Apprenticeship Programme Guide

BSC (HONS) CYBER SECURITY TECHNICAL PROFESSIONAL

Degree Apprenticeship

Apprenticeship Standard: Cyber Security Technical Professional (Integrated Degree)

QA is one of the UK's leading tech talent and training organisations. Specialists in technology, we provide a comprehensive suite of talent and training services helping individuals and companies to be winners in the digital revolution.

WHO ARE WE AT QA DEGREE APPRENTICESHIPS?

We're passionate about supporting our learners in fulfilling their potential, arming them with the skills to achieve their career aspirations.

Working in partnership with universities, colleges and education specialists in the UK, we recruit, market and deliver a range of programmes from undergraduate to postgraduate degrees Level 7 qualifications.

3,000+
students studying with us and our partners

4
intakes throughout the year for Degree & Higher Apprenticeships

Providing **in-demand skills** in Cyber, IT, Software Development, Data, Digital Marketing, Project Management and AI

Helping you retain talent and **build capabilities** by supporting learner evolution from level 3 to 7

Blended learning that enables learners to develop further and deliver faster

Interactive portals, real time dashboards and **alerts** enable you to efficiently track learner progress

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INDUSTRY STATS

83% of senior financial decision makers polled agree that offering formal training beyond the basic functions of a job has a positive effect on people's performance at work – despite more than a quarter (26%) of businesses not offering any training in the last 12 months.

Currently, **nine in 10** organisations admit they have a shortage of digital skills.

Open University, 2019

Nearly **3.3 billion** of unspent apprenticeship levy has been returned to the UK Treasury.

Financial Times (ft.com)

90% of apprentices stay with the same employer after completing an apprenticeship.

National Apprenticeship Service (NAS) Data

Approximately **42%** of apprentice starts in 2022/23 were by learners aged 25 or over.

explore-education-statistics.service.gov.uk

PROGRAMME OVERVIEW

The BSc (Hons) Cyber Security Technical Professional Degree Apprenticeship is designed to enhance and accelerate cyber skills. It is a work-based learning programme that develops advanced understanding of cyber security issues and technology solutions.

It is a structured, research-rich learning programme that includes a range of learning experiences – including workshops and work-based activities. As a work-based programme, it supports the development of skills needed within an organisational context and is designed to deliver improvement to practice.

Why choose this course?

Northumbria University's Computer and Information Sciences Department is recognised by the NCSC for cyber security and has an international track record in all areas of digital forensics, AI, human-computer interaction, IoT and Big Data, ensuring content is contemporary, research-informed and practice-focused.

This Degree Apprenticeship equips learners to work in a range of computing, IT, and digital technology roles where cyber security plays a vital role.

This programme uses a range of different ways to learn. Work-based activities, digital learning and online resources develop learners' knowledge throughout the programme.

What is Professional Practice?

These are self-guided modules that allow learners to tailor the programme to the environment they work in. They are an opportunity to develop cyber security skills

Careers

The programme will also develop wider cyber security skills and management knowledge to strongly equip learners for careers in roles including (but not limited to):

· Cyber Risk Manager

· Cyber Risk Analyst

· Cyber Research Analyst

· Cyber Incident Manager

· Cyber Security Engineer

· Cyber Security Design Engineer

20% off-the-job (OTJ) training

During the apprenticeship, 20% of the learner's working hours should be spent on completing work/tasks contributing to the apprenticeship.

How exactly the 20% OTJ training is executed in real time will differ for each learner and each employer dependent on circumstances and needs, but in general it can include:

· Completing work on knowledge modules

· Completing work towards a professional qualification

· Shadowing or attending mentoring sessions

· Completing in-house training activities relevant to the programme

· Attending module workshops

· Coaching/mentoring

· Independent research

BSc (Hons) Cyber Security Technical Professional	
Level	Level 6 - undergraduate degree
Degree award	BSc (Hons) Cyber Security Technical Professional
Apprenticeship standard	Cyber Security Technical Professional (Integrated Degree)
Degree awarding body	Northumbria University
Apprenticeship Certificate	Awarded by ESFA
Tuition fee	Fully funded by employer through the Apprenticeship Levy*
Entry requirements	120 UCAS Tariff points - you can check points using the UCAS Tariff calculator
English language requirements	GCSE English at Grade C/4, or equivalent
Mode of study	Part-time, blended and work-based learning
Duration	48 months + End Point Assessment (EPA) (typically 6 months)
Assessment methods	Coursework and work-based portfolio, End Point Assessment
Start date	October, January, April, July
Locations	Real-time live online learning**

*For eligible businesses (refer to page 16)

**Face-to-face learning dependent upon learner numbers and location. Visit the webpage or enquire for more information.

LEVEL 4 MODULES

All modules are core and worth 20 credits.

Computer Systems and Digital Logic

In this module, learners will develop knowledge and skills in computer architecture, digital logic, machine-level representation of data and in testing, and how to debug programs in low level language. They will subsequently be able to apply this knowledge and skill in their own context and use this to solve problems and recommend potential future improvements.

Algorithms and Mathematics

In this module, learners will develop a basic knowledge of algorithms and mathematics which can then be applied in the cyber security domain. Algorithms are the building block of any software and as such skills to understand, design and to develop algorithms are vital for IT professionals including cyber security professionals. They will subsequently be able to apply this knowledge and skill in their own context as a cyber security technical professional.

Software Development

This module is designed to provide an introduction to the practical aspects of the development of a software application following well-defined processes and techniques. As such learners will gain experience in the software development cycle, including requirement analysis, design, and implementation, and also learn to exploit implementation support technologies.

Operating Systems and Server Administration

The operating system acts as an interface between the user, application programs and computer hardware and is therefore considered as the most important component of computer systems. It performs a variety of functions including process management, memory management, file management, resource management, and security management.

This module is designed to develop learners introductory knowledge and skills in operating system security and server administration. As such the module will provide an opportunity for learners to develop the skills and knowledge to understand the operating system behaviour and its functions.

Human Computer Interaction and Cyber Security

In this module, learners will develop an understanding of key theories, design issues and topics in Human Computer Interaction (HCI) and then apply them in the context of developing usable, interactive and secure computer systems. They will also develop prototypes in accordance to key usability standards and user needs.

Professional Practice 1 (year-long module)

Cyber Security is a wide field in which professionals can find themselves working within a number of different roles and specialisms, each requiring a specific technical skillset. Professional Practice 1 is an opportunity for learners to tailor the learning conducted within Level 4 of their programme towards acquiring those skills that will help them develop towards becoming a Cyber Security Technical Professional.

Working with the module academic team and their employer, the learner will conduct a skills analysis to identify relevant training that can be undertaken. This training can take a number of forms, be it:

- Technical training delivered within the workplace or class environment
- Structured online learning
- A mini research project
- Or, another appropriate form approved by the academic team

Following the completion of the training, the acquired skills will be focused on a specified project or business challenge.

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LEVEL 5 MODULES

All modules are core and are worth 20 credits, unless otherwise stated.

Computer Security

This module will develop learners knowledge and skills in computer security. Specifically, this module aims to provide learners with an overview of computer security techniques and fundamental knowledge of countermeasures. They will learn relevant cutting-edge computer security principles, models and terminologies required to secure modern computers.

Web and Mobile Application Security

This module is designed to develop fundamental knowledge and skills in web application and mobile security concepts. Learners will gain insights into different web and mobile security threats such as cross-site scripting (XSS), SQL injection, session hijacking. They will also learn how to apply essential security techniques to test and protect web and mobile applications from these attacks.

Network Security

This module is designed to develop learners knowledge and skills in network security principles, tools and techniques to proactively secure the perimeter against adaptive threat vectors. A blended learning approach of theory and practical explications will be used throughout the delivery.

