Apprenticeship Programme Guide

MSc DIGITAL AND TECHNOLOGY SPECIALIST

Degree Apprenticeship

APPRENTICESHIP STANDARD: DIGITAL AND TECHNOLOGY SOLUTIONS SPECIALIST (INTEGRATED DEGREE)

Degree Apprenticeship Standard: ST0482

QA.com

2023/24

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?

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

CONTENTS

3

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 MSc Digital and Technology Specialist Degree Apprenticeship is designed to enhance existing skills through engaging in a work-based learning programme to develop an understanding of Computing, IT and Digital Technology.

Alongside this, the programme develops digital leaders via modules and teaching competencies in technical leadership, business and technology.

Learners will choose a specialist pathway to follow in areas including:

- Software Engineering
- Data and Analytics
- Enterprise Architecture
- Cyber Security
- IT Ops Management (Cloud Computing)
- IT/Digital Futures (DevOps)

Each pathway will have a combination of research-led specialist modules, and Professional Practice modules where learners will focus on demonstrating their understanding by applying contemporary research into their current practice.

Combining technical and academic study with on-the-job experience enables learners to build a holistic appreciation of their selected technical discipline.

This programme has been designed to provide professional recognition from bodies including the BCS (British Computing Society).

Why choose this course?

With this tech Masters apprenticeship programme, learners are flanked by the best. On one side, QA, a learning provider with years of training experience, and on the other, Northumbria University, a research-rich, business-focused, professional university with a global reputation for academic excellence.

Northumbria University's Computer and Information Sciences Department has an international track record in all areas of cyber security, digital forensics, artificial intelligence, human-computer interaction, IoT and Big Data and information sciences ensuring learning is contemporary, research-informed and practically focused.

What is Professional Practice?

Whilst undertaking the MSc Digital and Technology Specialist Programme learners will undertake Professional Practice modules that provide an opportunity to tailor their pathway specific content to an area of relevance for them.

These modules are formed of two main components:

- Professional Training - Sourced from a combination of Cloud Academy Training and approved QA Learning courses, dependent on their pathway.

- Academic Development - Learners conduct reflective practice as a means of evaluating the impact of the learning that they have undertaken and as a means of further exploring their professional development plan.

Careers

The programme prepares learners for careers in a range of computing, IT and digital technology roles depending on their chosen pathway within the programme. These include, but are not limited to:

- Software experience lead
- Data science specialist
- Enterprise architect
- IT operations management specialist
- Cyber security forensics specialist
- Digital futures leader
- Big data analyst
- Senior software developer

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 Digital and Technology Specialist	
Level	Level 7 – postgraduate degree
Degree award	MSc Digital & Technology Specialist: Software Engineering, Data & Analytics, Enterprise Architecture, Cyber Security, IT/Ops Management - Cloud Computing, IT/Digital Futures - DevOps
Degree awarding body	Northumbria University
Apprenticeship standard	Digital and Technology Solutions Specialist (Integrated Degree)
Apprenticeship certificate	Awarded by ESFA
Tuition fee	Fully funded by employer through the Apprenticeship Levy*
Entry requirements	2:2 (second class) honours degree in a related discipline, or relevant professional qualifications and/or work experience
English and Maths requirements	GCSE English and Maths at Grade C/4, or equivalent
Mode of study	Part-time, blended and work-based learning
Duration	24 months + End Point Assessment (EPA) (typically 6 months)
Assessment methods	Coursework, assignments and final End-Point Assessment
Start dates	October, January, April and July
Locations	Real-time live online learning**

*For eligible businesses (refer to page 18)

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

MODULES

All modules are worth 20 credits unless otherwise stated.

