



**Module 1 – Introduction to Javascript 3 weeks**

- Employer induction and familiarisation
- Pre-reading

**Module 2 – Bootcamp 3 weeks (Full time)**

- Writing Javascript Code
- Using IntelliJ Development Environment
- Using Git for Version Control
- Writing Clean Code
- Unit Testing
- Debugging and Problem Solving Skills Working with Files
- Working with HTTP
- Working with Node
- Writing Javascript for the Browser

**Module 3 – Further Javascript 8 weeks**

- Numbers, Dates and Times
- String Formatting
- Type Coercion
- Functional Programming
- Closures
- Libraries, Frameworks and Package Management
- Threads and Asynchronous Programming

**Module 4 – Web Development 10 weeks**

- HTML
- CSS
- SASS
- Principles of User Experience (UX)
- Express
- Accessibility
- Server-side Rendering
- Responsive Design
- Linting
- Security

**Module 5 – Principles of Clean Code 3 weeks**

- DRY (Don't Repeat Yourself)
- YAGNI (You Ain't Gonna Need It)
- Separation of Concerns
- Principle of Least Surprise
- Levels of Abstraction
- Pure Functions

**Module 6 – Data Structures 3 weeks**

- Algorithmic Complexity
- Sorting Algorithms
- Searching Algorithms
- Working with Collections

**Module 7 – Frontend Frameworks 3 weeks**

- Working with The DOM
- JQuery
- Popular Frontend Frameworks

**Module 8 – Databases 8 weeks**

- Tables, Relationships & Database Design
- Reading & Writing Data Using SQL
- Aggregates, Joins & Subqueries
- Datatypes & Null Values
- ORMs and Migrations
- Indexes and Performance Considerations
- Object and Key Value Databases

**Module 9 – Testing 8 weeks**

- Levels of Testing (unit, integration, system, etc.)
- Types of Testing (functional, performance, security, etc.)
- Styles of Testing (test-driven, exploratory, etc.)
- Testing Libraries
- Browser Tests
- Browser Compatibility
- Test Metrics (coverage targets, etc.)
- The Testing Mindset

**Module 10 – Engineering Camp 2 weeks (full time)**

- Seven stages of the Software Development Lifecycle
- Software Development Methodologies (waterfall vs agile)
- Team structure and project management

**Module 11 – Advanced Javascript 10 weeks**

The Advanced Javascript course is designed to prepare apprentices for the exam and consists of a 10-week series of weekly learning guides, practice exercises and facilitated discussion sessions following the current syllabus.

They will also touch on the following topics:

- The Event Loop
- ES6
- Typescript

**Module 12 – Project Engineering Skills 10 weeks**

The Project Engineering Skills module is designed to prepare apprentices for the End Point Assessment, which will be a one week assessed project involving building a complete software solution from requirements through to implementation.

The primary focus of the course is on practice papers supported by group discussion, with additional material tailored to individual student requirements.