



BSc (Hons) Digital & Technology Solutions

About this course

Course overview

This programme is delivered by QA and awarded by the University of Roehampton

[Download Programme Handout](#)

For learners applying to begin their programme in January: QA has two primary objectives during this rapidly evolving period regarding Coronavirus (Covid-19). The first is to ensure the welfare of our learners and staff, and the second is to ensure continuity and access to learning. In line with the sector as a whole and its response to Covid-19, if necessary, we will implement online teaching for this programme to allow you to begin your programme this January.

Funded by



Education & Skills
Funding Agency



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European
Social Fund

PLEASE NOTE: To be eligible for one of our Degree Apprenticeship programmes, learners must:

- (1) be **currently in full-time employment** and based in the UK
- (2) be interested in completing a Degree Apprenticeship with their **current employer**

This Professional Degree Apprenticeship is designed to produce future Digital and Technology Solutions Professionals and Leaders.

It has been awarded the Tech Industry Gold Accreditation by TechSkills, an organisation that brings together employers and universities to create highly skilled digital graduates.

The Digital and Technology Solutions Professional Degree Apprenticeship blends online learning, face-to-face workshops and on-the-job experience to transform learners into highly skilled tech professionals. The Degree Apprenticeship is available in four specialisms:

- Network Engineer
- Software Engineer
- IT Consultant
- Data Analyst

This programme develops core technical skills, knowledge and behaviours for the development of innovative digital solutions.

Further specialism modules offer opportunities to develop technical areas of relevance to the learners' roles.

Who it's a good fit for?

- New staff focussing on a plan to pursue a career associated with the technical department of the business
- Existing staff wishing to expand their skills and career together with gaining academic skills and qualifications while studying to degree level
- Existing staff that would benefit from a comprehensive personal development plan to advance their skills to a higher level

As part of their programme learners will complete:

- Fourteen learning knowledge modules teaching theory and practical application. These are primarily taught online and are supported by classroom training workshops. Five modules are taught at level 4, five at level 5 and four at level 6

- Work-based portfolios & projects will be completed at work, over the course of the programme to demonstrate practical abilities.

Microsoft Azure Certification

As part of the professional practice, learners will be able to access Cloud Academy resources which will prepare them for taking official Microsoft certifications.

An example route of this, for Data Analysts, would be for learners to complete the Microsoft Azure Fundamentals course (AZ-900) in Level 4 and then the Microsoft Data Engineering on Microsoft Azure (DP-203) at level 5. Completion of both these exams would result in the learners completing the Microsoft learning journey of Microsoft Certified Azure Data Engineer Associate.

At Level 6 there will be additional Microsoft preparation content available if the learner and employer feel that there is a specific need.



[Download Programme Handout](#)

Careers

The Programme provides academic qualification and professional experience leading to a range of key tasks and sector-leading roles as:

- Software Developer
- Software Engineer
- Software Tester
- IT Project Manager
- IT Consultant
- Network Engineer
- Cyber Security Analyst
- Database Specialist

- Data Analyst
- Systems Designer

Previous learners on this programme have been in leadership roles for companies such as Vodafone, BT, Cisco, Accenture, British Airways, to name just a few.

Once learners have completed the Degree Apprenticeship, they will be a highly competent and knowledgeable member of their organisation who has achieved a BSc (Hons) Degree Apprenticeship in Digital and Technology Solutions from the University of Roehampton.

Modules

All modules are core and worth 20 credits unless otherwise stated. The specialist modules are specified in the titles.

Level 4

Technology in the Organisational Context

This module aims to develop core knowledge concerning technology and its application within organisations and serves to expose the complexity of issues when faced with rapidly developing technologies and the resultant impacts on business practice

Software Engineering Fundamentals

This module is an introduction to the fundamentals of Software Engineering covering the basics of programming and the systems development process. Taking an idea through initiation, analysis, design, build, test, implementation and support, to deliver value to the customer or business.