COMMON MODULES

Business and Technology	Technical and Digital Leadership	Major Postgraduate Project (60 credits)

PATHWAY MODULES

Software Engineering	Data and Analytics	Cyber Security	Enterprise Architecture	IT Ops Management (Cloud Computing)	IT/Digital Futures (DevOps)
Software Engineering Principles	Data and Analytics Principles	Cyber Security Principles	Enterprise Architecture Principles	Cloud Operations Principles	DevOps Principles
Software Engineering Professional Practice I	Data and Analytics Professional Practice I	Cyber Security Professional Practice I	Enterprise Architecture Professional Practice I	Cloud Operations Professional Practice I	DevOps Professional Practice I
Software Engineering Professional Practice II	Data and Analytics Professional Practice II	Cyber Security Professional Practice II	Enterprise Architecture Professional Practice II	Cloud Operations Professional Practice II	DevOps Professional Practice II
Open Professional Practice	Open Professional Practice	Open Professional Practice	Open Professional Practice	Open Professional Practice	Open Professional Practice

Please note optional modules are subject to a minimum cohort size.

The modules learners will study will depend on their chosen specialist pathway.

There are three core modules which are studied by all learners:

- Business and Technology
- Technical and Digital Leadership
- Major Postgraduate Project

These modules will then combine with the pathway specific modules detailed on pages 10 - 13.

COMMON MODULES

Business and Technology (20 credits)

In this module, learners will develop critical knowledge and skills in Innovation in Business and Technology. Typical topics covered in the module include; understanding the typology of innovation, how firms leverage internal and external resources to compete in the digital environment, and how to plan for innovation in your organisation. Specifically, this module prepares learners to think about innovation activities in the context of their IT specialism as well as the wider organisation and business ecosystem.

Technical and Digital Leadership (20 credits)

In this module, learners will develop critical knowledge and skills in Technical and Digital Leadership. Typical topics covered in the module include; understanding the art and science of leading engineering and technology organisations, how to leverage a combination of individual capabilities and technology management practices and the tools to deliver business impact and performance. Specifically, this module addresses a critical gap in the learning and career development of future leaders operating in complex technological environments.

Major Postgraduate Project (60 credits)

In this module, learners will engage in a major applied research project, which demonstrates their ability to:

- Undertake an extensive academic literature review
- Develop evaluative skills and research outcomes in Digital & Technology Solutions
- Apply them in their workplace context
- Critically analyse the implementation and recommend potential future improvements.

The module begins with a coverage of the research-oriented skills required to undertake such a project, before the direction of the project is tailored towards learners' specific workplace requirements.

PATHWAY SPECIFIC MODULES

Please check the following pages for the pathway specific modules:

SOFTWARE ENGINEERING PATHWAY MODULES

All modules are worth 20 credits unless otherwise stated.

COMMON MODULES

Business and Technology	Technical and Digital Leadership	Major Postgraduate Project (60 credits)

PATHWAY MODULES

Software Engineering Principles	Software Engineering Professional Practice I	Software Engineering Professional Practice II	Open Professional Practice

Software Engineering Principles

In this module, learners will develop critical knowledge and skills in Software Engineering.

Typical topics covered include; software life cycle models, agile development, continuous integration and source control, organising development projects, object-oriented modelling and test-driven development - all areas considered to be essential for a Software Engineering professional.

Software Engineering Professional Practice I & II

A key element of a learner's journey towards becoming a Digital and Technology Specialist is ongoing skills development.

For these two core modules learners engage in a recognised CPD programme relating to their specialist pathway and to reflect upon how such learning can be embedded back into the workplace. To enable this, we consider the following:

- Identification of relevant skills need and subsequent CPD programme, embedded into the module delivery

- Design and presentation of a Professional Practice Log using appropriate reflective framework

- Strategies to embed learning from CPD into practice

Open Professional Practice

This module offers learners a further opportunity to explore a recognised CPD programme relating to their specialist pathway.

DATA & ANALYTICS PATHWAY MODULES

All modules are worth 20 credits unless otherwise stated.

COMMON MODULES

Business and Technology	Technical and Digital Leadership	Major Postgraduate Project (60 credits)

PATHWAY MODULES

Data and Analytics Principles	Data and Analytics Professional Practice I	Data and Analytics Professional Practice II	Open Professional Practice

Data and Analytics Principles

In this module, learners will develop critical knowledge and skills in Data Analytics.

