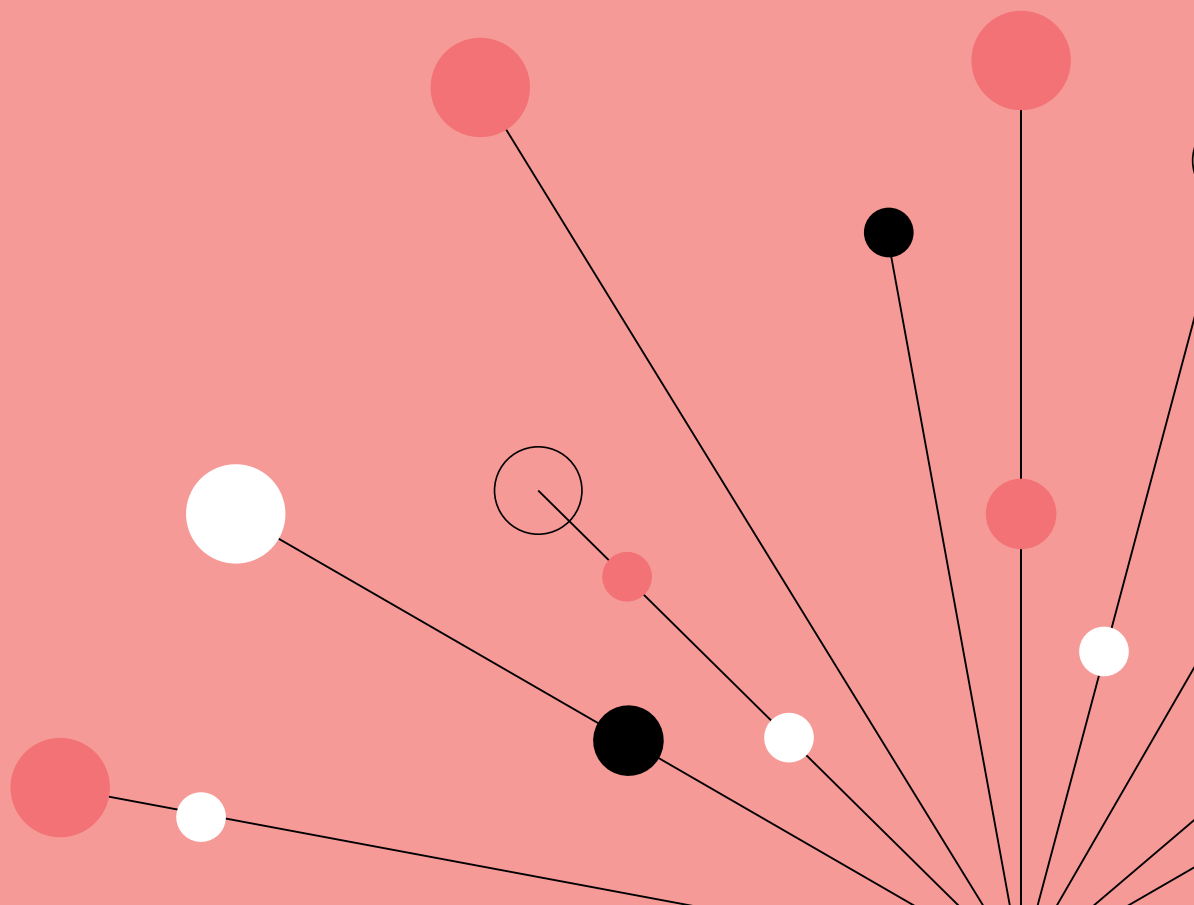


# Software Engineer

**Level 4 Apprenticeship**  
Programme Guide





## Why QA?

Endorsed by 4,000+ global clients, we are the leader in applied and cohort-based learning academies.

Today's biggest technological shifts are shaped by AI, cloud, and data.

In every technology revolution, there are winners and losers – and teams with applied skills make all the difference. We believe you can't change an organisation unless you change the capabilities of its people and ensure human and machine intelligence work together.