Data Science and Cyber Security

The collection and use of large and diverse datasets provide opportunities to businesses and organisations to gain useful insights for strategic decision making. Here learners develop fundamental knowledge and skills in big data analysis for cyber security using algorithms and statistical analysis. As such they will develop the skills required for maintaining data, efficient querying and accessing the data and adding semantic interoperability to meet cyber security objectives such as investigation and building intelligence and decision making.

Ethical Hacking

Ethical hacking concerns with testing an IT System in order to determine security vulnerabilities and weaknesses. The overall aim of ethical hacking is to ensure that an organisation's information security measures are up-to-date to combat any security threats. Learners will develop fundamental knowledge, understanding and skills in Ethical Hacking, so they can apply this knowledge in their own context, and subsequently analyse the implementation and recommend potential future improvements.

Professional Practice 2 (year-long module)

This module is designed to develop learners self-guided learning skills and knowledge and develop their own professional development needs in the context of their Degree Apprenticeship discipline. Professional Practice 2 builds on the skills developed so far to provide an opportunity for learners to tailor the learning conducted within Level 5 of their programme towards acquiring those skills that will help them develop towards becoming a Cyber Security Technical Professional.

LEVEL 6 MODULES

All modules are core and are worth 20 credits, unless otherwise stated.

Digital Forensics and Incident Handling

Learners will develop critical knowledge and skills in incident handling and digital investigations so as to exhibit awareness of the legal, ethical and professional implications and responsibilities for the digital investigator. As such they will learn to professionally acquire and analyse digital evidence utilising effective tools and techniques.

Information Security Management

This module develops learners' critical knowledge and skills in Information Security Management principles and techniques that underpin the management of an organisation's information assets for which it is responsible. In doing so they will critically analyse the key concepts, theories, standards and frameworks of information security management, including risk assessment, people, resources, assets and processes to help organisations reduce the likelihood of a data breach occurring and ways to limit their liabilities.

Cyber Offensive Defence

This module is designed to develop learners critical knowledge and skills in Cyber Offensive Defence using Penetration Testing. They will subsequently be able to apply this knowledge and skill in their own context, and critically analyse its implementation, recommending potential future improvements.

Cyber Security Project (30 credits)

This final applied research project is designed to present learners critical knowledge, academic ability and skill in the field of Cyber Security. This will take the form of an individually negotiated project. Successful completion of the project is an essential requirement for their degree award.

They will learn how to engage with and critically review research literature and from this to develop relevant research objectives and questions as part of a research proposal. In addition, they will learn about, and be able to evaluate, different research methodologies and project management approaches open to their final project.

Professional Practice 3 (year-long module)

Professional Practice 3 is an opportunity for learners to tailor the learning conducted within Level 6 of their programme towards acquiring the specialist skills that will help them develop towards becoming a Cyber Security Technical Professional.

Cyber Security Technical Professional End Point Assessment (10 credits)

The End-Point Assessment (EPA) is the culmination of the learners' apprenticeship and gives them the opportunity to demonstrate that they have attained the skills, knowledge and behaviours set out on the Cyber Security Technical Professional standard. Passing the EPA is a requirement in order to complete the degree programme. See the website for further details on the EPA.

ENTRY REQUIREMENTS

Admission onto a Degree Apprenticeship can only take place if applicants are currently employed and once their employer has a training agreement in place with QA.

Applicants must be employed in a relevant role, with the opportunity to apply theoretical concepts directly to their personal and professional work experience.

Standard entry

To be eligible to study for this programme typically candidates will have achieved a Level 3 qualification in a relevant STEM subject. This may include 2 A Levels, BTEC, Diplomas, a related Level 3 Advanced Apprenticeship, or equivalent qualifications.

Non-standard entry

Relevant qualifications and/or work experience will be taken into consideration where the applicant has the judged potential to benefit from the programme.

For more information, visit:

Degree Apprenticeships | QA

English language and Maths requirements

Learners must be able to evidence Level 2, or equivalent, English and Maths before starting their End-Point Assessment.

Learners must not hold an existing qualification at the same or higher level than this apprenticeship in a similar subject.