Data Communications & Network Security

This module will introduce the basics of data communications and networks, covering network protocols and architectures. The module will also introduce students to modern networking technologies, including protocol layering and network security measures.

Professional Practice and Portfolio Development 1

In this module, learners will develop self-guided skills and knowledge related to their professional development needs, and the context in which they are working. Digital Technology is a field in which professionals can find themselves working within a number of different contexts and specialisms, each requiring a specific skillset.

Professional Practice 1 is an opportunity for learners to tailor the learning conducted within Level 4 of your

programme towards acquiring those skills and knowledge that will help them to develop towards becoming Digital & Technology Solutions Professionals.

Learners can select the Microsoft-Get-On elective module ([CA – Microsoft Azure Fundamentals](#) (AZ-900). This will give them access to bespoke Cloud Academy content. Content on this elective module / Cloud Academy space has been created from official Microsoft learning and QA authored courses. This will enable learners to complete additional Microsoft qualifications.

Data Modelling and Database Design

Upon completion of the module, the learner will have a firm theoretical understanding of relational databases and a fundamental understanding of non-relational databases, be able to perform routine database administration tasks and query solutions for analysis on relational databases. Moreover, theoretically and conceptually understanding of key features surrounding data security will be addressed.

IT Project Management

The focus of this module is to facilitate a project management approach to establishing learning communities in the IT sector. Students will be enjoined to work effectively, both independently and as members of a project group; and to evaluate possible solutions to a problem by selecting the best approach. The module also supports students in managing and effectively documenting the activities involved in providing the selected solution to an IT problem.

Level 5

Business Systems & Process

This module will initially explore the wider service management methodology that informs business systems and process development by both examining alternate standards and methodologies and expanding on key foundational areas. It will also explore and analyse the challenges of taking service management methodological theory and translating it into operational service delivery.

Cyber Security

Added: This module explores the concepts around Cyber Security, with a particular focus on risk analysis and mitigation. This includes understanding the vulnerabilities that can exist in systems, investigating how and why adversaries might attempt to utilise vulnerabilities to achieve their goals, and what mitigations can be put into place to reduce or eliminate such risks.

Professional Practice and Portfolio Development 2

- Building on the learning undertaken in Professional Practice 1, learners will further develop self-guided skills and knowledge related to their professional development needs, and the context in which they are working. This

learning is applied and evaluated using appropriate reflective models, providing opportunities for learners to develop and add to their apprenticeship portfolio with the acquired skills and knowledge. Learners can select the Microsoft-Get-On elective module. Depending on the pathway, learners can choose one of the below modules:

- Data Pathway – CA – Data Engineering on Microsoft Azure (DP-203)
- Network Engineer – CA – Microsoft Azure Administrator (AZ-104)
- Software Engineer – CA – Developing Solutions for Microsoft Azure (AZ-204)
- Consultant – CA- Microsoft Azure Solutions Architect Expert (AZ-305)

Cloud Solutions & Architectures

This module will help develop critical knowledge and skills required for the implementation and management of Cloud Solutions & Architectures. It will provide an introduction to Cloud Computing, before moving on to provide an analysis of business and architectural requirements for Cloud Solutions. The learner will explore topics that will aid with the creation of usable and scalable cloud-computing solutions that conform to industry best practices.

Practical Data Analytics

This module looks at data architectures in the context of meeting the information requirements of an organisation. It focuses on the modelling and analysis levels in the data analytics hierarchy of needs. Students will learn about bringing data together to form enterprise data warehouses and will also develop skills in data analytics, the results of which are intended to enrich the organisation with knowledge of both internal and, where appropriate, third-party behaviour which can, in turn, be used to drive strategy.

Software Engineering and Agile (Software Engineer)

This module will be the next step for those on the specialist Software Engineer path and will continue to relate developer skills with Systems Development concepts and tools.

The module will focus on the creation of non-trivial applications using an Agile approach and take a deeper look into the tools, techniques and roles that support the development process. Students will be given a first-hand experience of the incremental and iterative approaches most organisations are now utilising to develop their IT systems and products.