Typical topics covered include; Scalable data management architectures, data-parallel problems in e-science, patterns and technology for exploiting cloud infrastructure on data-parallel problems, graph databases and their application to social media analysis, and scalable real-time data processing - all areas considered to be essential for a data analytics professional.

Data and Analytics Professional Practice I & II

A key element of a learner's journey towards becoming a Digital and Technology Specialist is ongoing skills development.

For these two core modules learners engage in a recognised CPD programme relating to their specialist pathway and to reflect upon how such learning can be embedded back into the workplace. To enable this, we consider the following:

- Identification of relevant skills need and subsequent CPD programme, embedded into the module delivery

- Design and presentation of a Professional Practice Log using appropriate reflective framework

- Strategies to embed learning from CPD into practice

Open Professional Practice

This module offers learners a further opportunity to explore a recognised CPD programme relating to their specialist pathway.

CYBER SECURITY PATHWAY MODULES

All modules are worth 20 credits unless otherwise stated.

COMMON MODULES

Business and Technology	Technical and Digital Leadership	Major Postgraduate Project (60 credits)

PATHWAY MODULES

Cyber Security Principles	Cyber Security Professional Practice I	Cyber Security Professional Practice II	Open Professional Practice

Cyber Security Principles

In this module, learners will develop critical knowledge and skills in Cyber Security.

Typical topics covered include; developing appropriate security policies and network architectures to minimise the threats from network intrusion, producing strategies to minimise risks of security breaches in a range of network environments, analysing the shortcomings of a range of security strategies, techniques used to penetrate a web application, assessing the different types of threat posed by different classes of hacker and by different categories of malware, applying the principles of key cryptography and message digests, providing appropriate access controls and authentication techniques at different levels.

Cyber Security Professional Practice I & II

A key element of a learner's journey towards becoming a Digital and Technology Specialist is ongoing skills development.

For these two core modules learners engage in a recognised CPD programme relating to their specialist pathway and to reflect upon how such learning can be embedded back into the workplace. To enable this, we consider the following:

- Identification of relevant skills need and subsequent CPD programme, embedded into the module delivery

- Design and presentation of a Professional Practice Log using appropriate reflective framework

- Strategies to embed learning from CPD into practice

Open Professional Practice

This module offers learners a further opportunity to explore a recognised CPD programme relating to their specialist pathway.

ENTERPRISE ARCHITECTURE PATHWAY MODULES

All modules are worth 20 credits unless otherwise stated.

COMMON MODULES

Business and Technology	Technical and Digital Leadership	Major Postgraduate Project (60 credits)

PATHWAY MODULES

Enterprise Architecture Principles	Enterprise Architecture Professional Practice I	Enterprise Architecture Professional Practice II	Open Professional Practice

Enterprise Architecture Principles

In this module, learners will develop critical knowledge and skills in Enterprise Architecture.

Typical topics covered include; business resilience and requirements: organisation-wide solutions identification and quality maintenance of agile systems development, data architecture: the design and implementation of solution architecture for database administration, infrastructure: design and planning for hardware and infrastructure, considering flexibility and scalability, risk assessment of IT systems: network, digital-assets infrastructure and information security plus architecture implementation, change management and organisational governance.

Enterprise Architecture Professional Practice I & II

A key element of a learner's journey towards becoming a Digital and Technology Specialist is ongoing skills development.

For these two core modules learners engage in a recognised CPD programme relating to their specialist pathway and to reflect upon how such learning can be embedded back into the workplace. To enable this, we consider the following:

- Identification of relevant skills need and subsequent CPD programme, embedded into the module delivery

- Design and presentation of a Professional Practice Log using appropriate reflective framework

- Strategies to embed learning from CPD into practice

Open Professional Practice

This module offers learners a further opportunity to explore a recognised CPD programme relating to their specialist pathway.

