



Programme Guide

# DATA ANALYST

LEVEL 4

QA.com

## DIGITAL AND DEGREE APPRENTICESHIPS

### Building tech careers in the workplace

We offer digital and degree apprenticeships that focus on the most in-demand tech skills including; cyber, IT, software development, data and digital marketing, along with others in project management and senior leadership.

With programme pathways from Level 3 – Level 7, we help learners to progress and grow within your company, helping you retain talent and build capabilities.

Our award-winning approach to blended learning enables apprentices to develop further and faster, adding immediate value to their roles, whilst our interactive portal with real-time dashboards and trigger alerts enable managers to effectively and efficiently track progress.



**Experience:** 30,000 apprenticeships placed



**An unrivalled talent pool:** 100,000 apply to join our programmes every year



**Award-winning:** Recipient of the Gold Award at the Learning Tech Awards 2020 for our apprenticeship delivery model



**Proven:** We have the highest overall pass rate among UK tech training providers\*

\*based on End Point Assessments by the BCS 2020

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# ROLE PROFILE

## DATA ANALYST

Data Analysts collect, organise and study data to provide business insight.

Data Analysts are typically involved with managing, cleansing, abstracting and aggregating data, and conducting a range of analytical studies on that data.

They work across a variety of projects, providing technical data solutions to a range of stakeholders/customers issues. They document and report the results of data analysis activities, making recommendations to improve business performance.

### Data Analysts need:

- Strong maths and analytical skills
- A methodical, step-by-step approach to analysing and gaining insight
- Attention to detail
- Business skills like effective communication, teamwork and task/time management
- To be able to present data in various forms for a technical and non-technical audience

## JOB ROLE SUITABILITY

As an employer is it important to assess whether a candidate (a new hire or existing employee) is working in a suitable job role to successfully complete their programme.

The checklist has been created to help you assess whether your apprentice will be in a position to demonstrate all of the following Data Analyst duties, during their programme.

### Job roles this programme is a great match for:

- Data Analyst
- Junior Analyst
- Departmental (HR, Marketing) Analyst
- Problem Analyst

### Checklist

- 1 Will the apprentice be required to identify data sources to meet the organisation's requirement, using evidence-based decision making to establish a rationale for inclusion and exclusion of various data sets and models?
- 2 Will they be liaising with the client and/or colleagues from other areas of the organisation to establish reporting needs and deliver accurate information?
- 3 Will they be collecting, compiling and, if needed, cleansing data, such as sales figures, Digital Twins etc. solving any problems that arise, to/from a range of internal and external systems?
- 4 Will they have to create performance dashboards and reports in the Visualisation and Model Building phase?
- 5 Will they be given responsibility to support the business by maintaining and developing reports for analysis to aid with decisions, and adhering to organisational policy/legislation?
- 6 Will they be producing a range of standard and non-standard statistical and data analysis reports in the Model Building phase?
- 7 Will they have the responsibility to identify, analyse, and interpret trends or patterns in data sets?
- 8 Will they be responsible for drawing conclusions/recommend appropriate responses/offer guidance/interpretation?
- 9 Have the opportunity to summarise and present the results of data analysis to a range of stakeholders, making recommendations?
- 10 Will they be in a position to provide regular reports & analysis to different management/leadership teams, ensuring data is used and represented ethically in line with relevant legislation (e.g. GDPR, which incorporates Privacy by Design).
- 11 Will they have the responsibility to ensure data is appropriately stored and archived, in line with relevant legislation e.g. GDPR?
- 12 Will they have the opportunity to practise continuous self-learning to keep up to date with technological developments to enhance relevant skills and take responsibility for their own professional development?

# ENTRY REQUIREMENTS

The entry requirements for this programme are as follows:

**Standard entry:**

- Level 3 qualification in ICT or a similar subject and at least 12 months of work experience\* and robust on-boarding plan (learner must work in the organisation for 3 months before sign up)
- **OR** 2x A-Levels (including Maths or ICT)
- **OR** Non-business related degree and at least 6 months of work experience\*
- **OR** Existing staff member with 2+ years of work experience\*\*

**Plus:**

- GCSE English and Maths at grade 4 (C) or above
- Learners should not be entered for a qualification of the same type, content and level as that of a qualification they already hold.

