessary to engineer a full stack web application. You will dive into the MVC paradigm, MySQL, Sequelize ORM, and the construction of Node/Express servers. By this point, you are able to build advanced full stack applications.	• Create a budget tracker for your monthly expenses. • Develop an employee directory for a rapidly expanding startup. • Create a tool that automatically generates PDFs.
Unit 3: Performance-Advanced Front End + Database Frameworks (Weeks 17-24)	You will acquire skills to optimize your web applications for speed and efficiency as well as prepare yourself for the transition to a career in web development. You will implement cutting-edge frameworks like React, NoSQL, and MERN in your final project.	• Improve the performance on a legacy application for an outdoor food festival app.
Optional Phase: Online Continuation Courses (Supplemental Learning)	Continue building your professional portfolio of projects after you complete the boot camp. Build your fluency in additional technologies and further increase your competitiveness in the market with hands-on learning that's supported by a global network of alumni.	Take crash courses in: • Python • Java • Amazon Web Services • C#