### Success in numbers:

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**40+**

Years of training  
experience

**1,000+**

AI, cloud & coding  
hands-on labs

**50,000+**

Careers launched  
& accelerated

**£500m+**

Levy funds  
invested

**24 hours**

Feedback time for  
submissions

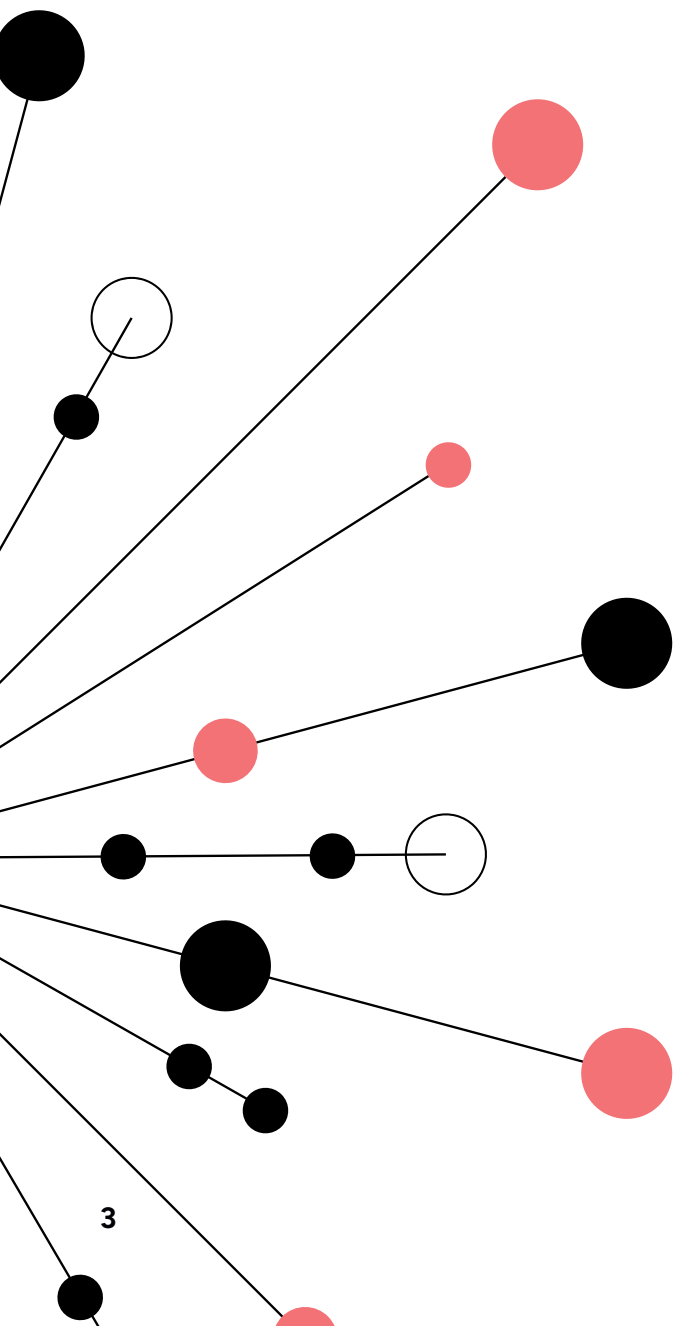
**<1 minute**

Response time to  
learner queries



**Ready to explore how QA can support you?**

Let's dive in!



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# Creating Change

Software engineering turns visionary ideas into innovative, seamless digital solutions.

This programme equips your organisation with essential skills for the software development lifecycle, enabling effective product planning and development through agile frameworks, while fostering expertise in both back-end and front-end applications.

Our apprenticeships drive business results by empowering organisations to apply skills consistently at speed and scale.



## Upgrade Software Engineering

Transform customer requirements into precise technical specifications that meet both functional and non-functional needs.



## Diversify Software Team

Cultivate a diverse team to optimise software products and drive innovation for superior project outcomes.