\*Work experience relates to any valid work experience

\*\*Existing staff work experience should be in a Data Analyst role. The minimum of 2 years must include working in an environment that requires some kind of analysis. This would include creation of reports and usage of spreadsheets. Career changers would be coming in from diverse experience backgrounds. The candidate should typically be keen on working with numbers, processing and articulating data and information.

# FINDING NEW TALENT

We offer an extensive attraction and recruitment service for employers who are looking to use apprenticeships to bring new talent into their organisation.

We use multiple channels and tactics to attract people who are interested in and are passionate about building a career in tech. Our recruitment model combines vigorous AI assessments with 1-2-1 interviews to ensure we select apprentices of the highest calibre.

We are committed to increasing diversity in tech and to help achieve this, we work closely with special interest groups including; Code First: Girls, Stemettes and Young Professionals to ensure apprentices from all backgrounds are given the same opportunities, and to support us to close the gender and diversity gap in tech.




Proactively engaged with over **4,000** sixth forms/colleges and universities, attending careers fairs to ensure we reach talent first



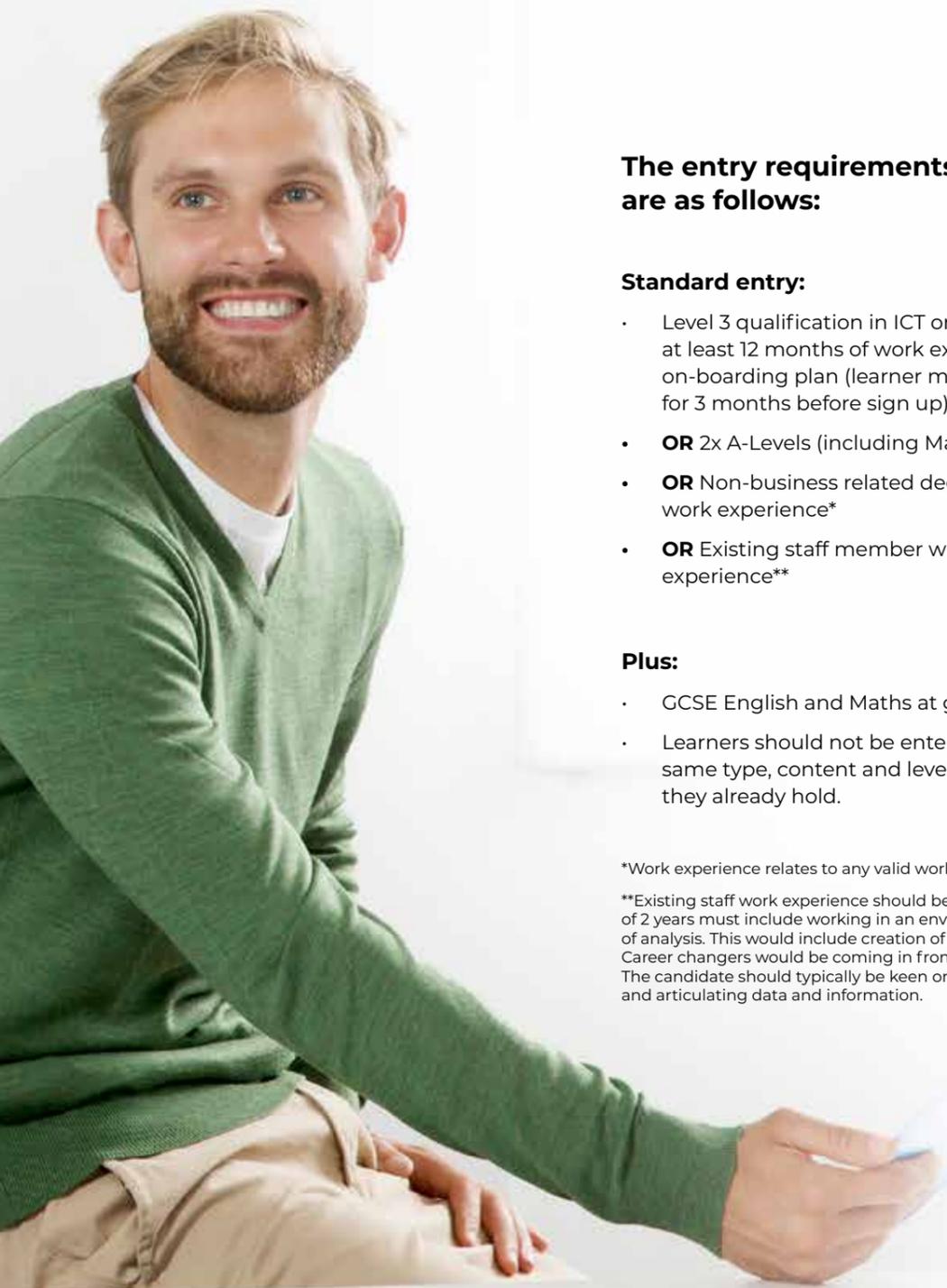
QA attracts **100,000 applicants** a year for its apprenticeship and tech academy roles and has nearly 200,000 in its candidate database



