

# Software Engineering Program

with your Bildungsgutschein



# Program details overview

	Full-time program	Part-time program
Program number (Maßnahmenummer)	Will be requested for your start date	Will be requested for your start date
Period of validity of the program	TBC	TBC
Occupational identification number (Berufskennzahl)	43412	43412
<b>Job market outlook for Software Engineers*</b>  <small>*statistik.arbeitsagentur.de (Engpassanalyse)</small>	Average time to find a job: 103 days Average salary development: +11,3% Job specific unemployment ratio: 2,9%  <b>Very good job integration outlook (Engpassberuf)</b>	
Program duration	8,7 months / 35 weeks / 173 working days / 1387 hours	17,3 months / 69 weeks / 347 working days / 1387 hours
Weekly working hours	40 working hours	20 working hours
Program language	English (minimum required level B1.2)	
Program location	Online only	Online only
Start dates	Every two weeks, always on a Monday (if the Monday falls on a public holiday, the course will start on Tuesday). <a href="#">See start dates.</a>	
Total number of projects	9	
Mentor model	1-1 Mentor and Tutor	
Job Support	Job Preparation Course and Career Services	
Laptop provided	Yes	
Internship	No	

# 1. General information about our certification for a Bildungsgutschein

All providers who wish to offer courses with an educational voucher (Bildungsgutschein) on behalf of the Agentur für Arbeit/Jobcenter (employment agency) must first undergo a rigorous certification process in order to check the quality of the courses offered. Only then are they included in the Agentur für Arbeit's official list of course providers (New Plan).



CareerFoundry has successfully completed this process in accordance with the guidelines set out by AZAV (Akkreditierungs- und Zulassungsverordnung Arbeitsförderung—Accreditation and Licensing Regulation for Employment Promotion), and, as a DEKRA-certified educational provider, is permitted to accept educational vouchers in accordance with AZAV since 2016.

## 2. What is a Bildungsgutschein?

A Bildungsgutschein is an educational voucher provided by the Agentur für Arbeit/Job Center to registered German residents who are unemployed or soon to be unemployed. The Bildungsgutschein pays for the recipient to complete further educational training that will help them get back into the workforce.

## 3. How do I know if I'm eligible for a Bildungsgutschein?

To be eligible for a Bildungsgutschein, you must be resident in Germany and have completed the official registration process ("Anmeldung") where you register your address at your local "Bürgeramt". Aside from that, you may be eligible for a Bildungsgutschein if:

- You are currently unemployed
- You are currently employed but facing the prospect of unemployment
- You require further training in order to ensure job security in your current employment
- You require further training in order to make up for a "missing" qualification which is relevant to your line of work

To check your individual requirements for a Bildungsgutschein, you can request an appointment at the Agentur für Arbeit/Jobcenter by calling (toll free) 0800 4 555500, by using the Agentur für Arbeit's [contact form](#), or visiting your local Agentur für Arbeit/Jobcenter. You will be assigned a contact person (advisor) who will assess your eligibility for a Bildungsgutschein.

It's important to note that the Bildungsgutschein is not a guaranteed benefit; the Agentur für Arbeit/Jobcenter is not obligated to grant one to all applicants. Also note that only the Agentur für Arbeit/Jobcenter advisors can determine your eligibility; CareerFoundry has no influence on this.

## 4. How to prepare for your appointment at the Agentur für Arbeit/Jobcenter

In addition to demonstrating your motivation and the value of the CareerFoundry program in helping you find a job, you'll need to bring and/or demonstrate:

- Proof that you are registered in Germany (Anmeldebescheinigung).
- Your up-to-date CV, ideally showing the connection between your professional background and the program you are going to take.
- Personalized course proposal ([request this from us](#)).
- This application guide ([view here in German](#)).
- List of relevant job ads within the Software Engineering field to show the strong demand for the skills you will learn in the program—you can take along some screenshots from Monster, Xing, Indeed, LinkedIn or StartupJobs — to name a few).
- If you don't speak German, it is advisable to bring someone along with you who can translate during the appointment.
- Emphasize that you will have access to a dedicated Job Preparation Course, it will provide all the guidance you need to refine your application packet, fine-tune your interview skills, and land that first Software Engineering job. If you complete the Job Preparation Course, you'll also receive the support of a dedicated career specialist for up to six months after graduation.

