

# Become a *Software Engineer*



Software Engineering Syllabus

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## Career Training

Our 8-month intensive training program will equip you with the essential Software Engineering skill set and get you job-ready. You will learn the fundamentals of Software Engineering, get hands-on experience, and develop a stellar portfolio with real-world projects that are sourced from the world's leading tech companies.

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## Career Accelerator

Following your career training, you will join our Career Accelerator, where you will be searching for a full-time Software Engineering job, while taking part in extensive career workshops, and one-on-one mentorship sessions. During this time, you will also continue to develop your technical skills with our advanced Software Engineering training paths.

## *Endless career growth*

Our goal is to ensure that you build an inspiring career. This means that we're here for you even after you've been hired for your first role. As our graduate, you will become a part of our vibrant alumni community, gain access to exclusive events and workshops, and get the undivided support of our team whenever you start thinking about the next step in your career journey.

## SE101

## Tech Fundamentals

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During the first unit of our program, we will lay the groundwork with the tech fundamentals you need to succeed.

Learn programming with Python, practice algorithmic thinking and complete your first coding projects. In addition, this unit will teach you time management skills, touch typing, and how to use keyboard shortcuts to work effectively.

**Sprint 1** Problem Solving and Algorithmic Thinking

**Sprint 2** Programming with Python 1

**Sprint 3** Programming with Python 2

**Sprint 4** Practice Week

### Concepts

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|------------------------|----------------------|
| - Python               | - Touch Typing       |
| - Problem Solving      | - Keyboard Shortcuts |
| - Algorithmic Thinking | - Networking         |
| - Time Management      | - Internet           |

## SE102

## Intermediate Python

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In this unit, we will take a deep dive into the Python programming language. We will learn about new data structures, loops, and focus on how to break down a big problem to smaller units using functions. During this unit we will create our offline workspace with PyCharm and learn how to use the Python Interactive Shell effectively.

**Sprint 1** Strings, Lists and Booleans

**Sprint 2** Advanced Functions and Lists, Boolean Expressions

**Sprint 3** While Loop, Dictionary and Tuple

**Sprint 4** Practice Week



Concepts		Technologies & Frameworks
- Debugging	- Python Interpreter	- IDE
- Dictionaries	- Strings	- Python Shell
- Lists	- Tuples	
- Main function	- While Loops	
- Python Functions		

## SE103

## Advanced Python

In the first part of this unit, we will build the first piece of our dynamic training-long project. Next, we will focus on best practices for creating a clean and documented code, and maintain version control with Git. In the last part, we'll learn how to use Python to read files and create complex data structures.

**Sprint 1** Project - Phase 1

**Sprint 2** Coding Standards and Git

**Sprint 3** Files and Data Structures

**Sprint 4** Practice Week

Concepts		Technologies & Frameworks
- Coding standards	- Files	- Git
- Documentation	- Nested Structures	- PEP 8
- Exceptions	- Version Control	

## SE104

## Intro to Web

In this unit, we will learn how the web works, focusing on the three basic building bricks - HTTP protocol, HTML and CSS. Next, we'll learn how to use Python to get data from online sources and API's, Analyze it and extract the interesting parts.



**Sprint 1** Intro to HTML, CSS

**Sprint 2** Intro to HTTP, Python Requests and JSON

**Sprint 3** Project - Phase 2

**Sprint 4** Practice Week

#### Concepts

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- API
- CSS
- HTML

- HTTP
- JSON

#### Technologies & Frameworks

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- Chrome Developer Tools
- Python Requests

### SE105

## Object Oriented Programming

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In this unit, we'll learn how to search and extract data from websites using Regex, a powerful text pattern language. Next, we will introduce the important programming paradigm of Object Oriented Programming.

**Sprint 1** Web Scraping and Regex

**Sprint 2** Object Oriented Programming

**Sprint 3** Project - Phase 3

**Sprint 4** Practice Week

#### Concepts

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- Object Oriented Programming
- Regex
- Web Scraping

## SE106

## Web Applications

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In this unit, we'll create our very first web application. We'll learn about Flask, a widely used back-end framework in Python, and use it to build a CRUD (Create, Read, Update, Delete) application. Using HTML Templating, we'll create the front-end part of our web app.

**Sprint 1** Flask basics and HTML templating

**Sprint 2** Flask Routing

**Sprint 3** Project - Phase 4

**Sprint 4** Practice Week

Concepts		Technologies & Frameworks
- CRUD	- Routes	- Flask
- Flask	- Web Server	- Jinja
- REST		- Postman

## SE107

## Databases

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In this unit, we'll learn how to work with databases in Python. We'll start by learning the basics of Relational Databases and SQL. Then, we'll learn how to design a database, and query it using Python. Finally, we'll learn how to connect a web application to a database.

**Sprint 1** Relational Databases, SQL

**Sprint 2** Using Databases with Python

**Sprint 3** Project - Phase 5

**Sprint 4** Practice Week

Concepts		Technologies & Frameworks
- Relational Databases		- SQLite
- SQL		

SE108

## Architecture & Deployment

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In this unit, we will learn how to use Linux systems in order to deploy our software online. We will use industry-grade cloud platforms like AWS and cloud technologies like Docker. By the end of this unit, we will be able to deploy our own web applications online, so it's accessible for everyone.

**Sprint 1** Intro to Linux Servers

**Sprint 2** Web Application Deployment

**Sprint 3** Project - Phase 6

**Sprint 4** Practice Week

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### Concepts

- Cloud
- Linux
- Servers

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### Technologies & Frameworks

- AWS
- Docker

# Career acceleration to land your first Software Engineering role, and beyond.

During the Career Accelerator, you will be actively looking for your first full-time Software Engineering role. You will be learning everything you need to know about how to get hired for your dream job at a top tech company, while continuing to develop your technical and soft skills. Our goal here is to make you the ideal candidate for the role you are after, and to help you start your career as early as possible.



## Career Workshops

Participate in extensive live workshops that are focused on developing your “elevator pitch”, activating your personal and professional networks, learning job search and salary negotiation strategies, setting weekly goals, and more.

## Squad Sessions

Join a Squad of a small number of your fellow students for weekly group sessions to share advice and drive each other forward. Squad Leaders are industry experts who bring their squad members from being job-ready to getting hired. You will meet your Squad Leader in Squad meetings and 1:1 sessions.

## Advanced Learning

Continuous advanced training to keep sharpening your skills and expanding your experience and expertise, with additional challenges and projects to add to your portfolio. Topics include: Javascript, React, NodeJS, MongoDB, Serverless.

## Interview Preparation

Master your industry technical proficiency and your personal interviewing skills through taking part in live mock-interview simulations and receiving insightful, personal feedback from industry experts.

## Job Search Toolkit

Be a pro candidate by tracking your opportunities, managing your job interview process, building your portfolio, and showcasing your projects with the best tools on the market to organize and accelerate your job search.

## Our Career Week

Attend our Career Week, where you'll be able to meet representatives from leading tech companies that are looking to hire our graduates.



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*All of our dreams can come true  
if we have the courage to pursue them.*

**Walt Disney**