QA DELIVERY MODEL

Our Degree Apprenticeship delivery methods focus on combining part-time study with work-based learning – providing learners with the right skill sets to advance their careers.

Throughout the programme, learners are also supported by an individual Skills Coach, who helps with applying learning to the workplace. Our Academic Community of Excellence (ACE) Team is also available to help on academic matters outside of the classroom.

As Northumbria University students, learners will also be able to access the full range of online library and learning resources and wider support of the university.

Contact hours per module

24 hours - Level 4

18 hours - Level 5

12 hours - Level 6

Approximate learner independent study time per module

120 hours

Work-based learning time per module

25 hours

For work-based learning, including CPD and work-placed coaching.

Tutor guided independent learning per module

19 hours

LEARNER SUPPORT

The ACE Team

With its huge array of experience in providing guidance to learners, our highly qualified Academic Community of Excellence (ACE) Team, helps learners with writing in academic styles, reading smarter rather than longer, referencing and citing accurately and much more.

Ace Team support:

· One-to-one tutorials

· Online workshops

· Self-access learning materials

Find out more:

Degree Apprenticeships | QA

Digital Learning Consultants

Throughout their degree apprenticeship, learners will be supported by one of our DLCs, who will help with supporting work-based learning activities, reviewing progress and helping them learners their End-Point Assessment which is the final stage of the degree apprenticeship programme.

Workplace Mentors

A Workplace Mentor is appointed by the employer and is typically someone also employed within the business.

The Workplace Mentor will be familiar with the Apprenticeship programme and its workplace requirements.

They will facilitate the workplace learning opportunities to enable the learner to meet the requirements of the Apprenticeship standard.
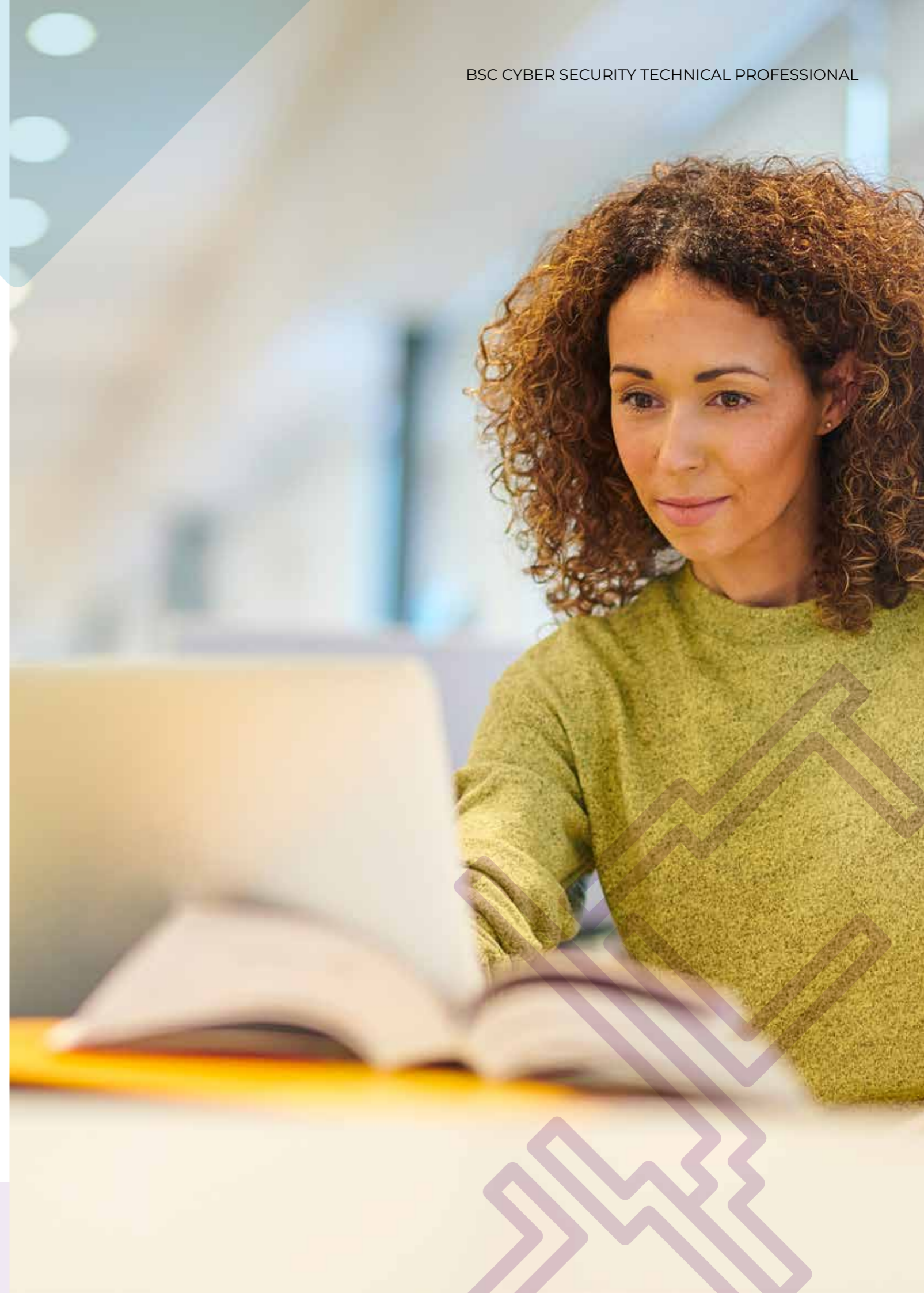
FEES AND FINANCE

