The digital revolution has transformed virtually every area of human activity—and you can become part of it as a web development professional. **Vanderbilt University Coding Boot Camp** is a live, online Full Stack Flex course with a part-time schedule 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 features convenient online classes in real-time, with evening and weekend sessions. We pair live classes with in-depth, curated resources to reinforce knowledge and supplement those days you can’t make the live session.

The program is rigorous and 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.
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’re looking to start your career and are looking to do so in a technical field.

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 will graduate with full-stack web development skills*, including:

**Computer Science applied to JavaScript**
- Data Structures
- Algorithms

**Browser Based Technologies**
- HTML
- CSS
- JavaScript
- jQuery
- Responsive Design
- Bootstrap
- Handlebars
- Cookies, Local Storage
- React.js

**Java**

**Databases**
- MySQL
- MongoDB

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

**Deployment**
- Heroku
- Git
- Github Pages

**Quality Assurance**
- Writing Tests

*The material covered in this course is 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.
Our graduates will be qualified for many different roles, including:

- Full Stack Developer
- Software Developer
- Front End Web Developer
- Application Development Manager
- Back End Web Developer
- Computer Programmer
- Web Producer
- Web Designer
- Technical Project Manager
- Email Developer
- QA and Test Engineer
<table>
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<tr>
<th>What You Will Learn</th>
<th>By the time you graduate, you can expect to be able to:</th>
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<tbody>
<tr>
<td>Apply “social coding” accepted and best practices (including source control, issue tracking, functional feedback, etc.)</td>
<td>Work independently, or in a group, on complex projects throughout the entire development lifecycle</td>
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<td>Build a front end website either from scratch or by utilizing a front end framework (such as Bootstrap)</td>
<td>Understand the basics of troubleshooting and enhancing legacy code</td>
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<td>Deploy static and dynamic websites to the cloud</td>
<td>Communicate the basics of serving a web page and how the browser renders code</td>
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<td>Implement complex logical conditions to meet an objective</td>
<td>Create RESTful APIs utilizing JSON as a data format</td>
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<tr>
<td>Write SQL commands to perform Create, Read, Update and Delete commands</td>
<td>Consume RESTful APIs properly utilizing REST verbs</td>
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<tr>
<td>Create a full stack Single Page Application with AJAX communication</td>
<td>Create robust web applications and services in Java</td>
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<tr>
<td>Develop your vision for a website—and then build it!</td>
<td>Create session-based applications utilizing user authentication schemes that are well-known and widely used</td>
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<td>Expertly navigate the file system and terminal basics</td>
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COURSE STRUCTURE

Over the course of 24 weeks, you’ll attend engaging, 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 prime time. You’ll build a substantial portfolio of projects that demonstrate your abilities across a wide variety of technologies.
We believe in the power of real-time learning and peer-to-peer collaboration, and that's why our program offers live online classes, in real-time, so that you can take advantage of the benefits of a classroom experience—from any location. We also offer a range of resources so if you can’t make it to class, you can catch up on your own schedule. In order to foster teamwork, students will routinely separate into virtual breakout rooms during class, where they will work together on exercises and projects with the guidance of dedicated Instructors and Teaching Assistants. In addition, students will also benefit from:

1-on-1 mentorship

Expert guidance

Real-time collaboration with classmates

Screen-sharing capabilities for on-demand help

Individual support from instructional staff
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 class. We’re here to help—through group tutoring sessions, email, as well as a dedicated #Slack channel where you can get assistance from instructors, support staff, and your fellow students. All work is done via GitHub, so you can create issues directly on your own projects for instructors to assist you. In addition to learning to code, you will have access to career support that will help you prepare for technical roles after graduation. Career support includes:

<table>
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<th>Career Content and Practice Sessions</th>
<th>Online Career Events With Industry Professional</th>
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<tbody>
<tr>
<td>Database of Customizable Tools and Templates</td>
<td>Career Coaching</td>
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<tr>
<td>• Multiple Technical Resume Templates</td>
<td>Soft Skills Training</td>
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<tr>
<td>• Github Best Practices</td>
<td>One-on-One Career Coaching</td>
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<tr>
<td>• Guidelines To Building A Portfolio</td>
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<td>• Creating an Elevator Pitch</td>
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<td>• Developing a Bio</td>
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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. Projects range from simple HTML and CSS code samples to sophisticated Single Page Applications with backend databases.
Your Full Stack Portfolio Page

Once you complete our program, your portfolio page will help you showcase your work with links and descriptions to projects you’ve created, code samples, and the personal information that employers want to see. Think of your portfolio page as your new home on the web.