## 5. I've received a Bildungsgutschein. What's next?

Once you receive your Bildungsgutschein, please contact us at [bildungsgutschein@careerfoundry.com](mailto:bildungsgutschein@careerfoundry.com) to start your course admission process. Please note that this process can take up to 14 days. The admission process consists of several steps:

- Send us a copy of the Bildungsgutschein—we will need to check in advance whether all the details are correct
- Complete a profile survey—this helps us to get to know you better and assess your suitability for the program
- Read and sign the Terms of Participation—this includes all the information and rules of the course and explains how our collaboration with the Agentur für Arbeit/Jobcenter works
- Complete an admissions test—this is designed to help you and us to ensure that all program requirements have been properly understood and that you know what to expect
- Complete an English test; the minimum required level of English is B1.2

## 6. Who is the program for and what are the requirements?



This program is for complete beginners who'd like to learn the skills needed to become a job-ready Software Engineer—no prior knowledge or experience is required!



The program is also suitable for complete career changers, as well as upskillers who need Software Engineering skills in their current role, or if they're hoping to go freelance.

# 7. Which tools will you use in the program?

## Text editor

You'll use this tool to write and edit your code. We suggest using text editing programs such as VSCode and Sublime Text

## Node.js

You'll use this runtime environment tool to write JavaScript code that interacts with a server

## React

You'll use this JavaScript library for building user interfaces

## Javascript

You'll use this programming language on the client-side and server-side to build your projects into interactive and engaging products

These are the main tools you'll use in the program, but you'll explore plenty of other tools along the way.

### What are the costs associated for tools?

All the tools and software you'll need are free to use—with no additional cost to you.

**Note:** You will be required to invest some independent study time (approximately 1-2 hours per week) towards familiarizing yourself with the tools you'll use throughout the program, and learning how to use them.

## System requirements:

- Operating system: Windows 10, macOS versions 10.13 and later, Ubuntu, Debian, CentOS, or Fedora (Linux)
- We recommend a minimum of 8 GB of RAM on your device, but 16 GB would be preferable
- Contact us for more information on requirements for your specific operating system

## 8. How does the program work?



The program provides a **100% online, asynchronous** learning experience—so while there is an overall completion deadline, you get to decide how to fit your study hours around other obligations. You'll be working through the program material in your own personal account on the CareerFoundry platform.



The program is broken into several larger modules called “**Achievements**” which are made up of smaller lessons. Each lesson is made up of reading material, videos, tutorials, a quiz, and a task—where you'll put your learning directly into practice. Each task will contribute to the **final projects** and deliverables that you'll finish the program with.



While there is **no final exam**, you'll have a dedicated **tutor** and a professional **mentor** (assigned based on your timezone) who will assess your submissions against our internal rubric. They'll let you know exactly how to improve your work to get it approved.



The program is counted as complete once all the Achievements have been reviewed and approved by your mentor. You will be able to download your certificate of completion directly from your dashboard. Take a look at a video of CareerFoundry's learning experience or read more on our [How it Works Page](#).

You'll get free read-only access to our other career-change programs (data analytics, digital marketing, UI, and UX design) and after completing this program, will have lifetime access.

## 9. What kind of support is available?



### **Tutor**

Your tutor is a course expert who actively works in the field and provides individual feedback on your course assignments as you work through an Achievement. You'll communicate with them through the messaging tool in your account.



### **Mentor**

Mentors are seasoned professionals who review the final task in your Achievements and provide detailed video reviews of each project you complete during the course. You'll have video calls with your mentor over the span of the program. You can schedule these calls via our learning platform's built-in calendar tool. Learn more about our mentors and our dual-mentorship model on our [Mentors page](#).



### **Student Advisor**

Student advisors ensure you have the best possible experience throughout the program. You can message them from your dashboard (within the platform)—they're always happy to answer any questions you have about the administration of your program.



### **Career Specialist**

If you opt into the Job Preparation course, you'll also have a dedicated career specialist who will provide individualized feedback for your job search strategy and application package. Your career specialist will answer all your questions throughout the Job Prep course, and be there to support and advise you on how to get the most out of your job search, both as you work through the program, and beyond as you progress in your career.