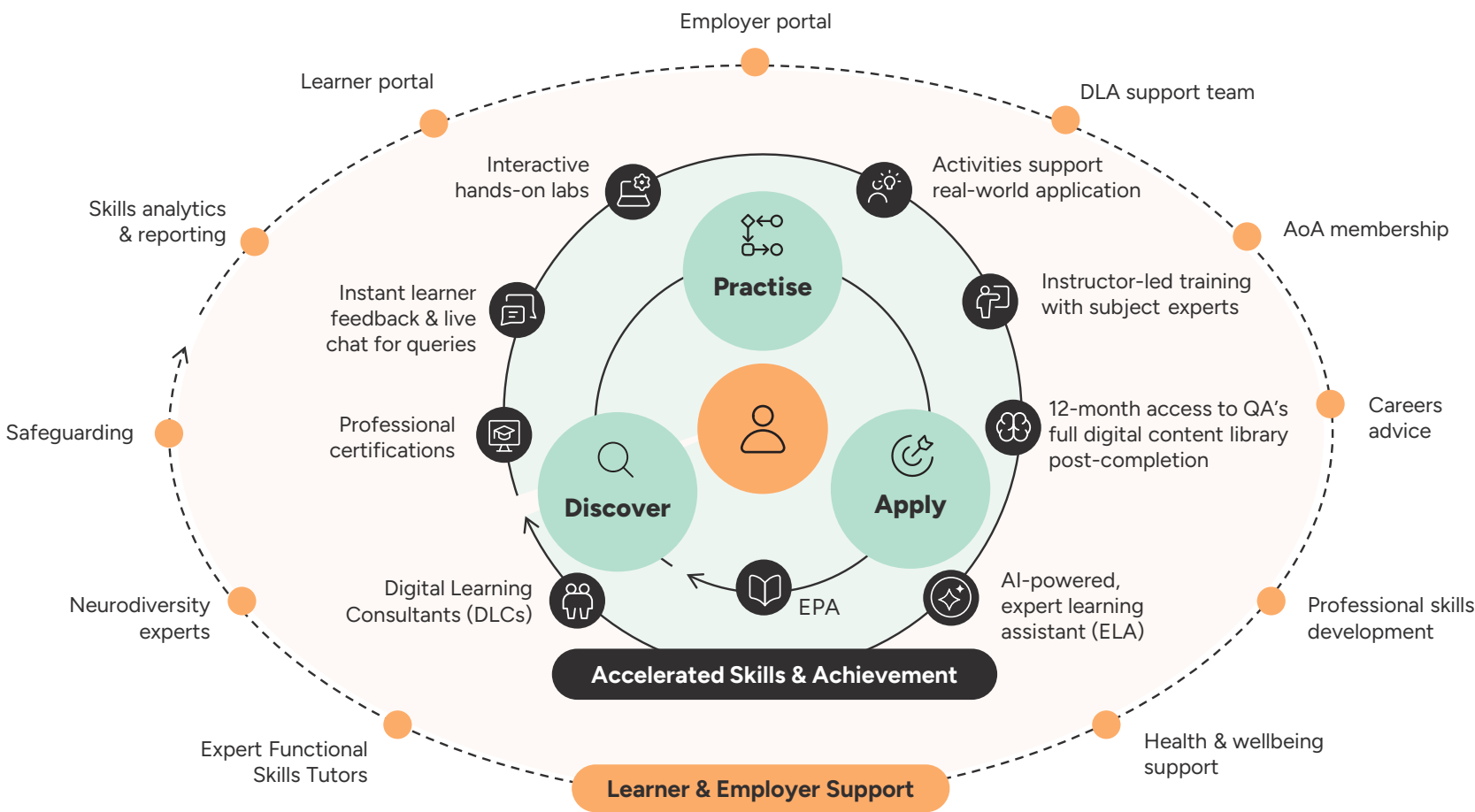


## Digitally Transform

Combine theory and hands-on training to deliver high-quality solutions across the software development lifecycle.

# Digital by Design

Our market-leading approach accelerates skill development and achievement through our **Discover, Practise, Apply** methodology, ensuring that both learners and employers are fully supported throughout their programme.



## Discover

Leveraging QA's learning platform, learners follow a development path focused on their job role.



## Practise

Learners join instructor-led sessions, practise skills in hands-on, risk-free labs, and collaborate with peers.



