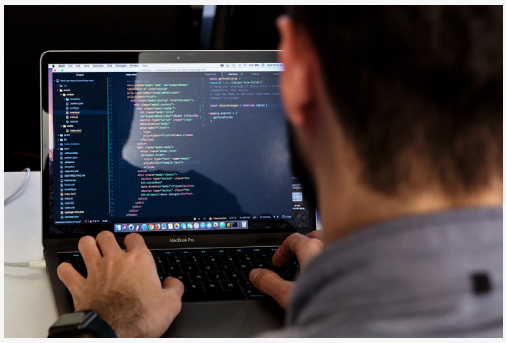
Software Engineering Immersive

GENERAL ASSEMBLY

Overview

General Assembly's Software Engineering Immersive is a full-time career accelerator that's designed to transform students from novices to job-ready, full-stack software engineers.

As a graduate, you'll leave with a solid base of fundamental programming and computer science knowledge, as well as experience with languages, frameworks, and libraries that local employers demand.



Our Expert-Designed Curriculum Spans:

- Coding webpages using Hypertext Markup Language (HTML), Cascading Style Sheets (CSS), and JavaScript.
- Programming and computer science fundamentals, as well as software engineering best practices.
- Version control and collaborative software development with Git and GitHub.
- Developing full-stack applications with in-demand technologies such as Ruby on Rails, Python with Django, and Express with Node.js.
- Building secure full-stack applications by leveraging common design and architectural patterns like model–view–controller (MVC) and Representational State Transfer (REST).
- Safely modeling and storing data in SQL and NoSQL databases.
- Consuming and integrating third-party application programming interfaces (APIs) in an application.
- Front-end web application development with modern JavaScript frameworks such as Angular or React.
- Deploying applications to the web via cloud-based hosting.
- Implementing common data structures encountered in technical interview situations, such as linked lists and trees.
- Solving algorithmic challenges and analyzing the computational complexity of algorithms using Big O notation.

Embark on a New Career Path

Get the training and support you need to execute a successful job search. Working one on one with career coaches, you'll:

- Compile a professional portfolio of full-stack applications to demonstrate hireability and job-ready skills to potential employers and collaborators.
- Prepare to ace technical interviews with resume reviews, mock interviews, and coding challenges.
- Access ongoing networking opportunities to connect with experts, employers, and potential collaborators around the world.
- Connect with hiring managers at A-list companies at exclusive hiring events.

What to Expect

Pre-Course Learning Paths

Set yourself up for success with up to 60 hours of preparatory lessons covering essential programming concepts in HTML, CSS, and JavaScript. Designed to help you make the most of the course, Software Engineering Fundamentals is a self-paced online learning path you'll complete before day one of class. After you've completed Fundamentals, gauge your progress with a final readiness assessment.

The In-Class Experience

Engage in full-time, project-based learning that's designed to inspire a lifetime of discovery. As an SEI student, you'll:

- Explore new concepts and tools through expert-led lectures and discussions.
- Complete coding exercises to reinforce newly learned skills.
- Dive deeper into topics and techniques via independent, pair, and group programming labs.
- Receive individualized feedback and support from your expert instructional team.
- Apply what you've learned to homework assignments and unit projects, building out a professional portfolio to show off job-ready skills to potential employers and collaborators.

Dedicated Career Coaching

As an Immersive student, you'll receive personalized support from career coaches who will help you set goals, make a plan for success, and stay on track with your job search. Throughout the course, you'll:

- Hear from guest speakers, take company tours, and participate in workshops to prepare you for a role in a new industry.
- Learn to assess your skill set against job descriptions, track your process, and adopt a growth mindset to help recognize opportunities and open doors.
- Develop your professional brand: Write a noteworthy resume, polish your online and in-person presence, and practice coding challenges and whiteboarding skills to set yourself apart in technical interviews.
- Engage with a global community of experts, influencers, and peers, plus learn strategies for leveraging your existing network, in person and online.
- Become an active contributor to online discussions and in-person meetups by sharing your work, diving into best practices for various tools and technologies, and contributing to your industry.
- Show off your hireability to potential employers and industry thought leaders with a professional portfolio, and strengthen valuable relationships with fellow job seekers at high-impact employer engagement events.

After graduation, you'll also gain access to resources to help fuel a lifetime of learning. Dive into new topics or continue honing your software engineering skills with discounts on a suite of tools, passes and packages to premier events, and more. You can also apply tuition discounts to future GA courses, classes, and workshops, both on campus and online.