There is no cost to the learner as a Degree apprentice. Degree and Higher Apprenticeships are fully funded by the Apprenticeship Levy through the learner's employer.*

If you're an employer, the total funding for the programme is £27,000 for programmes commencing from September 2023

Travel expenses to travel to QA centres should be covered by the employer

All textbooks are provided free of charge as e-books. Any learners wishing to use paper copies will need to pay for these themselves

What about non-levy paying organisations?

Employers that do not accrue their own levy funds still have access to funding but in a different way. Employers are required to cover 5% of the negotiated price of delivery directly to the training provider.

This is often paid in single up front payment. Further conditions apply.

*For eligible businesses

END-POINT ASSESSMENT (EPA)

What is it?

End Point Assessments (EPA) are designed to ensure a learner can prove they have the required knowledge and behaviours to demonstrate competency in their respective job role. EPA requirements are different for each standard. Each apprenticeship has its own assessment plan; details of each specific EPA are within the assessment plan.

EPAs can only start once the employer has agreed that the learner is consistently working at or above the level set out in the standard. This is a mandatory requirement of all apprenticeships along with the evidence of achievement of Level 2 in Maths and English (GCSE/functional skills). This point is known as 'Gateway' and marks the end of the on-programme activities and the start of the EPA.

Who attends the EPA?

End Point Assessments are conducted in line with EPA Plan requirements and EPA Organisation (EPAO) quality assurance procedures. This will typically be the apprentice and the Independent Assessor (IA), but may also include further independent assessors or EPAO appointed representatives. Learners will be informed ahead of the EPA regarding specific arrangements.

What happens at the EPA?

Again, it depends on the assessment plan but it is common to see a presentation with Q&A, an interview, a professional discussion and occasionally work tasks.

The assessment can take between one hour and two weeks, the assessment plan will provide further information.

Before completing their EPA, learners must have:

- Passed all the other modules in this programme
- Agreement from their employer that they are ready for the EPA
- Completed the e-portfolio
- Completed Level 2 English and Maths qualifications (if not already achieved)
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HOW TO APPLY

To apply for this or another Degree or Higher Apprenticeship course, please complete our enquiry form here: Degree Apprenticeships | QA

One of our account managers will be in touch to discuss your needs and to introduce the onboarding process.

Launch your employees on their learning journey and watch them soar.

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FOR MORE INFORMATION, PLEASE CONTACT

0333 060 7701
qa.com/contact

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Apprenticeships

SKILLS FOR LIFE