## Apply

Learnings are applied on the job through work-based activities at key stages, supported and reviewed by specialist DLCs.

# Programme Overview



**Details of standard:** Software Developer



**Total cost:** £18,000



**Programme duration:** 19 months



**Live instructor sessions:** 25 days

Experience QA's self-paced learning with interactive labs and AI-powered learning assistant.



Introduction  
to Software  
Development



Building  
Responsive Web  
Applications



Automation  
and Software  
Quality



Design and  
DevOps



Software  
Craft

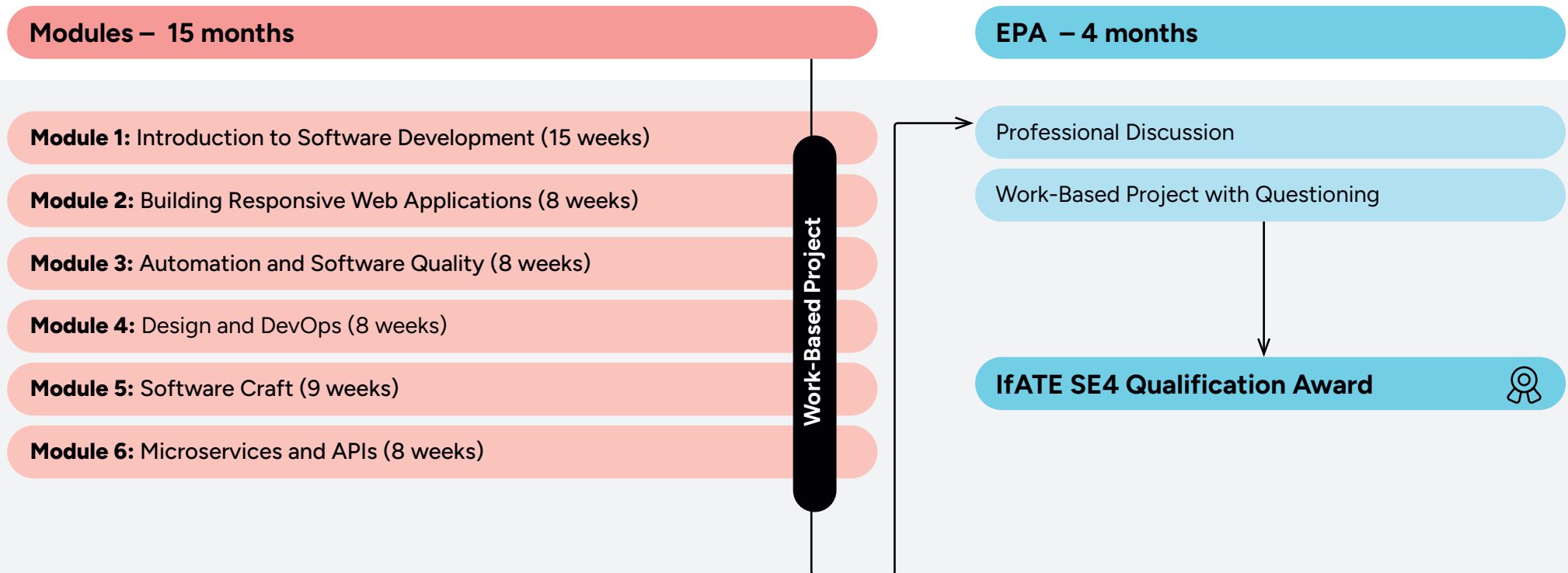


Microservices,  
and APIs

# Learner Journey

The Software Engineer programme integrates live and online workshops with self-paced learning, employing a guided discovery approach for individual learner contexts.

Learners are assigned a Digital Learning Consultant (DLC) for personalised coaching and support. These specialists ensure their successful progress, wellbeing, and readiness for assessments





# Modules

Following each module, learners apply their newly acquired knowledge and skills to ongoing work projects.

---

## 01

### Module 1:

#### Introduction to Software Development

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This accelerated bootcamp provides essential programming and software design skills for developing front and back-end software applications.

The hands-on labs enhance practical applications, collaboration, and security using a range of tools to effectively address real-world business challenges.

