Code Platoon
Code Camp for Veterans and Spouses

Curriculum Outline

This document is to provide an overview of the modules, weeks, and essential materials of the AI + Full Stack Software Engineering Program.

Day 1: Onboarding/Installfest

Time Allotted: 4.5 Hours

Day 1 will be utilized to ensure all students have the appropriate tools to successfully complete Code Platoon's program, introduce students to staff, and cover the standards, regulations, and requirements Code Platoon has of the student body.

Module 1: AI - Agents as Tools

Days Allotted: 3 Days

This module covers the basics of what is a Large Language Model, how it understands you, and how it generates an answer. From there we talk about the best way to communicate with LLMs to generate the best output. Finally this Module ends with a deep understanding of how Coding Agents function and a complete set up of Claude Code within your environment.

Module 2: AI - Building Applications

Days Allotted: 6 days

In this module you will learn what is "Full Stack development", how an application gets, stores, and edits data, and how the application itself is broken down into segments. From there we will move on into version control with Git & GitHub to allow us to share our projects and safely store our progress while developing an application. Finally you will hoist Claude Code to enable you in the process of Vibe Coding a Full Stack application holding CRUD and Authentication capabilities.

Module 3: AI - Beyond Building

Days Allotted: 4 Days

In this module you will learn concepts that go beyond just building an application. You will learn how to apply 3rd Party APIs onto your application, how Development Operations (DevOps) function and should be applied, and most importantly you'll go through the process of deploying at least one of your very own projects into the internet.

Assessment 1

This Assessment will test you on applying the fundamentals learned through Modules 1-3 over a span of 48 hours.

Module 4: SE - Fundamentals

Days Allotted: 4 Days

In this module you'll learn/refresh many of the essential skills for development. You'll learn about dockerization, test-driven development, and GitHub Actions. You'll also refresh your knowledge on basics like Git/GitHub, JavaScript, Python and how to effectively solve Algorithms as a developer.

Module 5: SE - OOP

Days Allotted: 3 Days

In this module you will learn about the concept of writing well organized code by following the five principles of Object Oriented Programming and other fundamental principles like "Don't Repeat Yourself" and the "Single Responsibility Principle".

Assessment 2

This Assessment will test you on applying the fundamentals learned through Modules 4-5 over a span of 48 hours.

Module 6: SE - Data Structures and Algorithms

Hours Allotted: 85 Hours

This module will break down algorithms to help you understand how they work and identify when the best time is to apply their concepts. We will also break down popular data structures like Hash Maps, Linked Lists, and Binary Trees to build your Computer Science fundamentals and prepare you for technical interviews.

Module 7: FS - Front End Development

Days Allotted: 9 Days

In this module we will work through the process of understanding and creating a Single Page Application with Vite, React.js, Axios, and React-Router DOM. You will learn how to apply basic React concepts like hooks, components, and props while also learning how to handle promises with Axios and industry best practices for writing Front-End code. We will do a small dive into design practices, end-to-end testing, and deployment with GitHub Pages.

Assessment 3

This Assessment will test you on applying the fundamentals learned through Module 7 over a span of 48 hours.

Module 8: FS - Back End Development

Days Allotted: 9 Days

This module will teach you how to build and understand the API infrastructure with Django, Django Rest Framework, Redis, and PostgreSQL. You will learn about data management and best practices for API conventions. You will learn about different forms of authentication, how they work and how to apply token-based authentication for your APIs.

Assessment 4

This Assessment will test you on applying the fundamentals learned through Module 8 over a span of 48 hours.

Module 9: FS - Full Stack Development

Days Allotted: 6 Days

In this module we will go through the process of taking the fundamentals we've learned through Modules 7 and 8 and tie them together to create our Full Stack Applications with CRUD capabilities, Authentication, and 3rd Party API integrations. We will then explore AWS as a cloud provider and walk through the process of deploying an application and best practices for handling your development and deployment environments.

Assessment 5

This Assessment will test you on applying the fundamentals learned through Modules 7-8 over a span of 15 days.

Group Projects

Days Allotted: 10 Days

In this final project you, and your team, will come together to apply everything you learned throughout the last 13 weeks to create and deploy a Full Stack application while working as a development team and using version control to manage your codebase.