

Software Engineering Immersive

In this 10-week certificate, students will learn all the necessary skills to become full-stack web developers. This immersive course allows students to master both the front-end using HTML, CSS, JavaScript, React as well as the back-end using Python, Django, Node.js. After completing this certificate, students will be able to apply for the following roles: software engineer, front-end web developer, back-end web developer, and many more. Noble Desktop will support students in their effort to find jobs by helping students with resume, interview prep, and introducing students to companies looking to hire engineers.

Group classes in NYC and onsite training is available for this course. For more information, email class@programwithus.com or visit: <https://programwithus.com/classes/software-engineering-immersive->



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Course Outline

Intro to Python

Introduction to Python

- Variables
- Numeric Data Types: Int & Float
- Sequential Types: Str & List
- If-Elif-Else Statements
- Creating Python Scripts/Files
- Definite loops: For loops
- Indexing
- Slicing

Advanced Data Types in Python

- Data Types: tuples
- Dictionaries
- Reading and Writing txt and csv files

Writing Iterative Code and Algorithms

- Indefinite loops: while loops
- Runtime complexity
- Searching and sorting algorithms

- Custom functions in Python
- Args and Kwargs
- Importing files

Object Oriented Programming with Python

Introduction to Object Oriented Programming

- Classes
- Methods
- Inheritance
- Abstract Classes

Working with APIs

- RESTful architecture
- Working with APIs
- Request library

Introduction to Developer Tools and SQL

- Assert statements
- Testing
- Git
- Intro to SQL
- CRUD

Intro to JavaScript, HTML and CSS

Introduction to Front-End Web Development

- HTML
- CSS
- Build a static website
- How JavaScript works

Advanced Front-End Development using JavaScript

Syntax, Data Types, and Expressions

- Lexical structure of JavaScript
- Data types In JavaScript
- Expressions and operators
- Statements in JavaScript
- “This” keyword

DOM, Objects, and APIs in JavaScript

- Manipulate DOM with JavaScript
- JavaScript Objects
- Making API calls with fetch

Using JavaScript Libraries

- JavaScript functions and expressions
- JavaScript libraries

Server-Side JavaScript and Rhino

- Server-side JavaScript
- Scripting JavaScript with Rhino
- Browser location and navigation
- Scripting CSS

Advanced Web Topics: Scripting Images and Node.js

- Handling events
- Scripted HTTP
- Scripting Images
- Client-side storages
- Node JS

Introduction to Django

Introduction to Back-End Web Development using Django

- HTTP protocol
- MVC model
- Virtual environment
- Django structure
- Generic Views
- HTML templates
- URL dispatcher

Advanced Django for Web and Automation

- Custom Views
- GET and POST methods
- URL shortener
- User model
- Logic in templates
- Querying models
- Serving Staticfiles
- Deployment of Django
- Automating tasks with Django

Django REST

Building Web APIs using Django REST

- Generic Views in Django Rest
- Serializers
- JSON
- Building RESTful APIs
- Filtering Models

- Working with Images
- Authentication with tokens
- Postman
- Related models
- Contenttypes app

Deploying Web APIs

- Using API endpoints
- Deployment of Django REST project

Introduction to React

Introduction to Advanced Front-End Web Development using React

- React built-in commands
- Virtual DOM
- Component
- Lifecycle of component
- API calls with Axios
- Cross-origin resource sharing

Dynamic Web Applications using React, Axios, and CRUD

- Props
- State
- Children component
- CRUD with Axios
- Styling components
- Environment variables
- Deploying the project

React Native

Mobile Application Development using React Native

- API calls in React Native
- Class components vs Function expressions
- Hooks
- Dealing with Images in React Native
- Basic components
- Card List View

Forms, Authentication, User Registration using React Native

- Forms with Formik and Yup
- Sending Data with APIs
- Navigation between screens
- Authentication
- User registration
- User login

Deploying Mobile Applications to App and Google Play Store

- Building iOS app for App store
- Building Android App for Google Play store
- Distributing iOS and Android apps

Capstone Project and Career Support

Final Project and Presentation

- Concept presentation
- Approval by committee
- Working on the project
- Intermediate report to committee
- Finishing the project

Preparing to enter the job market

- Resume review and mock interviews
- Understanding the Job Market
- How to identify the right company for you
- Final presentation of working project (Open evening presentation)