Principles of Data Science (Data Analyst)

This module aims to provide students with key knowledge and skills relating to the principles of data science. Whilst overviewing the data science hierarchy of activities from data collection through to deep learning, the module concentrates on the machine learning level. Students will learn about preparing data, applying machine learning algorithms and interpreting results.

Business and Delivering Change (IT Consultant)

Unchanged: This module seeks to develop theoretical and technical skills in business transformation within complex business environments. The learner will develop analytical skills and core knowledge around problem-solving techniques that enable businesses to adapt to environmental conditions. In addition, the module seeks to encourage the application of these concepts in the work environment to develop professional practice.

Switching and Routing (Network Engineer)

This module will provide a broad range of knowledge in the application of planning, designing, configuring and supporting networks and their associated network devices and services found in modern networks. Consideration will also be given to the different types of traffic found in these networks to ensure appropriate capabilities and security levels that are required in today's networks.

Level 6

Developing Technology Strategy

This module will support degree apprentices to bring together skills and knowledge from modules at previous levels in order to develop a holistic technology strategy for their team, department, client or organisation. The module will also support apprentices to create successful technology strategies to deliver business value by considering business strategy, technical architecture, design and the financial business case.

Major Project (Work-based) (30 credits)

During the final year of the degree, students are required to conduct a substantial piece of independent study and research, using sophisticated methods and tools. Students are expected to work independently with guidance from their supervisor and to develop a level of expertise in the area of research. The Major Project is expected to focus on a theme relevant to the specialism the student is enrolled in.

Practical Research Proposal (10 credits)

This module introduces learners to research methods and approaches to writing project proposals and dissertations. In addition, learners will establish an understanding of how research methods are implemented in technical business contexts. Further to this the module will develop learner research skills and develop strategies to develop their knowledge and skills before applying these to their major project. This will improve outcomes for the major project module by enabling learners to clarify their planned research activities at an early stage.

Contemporary Issues in Digital Technology

This module is concerned with existing and emerging technologies and the challenges faced within an ever-changing technology landscape and the complexities surrounding how such technologies can be leveraged within an organisation.

Professional Practice and Portfolio Development 3

Further building on the learning undertaken in Professional Practice 2, learners will develop advanced self-guided skills and knowledge related to their professional development needs, and the context in which they are working.

This learning is applied and evaluated using appropriate reflective models, providing opportunities for learners to develop and add to their apprenticeship portfolio with the acquired skills and knowledge.

Learners can select the Microsoft-Get-On elective module. This will give them access to bespoke Cloud Academy content.

Learners can choose one of the below modules:

- Microsoft Azure Security Technologies (AZ-500)
Pre-requisite – Azure fundamentals – AZ900 (Studied at L4)
- CA – Microsoft Azure DevOps Solutions (AZ-400)
Pre-requisites are: AZ104 & AZ-204 (1 of which studied at Level 5)
- CA – Designing and Implementing a Data Science Solution on Azure (DP-100).
Pre-requisite – Azure fundamentals – AZ900 (Studied at L4)
- CA – Designing and Implementing a Microsoft Azure AI Solution (Preview) (AI-102)
Pre-requisite – Azure fundamentals – AZ900 (Studied at L4)

Advanced Network Design (Network Engineer)

The module will provide the knowledge and skills required to configure, troubleshoot and manage enterprise networks ensuring factors that may impact the performance, availability and security of network devices and services are considered. Consideration will also be given to new emerging technologies and how they fit into the current landscape.

Software Engineering & DevOps (Software Engineer)

DevOps describes a culture and set of processes that bring development and operations teams together to complete software development. It allows organisations to create and improve products at a faster pace than they can with traditional software development approaches.

Applied Data Modelling & Visualisation (Data Analyst)

This module considers applying data models and algorithms to data sets with the purpose of finding new insight or

making predictions. You will source data within an organisational context and apply appropriate techniques to build models that identify potential opportunities or risks.

