

# Software Developer

## Apprenticeship Level 4

Finding talented software developers is a constant challenge in the digital technology sector. This new apprenticeship offers a fresh approach to sourcing and developing your own talent. It is based on a national standard that has been designed by industry professionals. The delivery approach and specific content for what the apprenticeship will deliver has been worked out with local sector employers in collaboration with Sheffield Digital.

The level is post A Level, equivalent to the first year of a degree, so the apprenticeship is suited to individuals who are leaving school or college but find they want to earn and learn rather than go to university, or individuals who drop out of university because they are ambitious to join the world of work, or individuals who want to retrain for a better career.

You will select your trainee from a pool of potential applicants to ensure that candidates have the right skills and attitudes. On the apprenticeship, your trainee will learn the fundamental skills and knowledge of software development but also how to work in a team and fulfil the broader requirements of being in a software development role. At the end, they should have the potential to be employed as a developer in your team.

### Quick Information:

#### New Apprenticeship Standard designed by employers for employers

**Sector:**

Relevant to all employment sectors

**Who is it for?**

New recruits and existing staff

**Start date:**

From Sept 2018

**Level:**

Level 4

**Duration:**

Typically 24 months

**How does it work?**

Learning takes place in the workplace with regular visits from a training facilitator (every 6-8 weeks), online support and weekly day release at College

**Content:**

Menu of content to match your business infrastructure

**Assessment:**

Portfolio, business project, employer reference and structured interview during and at the end of the programme

**Qualification:**

Software Developer Apprenticeship and a professional vendor certification

**Additional qualification:**

This apprenticeship is recognised for entry onto the register of IT technicians confirming SFIA Level 3 professional competence



### Key Areas of Study

Your trainee will cover essential knowledge, skills and behaviours on their programme. The full menu of options for what will be covered is outlined below.

| <b>Technical Competencies (Work-based learning)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                           |
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| <b>Logic:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Writes good quality code (Logic) with sound syntax in at least one language                                                                               |
| <b>Test:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Can test code and analyse results to correct errors found using either V-model manual testing and/or using unit testing                                   |
| <b>Problem solving:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Can apply structured techniques to problem solving, can debug code and can understand the structure of programmes in order to identify and resolve issues |
| <b>Data:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Can effectively link code to the database/data sets                                                                                                       |
| <b>Development lifecycle:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Can operate at all stages of the software development lifecycle, with increasing breadth and depth over time with initial focus on build and test         |
| <b>Deployment:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Can understand and utilise skills to build, manage and deploy code into enterprise environments                                                           |
| <b>Analysis:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Can understand and create basic analysis artefacts, such as user cases and/or user stories                                                                |
| <b>Design:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Can create simple data models and software designs to effectively communicate understanding of the program, following best practices and standards        |
| <b>User interface:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Can develop effective user interfaces for at least one channel                                                                                            |
| <p>In addition:</p> <ul style="list-style-type: none"> <li>• Can apply good practice approaches according to the relevant paradigm (for example, object-oriented, event-driven or procedural)</li> <li>• Can interpret and follow: <ul style="list-style-type: none"> <li>– software designs and functional/technical specifications</li> <li>– company defined 'coding standards' or industry good practice for coding</li> <li>– testing frameworks and methodologies</li> <li>– company team or client approaches to continuous integration, version and source control</li> </ul> </li> <li>• Can respond to the business environment and business issues related to software development</li> <li>• Can operate effectively in their own business's, their customers' and the industry's environments</li> <li>• Can apply the maths required to be a software developer (e.g. algorithms, logic and data structures)</li> </ul> |                                                                                                                                                           |

### **Technical Knowledge and Understanding (College and work-based learning)**

- Understands and operates at all stages of the software development lifecycle
- Understands the similarities and differences (taking into account positives and negatives of both approaches) between agile and waterfall software development methodologies
- Understands how teams work effectively to produce software and contributes appropriately
- Understands and applies software design approaches and patterns and can interpret and implement a given design, compliant with security and maintainability requirements
- Understands and responds to the business environment and business issues related to software development
- Understands and applies the maths required to be a software developer (e.g. algorithms, logic and data structures)