#### Topics:

- Programming Basics & UML
- Java Programming & Object-Oriented Programming (OOP)
- Algorithms & Data Structures
- Fundamentals of Agile & Kanban
- Software Patterns & Secure Development Practices
- Web Development (HTML, CSS & JavaScript)
- SQL, Data & Databases
- Java & SQL Integration
- Working with Git & GitHub
- APIs & Data Integration

**Live Instructor Sessions:** 12 Days

## 02

### Module 2:

#### Building Web Responsive Applications

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Delves into advanced web development techniques for creating responsive, dynamic applications that deliver seamless and engaging user experiences across all devices.

##### Topics:

- Responsive Development Practices (HTML5, CSS3)
- JavaScript Frameworks (Node.js, ReactJS)
- User Interface Development
- Coding & Logic
- Single-Page Applications (SPAs) & Routing
- Building a To-Do App in JavaScript

**Live Instructor Sessions:** 3 Days

## 03

### Module 3:

#### Automation and Software Quality

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Explores the critical role of testing in software development, focusing on both manual and automated testing using Selenium to ensure high-quality software products.

##### Topics:

- Test Strategy, Planning & Conducting Tests
- Selenium Overview & WebDriver
- Checking Test Results & Documenting Failures
- Analysing & Reporting Test Results
- Reviewing & Testing Non-Functional Aspects of Systems

**Live Instructor Sessions:** 2 Days

## 04

### Module 4:

#### Design and DevOps

---

Examines the concept of DevOps through essential practices and principles in modern software development, highlighting design and deployment strategies.

##### Topics:

- Agile & Waterfall Methodologies
- DevOps Culture
- Continuous Integration & Continuous Deployment (CI/CD)
- Build Management & Containerisation with Docker
- Jenkins Builds & Pipelines
- Application Deployment
- Software Development Lifecycle (SDLC)

**Live Instructor Sessions:** 3 Days

# 05

## Module 5: Software Craft

Refines core skills for advancing as a developer, focusing on testing, code analysis, identifying code smells, and maintaining coding standards.

### Topics:

- Version Control & CI/CD (Jenkins, SonarQube)
- Test-Driven Development (TDD) & Behaviour-Driven Development (BDD)
- Code Coverage & Refactoring
- Static Code Analysis (SCA) & Code Smells Identification
- Coding Standards & Best Practices
- Pair Programming

**Live Instructor Sessions:** 3 Days

# 06

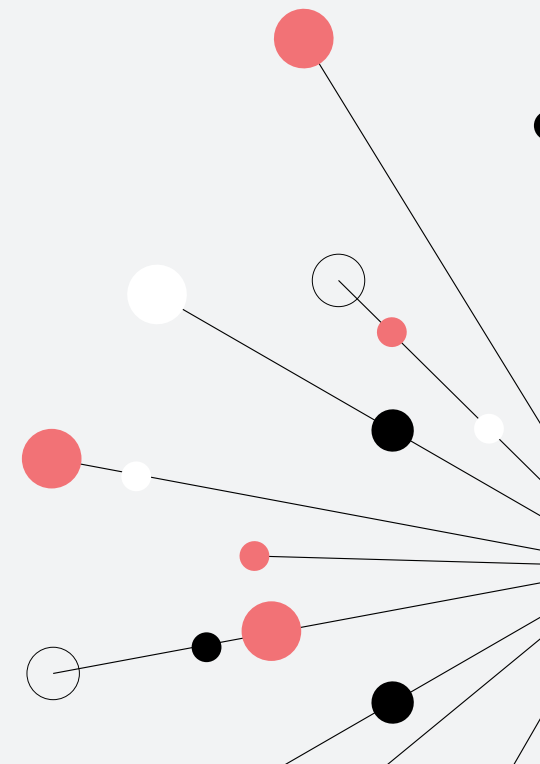
## Module 6: Microservices and APIs

Covers future-focused software development skills, including microservice architecture, API integration, and building a basic microservice app, highlighting key differences from monolithic systems.

