code institute

Code Institute Diploma in Software Development

Syllabus Overview

Module 0 - Pre-Programme Technology Primer

The module covers all the necessary prerequisites for our main programme. Students must have a base level understanding of the technologies, concepts and languages before commencing. This module enables the later content to cover material at a level beyond first principles. By beginning at a point beyond the absolute basics, the programme exposes the student to more practical work throughout.

The material is collated in a central resource. The content is sourced from verified pre-existing online video and text based material.

Specifically:

- HTML
- CSS
- Scratch
- JavaScript
- Python
- Git/GitHub

Module 1 - Front End Design and Development

This module will develop proficient skills in Front End coding technologies specifically:

- HTML5,
- CSS3,
- JavaScript Libraries including JQuery D3.js
- Front End Frameworks including Bootstrap and AngularJS
- Use Git to maintain, upload and share code with other developers
- Understand and implement responsive design and user experience best practices.
- Use industry standard Integrated Development Environments such as Sublime Text
- Teamwork and collaboration through in-class exercises

Topic List

1. The Box Model
2. The Box Model 2
3. Positioning & CSS
4. Media
5. Gradients, Transforms & Transitions
6. NavBar – CSS Selectors
7. Flexbox
8. Semantic Web & Font
16. Bootstrap Responsive Design
17. Javascript Revisited
18. jQuery
19. jQuery Events
20. jQuery: Traversing mt. DOM
21. Javascript Part II
22. Data Visualisations & D3
23. D3 & Data

9. Balsamiq
10. User Experience Design
11. Forms
12. Git
13. Git Remote
14. Bootstrap
15. Bootstrap Nav Elements
24. D3 Scales
25. D3 Axes and External Files
26. Introduction to AngularJS
27. Angular Routing
28. Angular Forms
29. Angular Services
30. Angular Directives

Module 2 – Back End Development and Data Integration

This module will develop proficient skills in Back End coding technologies and the integration of a variety of data types specifically:

- Python programming
- Use industry standard Integrated Development Environments such as PyCharm
- Debugging code
- Unit Testing
- Classes and Objects
- Be able to access and manipulate data effectively including Structured and Unstructured data using MongoDB and MySQL databases.
- Use the Flask micro framework
- Use the skills gained in Module 1 to create data visualisations
- Teamwork and collaboration through in-class exercises

Topic List

1. Installing Python
2. Installing PyCharm
3. Testing
4. Version Control
5. Boggle Solver Part 1
6. Boggle Solver Part 2
7. File IO and Exceptions
8. Conway's Game of Life
9. Flask Part 1
10. Classes
11. Database Fundamentals
12. Installing MySQL and MySQLWorkBench
13. MySQL Database Creation
14. Data Creation and Modification
15. Data Selection Queries Part 1
16. Data Selection Queries Part 2
17. Using Python with MySQL Part 1
18. Using Python with MySQL Part 2
19. Using Python with MySQL Part 3
20. Twitter Setup and Trends
21. Twitter API Tweets 1
22. Twitter Streams 1
23. Twitter Streams 2
24. Introduction to Mongo DB
25. Web scraping
26. Dimensional Charting with D3.js, DC.js and Crossfilter.js
27. Deploy a server-side application to a server

code institute

Module 3 – Full Stack Application Deployment

Overview

This module will develop skills in the integration of modules, students will build and deploy a full stack application framework using Django and advanced Python.

Specifically:

- Creating Templates
- Create a blog
- Create a forum
- Create a polling application
- Implement authentication and security features
- Enable e commerce payment systems including Stripe and Paypal
- Learn advanced database transactions
- Become skilled in integration testing
- Deploy a full stack application to a server

Topic List

1. Virtualbox and Linux Primer Unit
2. Beginning Django
3. Django with Templates
4. Django Models
5. Django Administration
6. Django Blog – Part 1
7. Django Blog – Part 2
8. Django Blog – Part 3
9. Django Blog – Part 4
10. Django Blog – Part 5
11. Flatpages
12. Custom User and Email Authentication
13. Stripe Basic Payments
14. Stripe Subscriptions
15. Stripe Recurring Payments
16. PayPal Basic Payments
17. PayPal Subscriptions
18. Reusable blog app
19. Create a forum
20. Taking polls
21. Django REST Framework
22. AngularJs and Django Integration
23. A Subscription based forum
24. Django database transactions
25. Django's testing framework
26. Deploying your site