### **Underpinning Skills, Attitudes and Behaviours**

- Logical and creative thinking skills
- Analytical and problem solving skills
- Ability to work independently and to take responsibility
- Can use own initiative
- A thorough and organised approach
- Ability to work with a range of internal and external people
- Ability to communicate effectively in a variety of situations
- Maintain productive, professional and secure working environment

## **Qualifications**

Your trainee will study for and must achieve an Ofqual-regulated knowledge module and a vendor or professional qualification as follows:

### **Knowledge Module 1: Software Development Methodologies**

- Understand the software development lifecycle
- Understand the similarities and differences between software development methodologies
- Understand how to respond appropriately to the business environment and business issues related to software development
- Understand why teams must work effectively to produce software

### **Knowledge Module 2: Language**

- Understand software design approaches
- Understand how to interpret and implement a given design, compliant with security and maintenance requirements
- Understand how to apply the mathematics required to be a software developer

Vendor qualification for this module will be:  
Java or C#

## **Training, Tutoring and Assessment**

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The whole programme will take two years to complete, including the final assessment. Your trainee will mainly learn on the job with your support and coaching, but they will also undertake day release learning at college. They will cover the qualifications outlined above during these training weeks. The qualifications must be passed before the final assessment can be taken.

We will carry out joint reviews with you at regular intervals to discuss progress. You can use your normal performance management processes to monitor the progress of the trainee, provide feedback and guide development. Your trainee will be expected to keep a portfolio to track their learning and development throughout the apprenticeship.

Our specialist trained facilitator will visit regularly to offer both you and the apprentice support and to make sure that the apprenticeship is progressing well.

## **End Point Assessment**

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In conjunction with the College, you will be asked to formally sign-off that your trainee has met the minimum requirements for knowledge, skills and behaviours within the apprenticeship standard and confirm they are ready to move on to the final assessment, which will be measured as follows:

- **Portfolio:** Produced towards the end of the apprenticeship, the portfolio will contain evidence from real work projects that have been completed during the apprenticeship on the application of knowledge, competencies and behaviours detailed in the standard.
- **Project:** The apprentice will undertake a business-related project over a one-week period away from the day to day workplace.
- **Employer Reference:** This is your account of how the apprentice has performed in the workplace and how they have applied their knowledge, competencies and behaviours.
- **Structured Interview:** Exploring what has been produced in the portfolio and the project. The interview provides an opportunity for further evidence to be gathered and explored in more detail against any of the knowledge, competencies or behaviours.

For more information on the assessment for Software Developer Apprenticeship please see the full assessment plan in the Apprenticeship Standard documentation. We will arrange the End Point Assessment.

## **Apprentice Entry Requirements**

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This is likely to include five GCSEs (including English, Maths and a Science or Technology subject) and/or other relevant qualifications and experience.

## Future/Other Opportunities

This apprenticeship will hopefully lead to employment as a software developer in your organisation.

## More information

To find out more about the opportunities and financing of apprenticeships and to discuss your particular requirements, please email **employer@sheffcol.ac.uk** or call **0114 260 2600** to speak to one of our friendly employer advisors.

## Why choose The Sheffield College?

As one of the region's largest providers of apprenticeships, The Sheffield College is more than just your local provider; we deliver the dedicated support you need to source, train and get the best out of your apprentice.

We appreciate how difficult and time consuming it can be to recruit suitable staff. That's why we will source, shortlist and prepare candidates before you meet them.

We help you get the best deal by finding the right funding and we handle the paperwork to make the process of arranging an apprenticeship training programme as smooth as possible. Our employer partnership team, apprenticeship tutors and assessment staff are experts, and we invest time and money in training and upskilling them regularly so their knowledge is up-to-date and industry standard.

At The Sheffield College we go above and beyond; we know that every business is different and we help to develop apprentices who will meet the needs of your business.

## Get In Touch

**Email:**

employer@sheffcol.ac.uk

**Call:**

0114 260 2600

**Twitter:**

@sheffcol

**Facebook:**

facebook.com/thesheffieldcollege

**LinkedIn:**

linkedin.com/company/the-sheffield-college