IT OPS MANAGEMENT (CLOUD COMPUTING) PATHWAY MODULES

All modules are worth 20 credits unless otherwise stated.

COMMON MODULES

Business and Technology	Technical and Digital Leadership	Major Postgraduate Project (60 credits)

PATHWAY MODULES

Cloud Operations Principles	Cloud Operations Professional Practice I	Cloud Operations Professional Practice II	Open Professional Practice

Cloud Operations Principles

In this module, learners will develop critical knowledge and skills in Ops Management (Cloud).

Typical topics covered include; An introduction to the Cloud and Cloud Computing; Virtualisation at both the Desktop and Server levels; Common cloud types which include SaaS, PaaS and IaaS; Benefits and disadvantages of cloud computing; Security considerations with respect to the Cloud; Managing resource consumption in the Cloud; Storage and archiving in the Cloud and Creating scalable deployments.

Cloud Operations Professional Practice I & II

A key element of a learner's journey towards becoming a Digital and Technology Specialist is ongoing skills development.

For these two core modules learners engage in a recognised CPD programme relating to their specialist pathway and to reflect upon how such learning can be embedded back into the workplace. To enable this, we consider the following:

- Identification of relevant skills need and subsequent CPD programme, embedded into the module delivery
- Design and presentation of a Professional Practice Log using appropriate reflective framework
- Strategies to embed learning from CPD into practice

Open Professional Practice

This module offers learners a further opportunity to explore a recognised CPD programme relating to their specialist pathway.

IT/DIGITAL FUTURES (DEVOPS) PATHWAY MODULES

All modules are worth 20 credits unless otherwise stated.

COMMON MODULES

Business and Technology	Technical and Digital Leadership	Major Postgraduate Project (60 credits)

PATHWAY MODULES

DevOps Principles	DevOps Professional Practice I	DevOps Professional Practice II	Open Professional Practice

DevOps Principles

In this module, learners will develop a critical knowledge and skills in DevOps.

Typical topics covered include; use of agile and other development processes and methodologies, how to reconcile demand for an increased rate of production releases from application and business unit stakeholders, virtualised and cloud infrastructure from internal and external providers, alongside data centre automation and configuration management tools - all areas considered to be essential for a DevOps professional.

DevOps Professional Practice I & II

A key element of a learner's journey towards becoming a Digital and Technology Specialist is ongoing skills development.

For these two core modules learners engage in a recognised CPD programme relating to their specialist pathway and to reflect upon how such learning can be embedded back into the workplace. To enable this, we consider the following:

- Identification of relevant skills need and subsequent CPD programme, embedded into the module delivery
- Design and presentation of a Professional Practice Log using appropriate reflective framework
- Strategies to embed learning from CPD into practice

Open Professional Practice

This module offers learners a further opportunity to explore a recognised CPD programme relating to their specialist pathway.

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 2:2 (second class) honours degree in an appropriate Computing, Technology or Engineering discipline

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.

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.

Find out more:

Degree Apprenticeships | QA

DELIVERY MODEL

Our 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 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 for standard modules (8x 3 hour live online workshops)
- 12 hours for Professional Practice modules (4x 3 hour live online workshops)

Some modules may vary from this where other modes of contact are appropriate

Learner independent study time per module

Approximately 20 hours per week throughout the programme

Work-based learning time per module

Learners spend 80% of their time in the programme on the job, actively applying what they've learned right away