What You'll Learn

Pre-Work

Software Engineering Fundamentals

Learn online, and get familiar with fundamental principles and techniques at the core of programming through our self-paced, pre-course learning path.

Project: Test your knowledge of key JavaScript concepts, including variables, objects, and functions, building an in-browser game from scratch.

- Start coding with HTML, CSS, and JavaScript.
- Leverage Git and GitHub to manage work.
- Practice working with a UNIX command line.
- Apply troubleshooting and debugging techniques.

Unit 1

Front-End Development

Discover what it takes to build the web you want to see through hands-on training in the essentials of front-end development. Explore core programming concepts that are applicable in any language, and find out what day-to-day life as a professional engineer is like.

Project: Work individually to build a front-end web application that users can see and interact with, leveraging JavaScript, APIs, and more.

- Get acquainted with common developer tools (e.g., Chrome Developer Tools, text editors, code linters).
- Learn to navigate a computer file structure and configure development environments via a UNIX/Linux command line.
- Solidify your knowledge of how HTML, CSS, and JavaScript are leveraged in software engineering (i.e., web typography, Document Object Model (DOM) manipulation, responsive design).
- Dive into fundamental programming concepts (functions, control flow, variables, scope, etc.) using JavaScript.
- Start using Git and GitHub for version control.
- Learn and implement rigorous debugging strategies.
- Start thinking algorithmically and breaking big problems into smaller parts.
- Gain an introduction to project design, project planning, and project management techniques engineers use on the job, including wireframes, user stories, and Agile development workflows.

Unit 2 Full-Stack Development

Learn to build full-stack web applications, deepening your knowledge of client-facing and server-side development. Expand your repertoire of programming languages and start coding collaboratively. Get familiar with key computer science concepts to become a more efficient programmer and perform confidently in technical interviews.

Project: Program a password-protected, full-stack application that stores data in a SQL or NoSQL database and deploy it via Heroku.

- Start writing recursive algorithms, as well as algorithms to solve computational problems such as sorting. Analyze algorithmic complexity using Big O Notation.
- Build web forms that collect user data for storage in a database (powered by Structured Query Language (SQL), MongoDB (noSQL), etc.).
- Get acquainted with front-end templating and libraries like Bootstrap.*
- Incorporate authentication capabilities into sites and applications (i.e., user logins, encrypted passwords, etc.).
- Gain an introduction to testing and test-driven development.
- Engage in pair programming to understand collaboration and documentation best practices.

** Tools taught may vary based on location and market demand.*

Unit 3 Front-End Frameworks

Gain expertise with the modern software engineering tools and frameworks you'll use on the job. Continue to hone your computer science knowledge by further exploring data structures. Get creative, building a full-stack application using technology you choose.

Project: Choose the tools and skills you use to build and deploy a full-stack application (students often incorporate JavaScript frameworks — i.e., Angular).

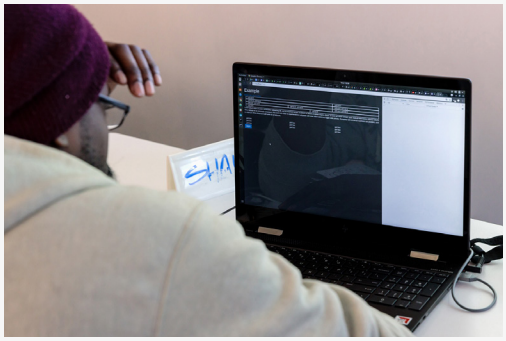
- Discover the capabilities that separate software engineers from coders, including the ability to plan, write, test, deploy, and launch a full-stack app using cutting-edge, next-gen technology.
- Deploy robust, modern front-end frameworks (i.e., React, Angular, or Ember) on which powerhouse platforms like Amazon and Facebook are built.
- Incorporate new patterns into front-end architecture, including custom behaviors, client-side models and data binding, form validation, and state management.
- Leverage the package managers and build tools regularly used by professional engineers.
- Continue to explore data structures and get acquainted with design patterns.
- Prepare for job interviews and engage in mock interviews and additional whiteboarding practice.