### **Fellow students**

As a CareerFoundry student, you'll be part of an extensive community of fellow students, both during the program and after graduation. You can reach out to this community on Slack to discuss your coursework, organize meetups, or find a study buddy.

# 10. Program Outline

The Software Engineering Program is divided into four parts: Intro to Software Engineering, Software Engineering Immersion, and a specialization course of Python for Software Engineers and a Job Preparation Course.

## Intro to Software Engineering

You'll learn HTML and CSS, the building blocks of the web, as you work on creating your own responsive portfolio website from scratch.

**The Intro course will cover the following topics:**

1. Getting Started with Software Engineering
2. HTML and the Web
3. HTML Semantics
4. Advanced HTML & Web Accessibility
5. CSS & the Look of Your Website
6. Advanced CSS Layout
7. Advanced Topics in CSS
8. CSS Preprocessors & CSS Variables
9. Git & Version Control
10. Code Quality, Testing, and Web Hosting

[See a more detailed course outline here.](#)

# Software Engineering Immersion

Immerse yourself into the mindset of a Software Engineer through hands-on application of the processes and tools that Software Engineers use every day.

## Achievement 1 - Introduction to Javascript

Achievement 1 will cover the following topics:

- 1.1 What is JavaScript?
- 1.2 JavaScript Basics Part 1
- 1.3 JavaScript Basics Part 2
- 1.4 JavaScript Functions Part 1
- 1.5 Javascript Functions Part 2
- 1.6 DOM Interaction
- 1.7 APIs, Ajax & Asynchronous Behavior
- 1.8 Complex UI Patterns with JavaScript
- 1.9 Introduction to jQuery
- 1.10. Bootstrap & UI Libraries
- 1.11. Performance & Debugging

## Achievement 2 - Server-Side Programming & Node.js

Achievement 2 will cover the following topics:

- 2.1 Intro to Server-Side Programming
- 2.2 Node.js Modules
- 2.3 Packages & Package Managers
- 2.4 Web Server Frameworks & Express
- 2.5 REST & API Endpoints
- 2.6 Relational Databases & SQL
- 2.7 Non-Relational Databases & MongoDB
- 2.8 The Business Logic Layer
- 2.9 Authentication & Authorization
- 2.10. Data Security, Validation, & Ethics

## Achievement 3 - Javascript Frameworks

Achievement 3 will cover the following topics:

- 3.1 Intro to Frameworks & Libraries
- 3.2 Building with JavaScript
- 3.3 React Components & the Virtual DOM
- 3.4 React Lifecycle Methods
- 3.5 React Forms
- 3.6 React Bootstrap
- 3.7 Client-Side App Routing
- 3.8 Introduction to Redux
- 3.9 Deploying & Hosting a React App

## Achievement 4 - Testing in the Development Process

Achievement 4 will cover the following topics:

- 4.1 Test-Driven Development & Test Scenarios
- 4.2 Intro to Serverless Functions & Authentication
- 4.3 Writing & Testing Serverless Functions
- 4.4 Unit Testing
- 4.5 Integration Testing
- 4.6 User Acceptance & End-to-End Testing
- 4.7 Continuous Delivery
- 4.8 Object-Oriented Programming
- 4.9 Progressive Web Applications
- 4.10 Data Visualization

## Achievement 5 - Native App Development & React Native

Achievement 5 will cover the following topics:

- 5.1 Building Native Applications with JavaScript
- 5.2 Chat UIs & Accessibility
- 5.3 Real-Time Applications & Data Storage
- 5.4 Storing Data on the Client Side
- 5.5 Communication Features

## Achievement 6 - Collaboration & Documentation

**Achievement 6 will cover the following topics:**

**6.1 Collaboration & Project Management**

**6.2 Introduction to Angular**

**6.3 Advanced Angular Part 1**

**6.4 Advanced Angular Part 2**

**6.5 Documentation & Handoffs**

**6.6 Providing Constructive Feedback**

**6.7 Contributing to the Tech Community & Beyond**

[See a more detailed course outline here.](#)

# Python for Software Engineers

## Achievement 1: Introduction to Python

In this Achievement, you'll be introduced to the basics of Python programming, such as data types and structures, operators, functions, file handling, and exception handling, which you'll be using to build a command-line version of a recipe application. You'll learn how to implement object-oriented programming concepts with Python.