### Topics:

- Microservices Architecture
- The Cloud
- RESTful APIs (AWS Lambda Usage & API Gateway)
- Development, Testing & Delivery with Docker
- ECS & Container Management
- AWS RDS & DynamoDB
- Deploying Serverless Applications

**Live Instructor Sessions:** 2 Days



# Tools and Technologies

## Programming Languages & Frameworks

- Java (SE)
- HTML
- CSS
- JavaScript
- React

## Testing

- Junit
- Selenium
- Maven

## App Support

- Eclipse
- Git

## Software & Databases

- SQL
- JDBC
- SQLite
- MongoDB

## Project Management & Collaboration

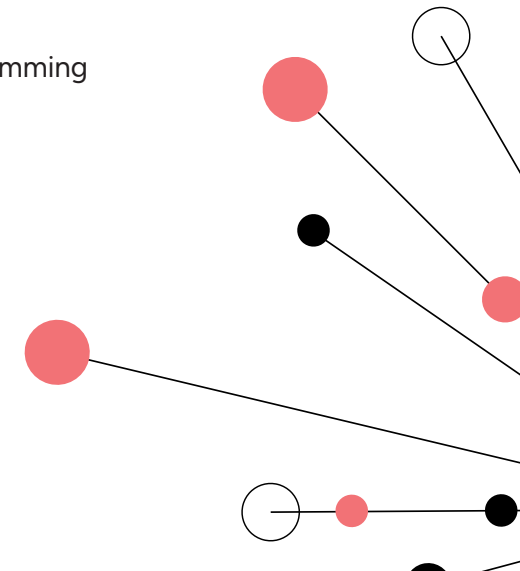
- Trello
- Jira
- GitHub
- GitHub Actions

## General Tools

- Windows OS
- MS Office

## Methodologies & Concepts

- Agile
- Scrum
- Waterfall
- Test-Driven Development (TDD)
- Behaviour-Driven Development (BDD)
- CI/CD
- DevOps
- Peer Programming



# End-Point-Assessment

We ensure all learners are fully prepared for their End-Point-Assessment (EPA) through our internal gateway process, maximising their success rates.

## Assessment criteria:

### 01

#### Knowledge

Ability to convey knowledge effectively.

### 02

#### Skills

Demonstrate practical skills with confidence.

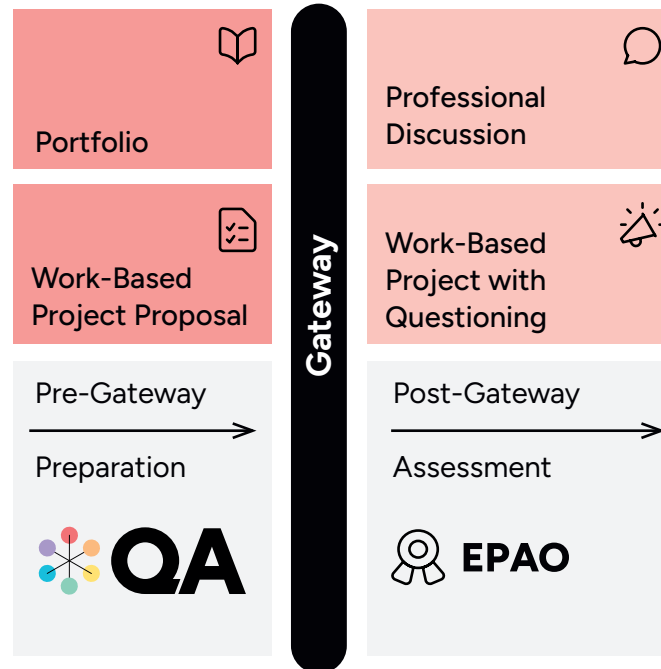
### 03

#### Behaviour

Exhibit professional workplace behaviour.

Explore the detailed assessment criteria within the **Software Developer standard.**

## EPA process:



**Professional Discussion:** Engage in a formal two-way conversation to showcase knowledge, skills, and behaviours.

#### Work-based Project with Questioning:

Demonstrate competence in developing a software solution that meets specifications through the full software development cycle, supported by a Q&A.



# Ready to partner with us?

## Let's talk:



0113 220 7150



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