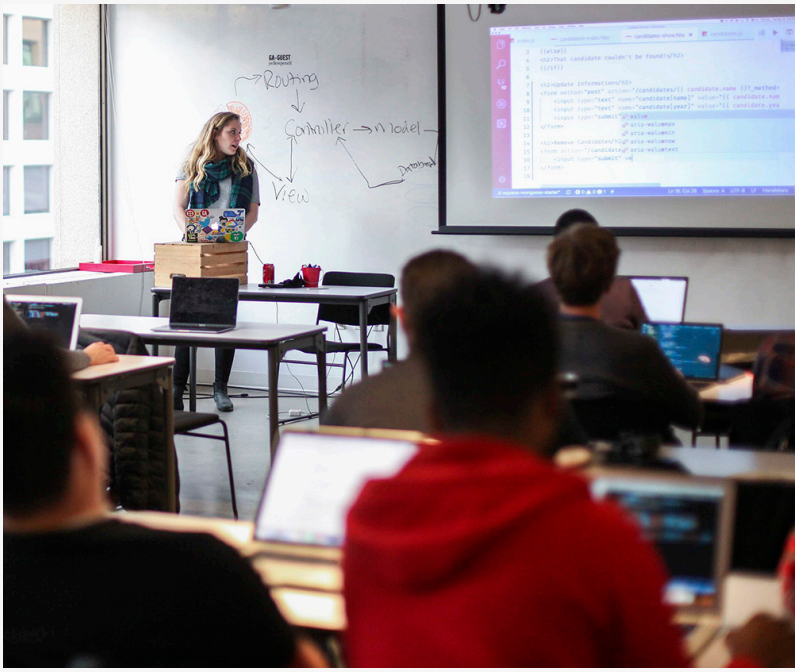
Unit 4 APIs and Full-Stack Development

Hone your programming skills by learning to build full-stack applications that leverage the capabilities of third-party APIs. Through pair programming and group collaboration, you'll gain hands-on experience executing a real-world workflow. Dive deeper into algorithms and data structures.

Final Project: Apply what you've learned throughout the course to mimic a team-client interaction, collaborating to build and deploy a full-stack application that fulfills provided specs. The final result will integrate functionality from a third-party API.

- Get acquainted with more back-end libraries, frameworks, and tools that incorporate powerful front-end technologies like AJAX (Asynchronous JavaScript and XML).
- Discover how to integrate third-party APIs into websites and applications (e.g., Stripe).
- Allow user login via token-based authentication and external accounts (i.e., social media, oAuth).
- Organize effective team workflows with Git and GitHub, refining technical and interpersonal collaboration skills.
- Explore advanced debugging, testing, and documentation techniques.
- Learn to use data structures, including linked lists, stacks and queues, sets, and trees.





Frequently Asked Questions

Why is this course relevant today?

There's never been a better time to start a career as a software engineer. In fact, the U.S. Bureau of Labor Statistics predicts that employment growth in this sector will top 24 percent between 2016 and 2026. From startups to Fortune 500 companies, there is a growing demand for software engineers who can creatively solve problems and implement robust, sustainable solutions.

What practical skill sets can I expect to have after completing this course?

By the end of our Software Engineering Immersive, you will be able to:

- Create responsive webpages for modern browsers using HTML, CSS, and JavaScript.
- Write secure full-stack applications and deploy them to cloud-based services like Heroku.
- Demonstrate programming and computer science fundamentals, as well as software engineering best practices.
- Consume web application programming interfaces (APIs) from third-party sites such as Twitter, Google, or Yelp.
- Build a RESTful API using a technology like Sinatra, Rails, Django, or Express.
- Build a richly interactive, front-end single-page application using a modern framework like Angular or library like React.
- Collaborate as a team using Git and GitHub, widely accepted collaboration practices, and an Agile development workflow.
- Implement common data structures encountered in technical interview situations, such as linked lists and trees.
- Solve algorithm challenges and analyze the computational complexity of algorithms using Big O notation.

What kind of community will I find in this course?

Our Software Engineering Immersive course attracts eager learners who are as passionate about growing and launching a new career as you are. Their backgrounds span professions in design, product management, and many other fields. The General Assembly experience creates lasting friendships and collaborations that will support you throughout a lifetime of discovery.

What does my tuition cover?

- Expert-led training in full-stack development and computer science skills, methods, and best practices.
- Up to 60 hours of self-paced, pre-course online learning.
- Access to a dedicated group of career coaches who will help you land a job after graduation.
- Ongoing job search support and exclusive networking opportunities.
- Additional alumni perks, including discounts, workshop credits, online classes, and more.

What are my financing options for an Immersive course?

Financial hurdles shouldn't keep you from achieving your goals. In addition to payment plans, we offer a few different financing options so you can focus on what counts — your education — including income share agreements and other options with $0 upfront costs. We also offer tuition reimbursement and scholarships for eligible students facing barriers to enrollment.

Contact Us

Connect with your local campus. Check out our Locations page to find contact information and explore events, workshops, and networking opportunities in your city.

Additional Resources

Course Application

Student Financing Details