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Unit 1

Introduction to Engineering

HTML + CSS
Testing
Ways of working (pair programming, code review, etc)
Git + Github
Terminal / Shell Scripting

Portfolio project (individual)

GitHub Pages, HTML, CSS, Styling Frameworks

Unit 2

Introduction to Programming

Modern Javascript, Programming Fundamentals, DOM, Browser Events
VSCode as an IDE
Docker
Unit Testing (Jest)
Regex
Node and NPM

Programming Best Practice

Intro to HTTP
How the internet works
Agile Training (Certified Scrum Master)
Web Security
Clean Code

Project TBD (individual)

A "collections" App eg top trumps, pokemon, stamps etc

Unit 3

Front End Tools

Styling tools (bootstrap / Sass / material UI)
React including React Router
Intro to RESTful APIs
Intro to accessibility (Scope TBD)

Front-end React using external API (group)

A React app interfacing with existing API's

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Unit 4

Back end tools

Express, REST API and CRUD
Mongodb and Mongoose
Intro to testing APIs
Intro to Login/Auth/Security

Project - Full Stack MERN App (group)

Full stack app eg food delivery service eg deliveroo.

Unit 5

Introduction to OOP with Java

Java and OOP
JUnit + Coverage
IntelliJ
Potential for a ½ day legacy code
project/exercise with industry partner

Project - OOP-based (group)

OOP based game eg text adventure game.

Unit 6

Advanced OOP with Java

SQL and Relational DBs
Spring Boot
JPA

Project - include API + DB + testing (group)

eg desk booking with IOT status lights (With provided front-end.
Project to focus on java spring back end with client
calls to an API for lights and sql db for bookings data)

Unit 7

Advanced/Overflow topics

SOLID, Mobile Dev, Data Structures and Algorithms

Final Project (group)

"Enterprise" Spring Boot java server, BD + modern JS front end