**Skills Needed**
- HTML5
- CSS
- JavaScript
- Bootstrap
- Heroku
- Git

**Objectives**
- Create a home on the web to showcase your skills
- Build a complete site from concept
- Commit code to a shared repository

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Browser Based Role Playing Game

Building a game has many components, and seemingly simple ones such as keeping track of state or playing over the Internet can be deceptively complex. This game involves components like interface design, state management, edge cases, determining win paths...and, of course, fun! Students also learn intangible skills, such as how to best tackle a difficult problem.

**Skills Needed**
- HTML5/CSS
- JavaScript/jQuery
- State Management
- Bootstrap
- Heroku

**Objectives**
- Build a fully functional game
- Track winning and losing stats
- Apply logic skills to a real project
- Understand the basics of iteration

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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
- Heroku

**Objectives**
- Work in a group to build a project together
- Interact with third-party services
- Think in terms of mobile responsive design
- Read/write from/to a remote database
Full Stack Project

In your first full stack web application, you’ll create an intuitive frontend, robust backend and scalable database.

Skills Needed
- HTML5/CSS
- Interactivity (AJAX)
- JavaScript/jQuery
- MySQL
- State Management
- Node.js
- Sessions
- Express.js
- Bootstrap
- ORM

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

Web Applications with Java

Learning Java will provide you with a firm foundation in one of the most popular and employable technologies both locally, and within the larger world of web development.

Skills Needed
- HTML/CSS
- Java
- Maven
- Git

Objectives
- Create a Java based project
- Use Spring Data to build database-backed, dynamic applications
- Build RESTful APIs and Services
- Build a foundation in classical Object-Oriented Programming and Design in Java
- Develop familiarity with core J2EE APIs

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
<table>
<thead>
<tr>
<th>Module</th>
<th>Description</th>
<th>What You’ll Learn</th>
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</table>
| **Module 1:**     | When most people think of the “Internet,” their mind immediately conjures up their web browser. We dive into detail about how the browser works and what exactly the source code comprising a web page does.          | » Creating a web page from scratch  
» Mastering terminal commands  
» JavaScript and its most beloved child, jQuery                                                                   |
| **Module 2:**     | The advent of the API has rapidly propelled the pace of innovation in technology. Being able to communicate with other systems enables you to do even more with yours.                                      | » Consuming RESTful APIs  
» Parsing JSON to extract meaningful data  
» Using AJAX to update data on a website without having to hit that “refresh” button in the browser |
| **Module 3:**     | Have you ever wondered how websites originate? They typically come from computer programs called “servers,” but did you know that servers do so much more? Interacting with databases and even other servers! Learn how to write server-side JavaScript code with Node.js. | » Writing Node.js server code to serve static web pages  
» Querying large amounts of data and answering questions from a MySQL Database  
» Understanding and using Joins, Wheres, and Counts strategically                                                  |
| **Module 4:**     | Java is a mature programming language trusted across the software industry to build safe, scalable, and robust applications                                                                                  | » Create scalable web apps, APIs, and Services  
» Take a deep dive into core Java and Object-Oriented Programming  
» Build a foundation in common build tools for Java projects, such as Maven |
| **Module 5:**     | Computer science fundamentals are essential to web development, so our curriculum includes a deep dive into the basics of coding and algorithms.                                                             | » Computer Science applied to JavaScript  
» Data Structure  
» Algorithms                                                                                                           |
| **Module 6:**     | Throughout the course, you’ve developed an impressive portfolio of projects to show future employers. This final project is all yours. Use all of the technologies you’ve learned and make something distinctly your own.     | » Dreaming up something fantastic and understanding the bounds of reasonable and achievable                           |