Data visualisation is the representation of data through graphs, charts and tables that allow you to see and understand patterns and trends. You will analyse large and complex data sets, and use a variety of software tools to be able to communicate metrics and results. Through the use of effective visuals, you will be able to present findings that are beneficial for making data-driven decisions.

Consulting (IT Consultant)

The purpose of this module is to introduce apprentices to modern theory and practice in consultancy, including professionalism, identification of problems and business needs, and implementation and taking action. The module will focus on developing proficiencies in a range of skills and aptitude required to practice consulting in a technology context.

The course information published on this page is accurate for the academic year 2021/22 and every effort is taken to ensure it is kept up to date. We aim to run the course as advertised however, changes may be necessary due to updates to the curriculum (due to academic, industry or apprenticeship standard developments), learner demand or UK compliance reasons.

Learner Support

Skills Coach

Your Skills Coach will be your primary, non-academic contact, supporting you in the successful progression and completion of your apprenticeship. Your coach will support you in reviewing your progress and collecting evidence of your practice at work to integrate into your module assessments and final endpoint project/assessment. They are also a point of contact for queries, concerns, or general support.

Your Coach can help you with:

- Coaching and supporting work-based learning activities
- Reviewing your progress with your apprenticeship portfolio progress
- Help with achieving your EPA
- Advice and guidance on mitigating (extenuating) circumstances processes and potential breaks in learning.

Workplace Mentor

A Workplace Mentor will be appointed by your employer and typically would be someone you work with. Your workplace mentor will be familiar with the apprenticeship programme and its workplace requirements. They will facilitate the workplace learning opportunities to enable you to meet the requirements of the degree apprenticeship standard.

ACE Team

They are the Academic Community of Excellence (ACE) Team, and amongst the team, have many years of experience providing academic guidance to students on subjects such as how to write in an academic style, how to read smarter rather than longer and how to reference accurately.

The ACE Team will provide you with support on academic matters outside of the classroom. You can also book 1-1 meetings (mainly online) with the ACE Team and get feedback on your academic style of writing, references and critical report writing.

How can the ACE Team support you?

1. "Welcome to the World of Academia" online workshops: if you wish to have an introduction to or a review of the different aspects of academic life before starting your programme, then please do join their online workshops (non-obligatory – but much to be gained from joining!).
2. One-to-one tutorials: you can book a virtual 30-minute tutorial to discuss your academic development skills, such as paraphrasing, referencing and academic writing.
3. Online workshops: we offer ongoing support workshops on a variety of academic subjects such as structuring an argument, academic style and criticality.
4. Our own-created range of learner materials: we have also developed a wide range of ACE Team created materials based on common questions and academic needs.

QA Welfare Services

Our Student Welfare Team is on hand to assist you throughout your studies. Some degree apprenticeship learners have additional learning needs which the Welfare Team can assist with, or they might help you with personal circumstances that are affecting your studies.

Entry requirements

A Level 3 qualification in a relevant area in any grade. Acceptable qualifications include:

- 2 A levels in one or more similar subject
- Level 3 apprenticeship in a similar subject;
- International Baccalaureate at Level 3 in a similar subject;
- BTEC Extended Diploma in a similar subject;

- A Work experience route (2-3 years) in a similar subject-related role

Note: “Similar subject” relates to areas directly relevant to or commensurate with “Digital and Technology Solutions”

As to what constitutes a “similar subject” this would therefore typically be areas such as but not limited to Level 3 digital apprenticeships, A-Level/BTEC Computer Science, Information Technology, Networking, Software Engineering, etc.

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

Fees & finance

There is no cost to you as a degree apprentice. Degree Apprenticeships are fully funded by the Apprenticeship Levy through your employer.

If you're an employer, the total funding for this programme is:

- £25,000

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

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

How to apply

If you are interested in applying to study or to offer a Degree Apprenticeship, please complete the enquiry form on this page and one of our account managers will be in touch.

In order to join a Degree Apprenticeship, the employer will either recruit new staff or select existing staff that are suitable for the programme.