You'll use Python to create a database for your recipe app and learn how object-relational mapping (ORM) works in Python. This Achievement also aims to teach you standard Python programming practices that will make your code simpler, easier to read, and robust during execution.

Achievement 1 will cover the following topics:

1. Getting Started with Python
2. Data Types in Python
3. Operators & Functions in Python
4. File Handling in Python
5. Object-Oriented Programming in Python
6. Databases in Python
7. Object-Relational Mapping in Python

## Achievement 2: Software Engineering & Django

With your foundations set, you'll move on to using Django—a high-level Python web framework—to build the web application version of your recipe application. You'll use Django to create models, views, and templates, manage different functionalities, and provide authentication for your recipe application. Next, you'll use QuerySet API and Python's matplotlib library for some neat data analysis and visualization. You'll finish this Achievement by deploying your Recipe application to a web server so you can share your live application with others!

Achievement 2 will cover the following topics:

1. **Getting Started with Django**
2. **Django Project Set Up**
3. **Django Models**
4. **Django Views and Templates**
5. **Django MVT Revisited**
6. **User Authentication in Django**
7. **Data Analysis and Visualization in Django**
8. **Deploying a Django Application**

# 11. What kind of projects will you be working on?

## Intro to Software Engineering

**Project 1:** You'll build a portfolio site using HTML and CSS.

## Software Engineering Immersion

**Project 2:** You'll build a JavaScript app that communicates with an external API.

**Project 3:** You'll build a complete Software Engineering application with a Node.js and Express backend for your REST API.

**Project 4:** You'll build a client-side REACT API on the frontend for your RESTful API, built with React.

**Project 5:** You'll build a serverless, progressive web app that fetches data from the Google Calendar API using React.

**Project 6:** You'll build a JavaScript chat app built with React Native, featuring advanced functionality such as offline storage or geolocation.

**Project 7:** You'll build a version of your React app with Angular.

Take a look at some examples of projects created by Software Engineering Program graduates [on our website](#).

## 12. Will you receive a certificate?



You'll finish the program with a certificate of completion and several projects and skills to showcase in your job applications. The certification is in place as an indication of the quality of the program, but in the end, it's the projects and skills that you develop throughout the program that are going to display the quality of your work to future employers and ensure that you find a job.

## 13. Finding a job with CareerFoundry

At CareerFoundry, we offer stellar career services for our students which include 1-1 career coaching as you search for your first job (and beyond), an exclusive Job Preparation Course.

Check out our [Career Services](#) pages for more information on Career Services.

You can also check our latest [Outcomes Report](#) for job outcomes, which features our over 90% job placement rate.

### Job Preparation Course

Our Job Preparation Course is included in the Software Engineering Program and has been designed to help you with all aspects of finding a job in the field. You'll work with your dedicated career specialist alongside your studies for the second half of the course.

The Job Preparation Course consists of two Achievements, each made up of several tasks.

### Achievement 1 - Curation of Your Application Package

Achievement 1 will cover the following topics:

1.1 Crafting Your Mission Statement

1.2 Developing Your Career Change Strategy

1.3 Defining Your Elevator Pitch

1.4 Showcasing Your Process and Skills

1.5 Creating Your Professional Resume

1.6 Building a Professional Portfolio

1.7 Establishing Your Professional Brand

## Achievement 2 - Applying for Jobs and Beyond

Achievement 2 will cover the following topics:

2.1 Building Your Network

2.2 Searching for New Jobs

2.3 Applying for Jobs

2.4 Preparing for Interviews

2.5 Planning Your Professional Development

# 14. What kinds of roles will you be qualified for?

Based on our comprehensive curriculum, you'll be qualified for **junior Software Engineering** jobs. If you have transferable skills from your past career, you can potentially get a more senior role—your assigned career specialist will help you to craft the right story with your previous experience to be able to find such a role. Learn more about our graduate outcomes on our [Graduate Outcomes page](#).

Here's a few job titles you'll be qualified for by completing the Software Engineering program:

Software Engineer, Software Developer, Full-Stack Web Developer, Front-End Developer, Back-End Developer, Mobile App Developer, Devops Engineer, Automation Engineer, QA Engineer