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.
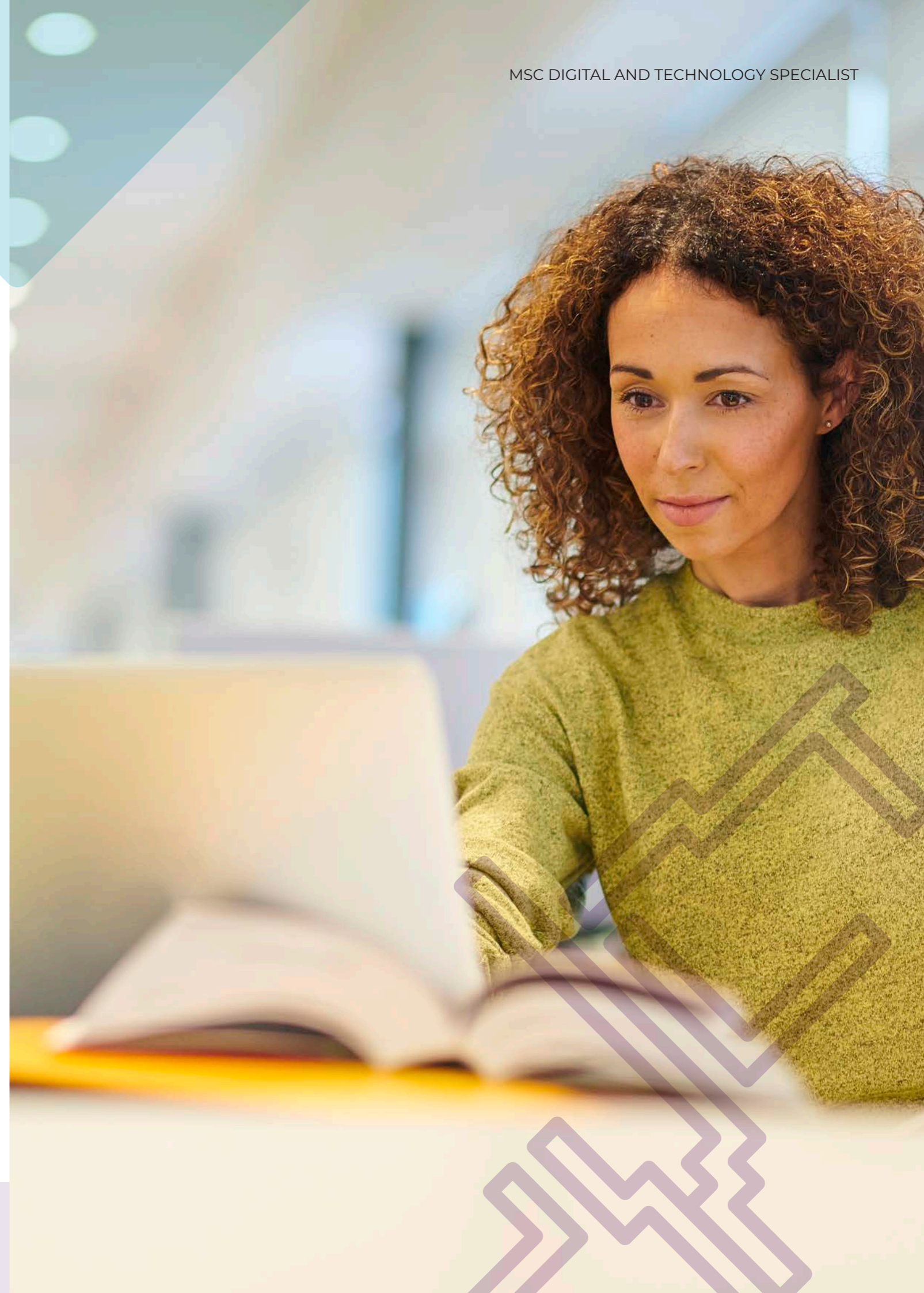
FEES AND FINANCE

There is no cost to the learner as a degree apprentice. Degree 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 £21,000.

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 (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.

The End-Point Assessment (EPA) Gateway:

- The employer must be happy the learner is working at or above the occupational Standard

- Learners must have completed all pre-gateway elements within their Degree Apprenticeship and be able to evidence Level 2 English and Maths

- Assessment includes a report on the work-based project, presentation and an interview

Support is available through our Skills Coaches and ACE Team who help prepare learners.

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.

FOR MORE INFORMATION, PLEASE CONTACT

0333 060 7701
qa.com/contact

Funded by
Department for Education

Funded by
Education & Skills Funding Agency

matrix

Apprenticeships

SKILLS FOR LIFE