Significantly higher than average gender balance with **37%** of our apprenticeship starts being female, compared to an industry average of 19%



**14.2%** of our applicant pool indicated they have a BAME background - higher than the industry average of 13.3%



# DIVERSITY AND INCLUSION

## We're passionate about diversity in tech

It's our mission to help eradicate the gender gap, and make sure equal opportunities are given to applicants from all backgrounds. We do this through our long-standing partnerships, QA-driven initiatives and use of trending tools and software.

### Diversity-first candidate attraction

We've invested in using augmented copy checking tools to ensure language is inclusive, open to all and free from bias.

We use inclusive imagery throughout our campaigns – producing visual content that promotes diversity and inclusion.

### Promoting inclusivity

We nurture relationships with influencers, schools, colleges and universities via events and interactive sessions to ensure learners from all backgrounds are given the same opportunities.

### Diversity partnerships

We forge partnerships with like-minded organisations who share our vision on STEM gender equality including Code First: Girls, Stemettes and Young Professionals.

### We make tech skills accessible to all

We run free tech workshops including 'Teach the Nation to Code' and 'Teach the Nation to Cloud' so anyone can explore technology career opportunities.

### Skills Scans

Every candidate goes through Skills Scans where their knowledge and skills are measured and mapped against apprenticeship standards. This process ensures the right learner is placed on the right programme at the right time, which we know contributes towards a successful completion and a good learner experience.

# A BLENDED APPROACH TO LEARNING

## How we deliver

QA apprenticeships are designed to immerse the apprentice in their job role and provide more flexibility for the employer.

Allowing individuals to learn through a combination of project and lab work, live events, self-research, self-paced learning and peer-to-peer learning.

The required 20% off-the-job training is a crucial part of the competency development. The latest apprenticeship standard can also now contribute to the off-the-job training, helping to ensure a positive ROI is achieved in relation to salary costs, productivity, efficiency and innovation.



# LEARNER SUPPORT



## Safeguarding at QA

Safeguarding means ensuring the safety and wellbeing of our learners.

At QA, this means ensuring our policies and processes promote and protect learner wellbeing and that while you are on programme, and that while on programme, we teach learners about the types of risk facing modern day British citizens.

This includes cyber risks, mental and physical health information, risks of radicalisation or grooming and much more.

### Ways to access support if you are worried for yourself or someone else:

- Call us – anytime 07808 050273
- Email: [safeguarding@qa.com](mailto:safeguarding@qa.com)
- Contact your Digital Learning Consultant (DLC), tutor or account manager
- Speak to any member of QA staff onsite



## Prevent at QA

Prevent is part of the Government's counter-terrorism strategy.

At QA, this means we teach our staff and learners about the four British values: democracy, rule of law, individual liberty and respect and tolerance.

We also work with Prevent partners to identify people at risk of being or causing terror related harm.



## Mental Health at QA

Emotional and mental wellbeing is an important component of successful learning.

Understanding how to protect mental health and promote emotional wellbeing is part of modern British citizenship.



# DIGITAL BY DESIGN APPRENTICESHIP PROGRAMMES

## Digital by Design programmes

QA Digital by Design apprenticeships provide a greater focus on online learning together with using live interaction where it adds the most value for learners.

It means that there is a single learner journey which brings teaching, coaching, learning and assessment into a single, repeatable flow for every module. This ensures that from the beginning of the programme there is a clear focus on successful completion of the end-point assessment (EPA).

In Digital by Design, these three elements will work together:

- The content
- The service and support
- The technology

## Discover, practise and apply

All QA apprenticeships use a guided discovery approach to learning, as opposed to traditional methods of delivery such as live events. This shifts the emphasis from content delivery to our learners and their context, resulting in the apprentice feeling empowered to take ownership of their learning experience through the “Discover, Practise, Apply” model.



### DISCOVER

Learners will learn the theory, by exploring subjects online and in the live events.



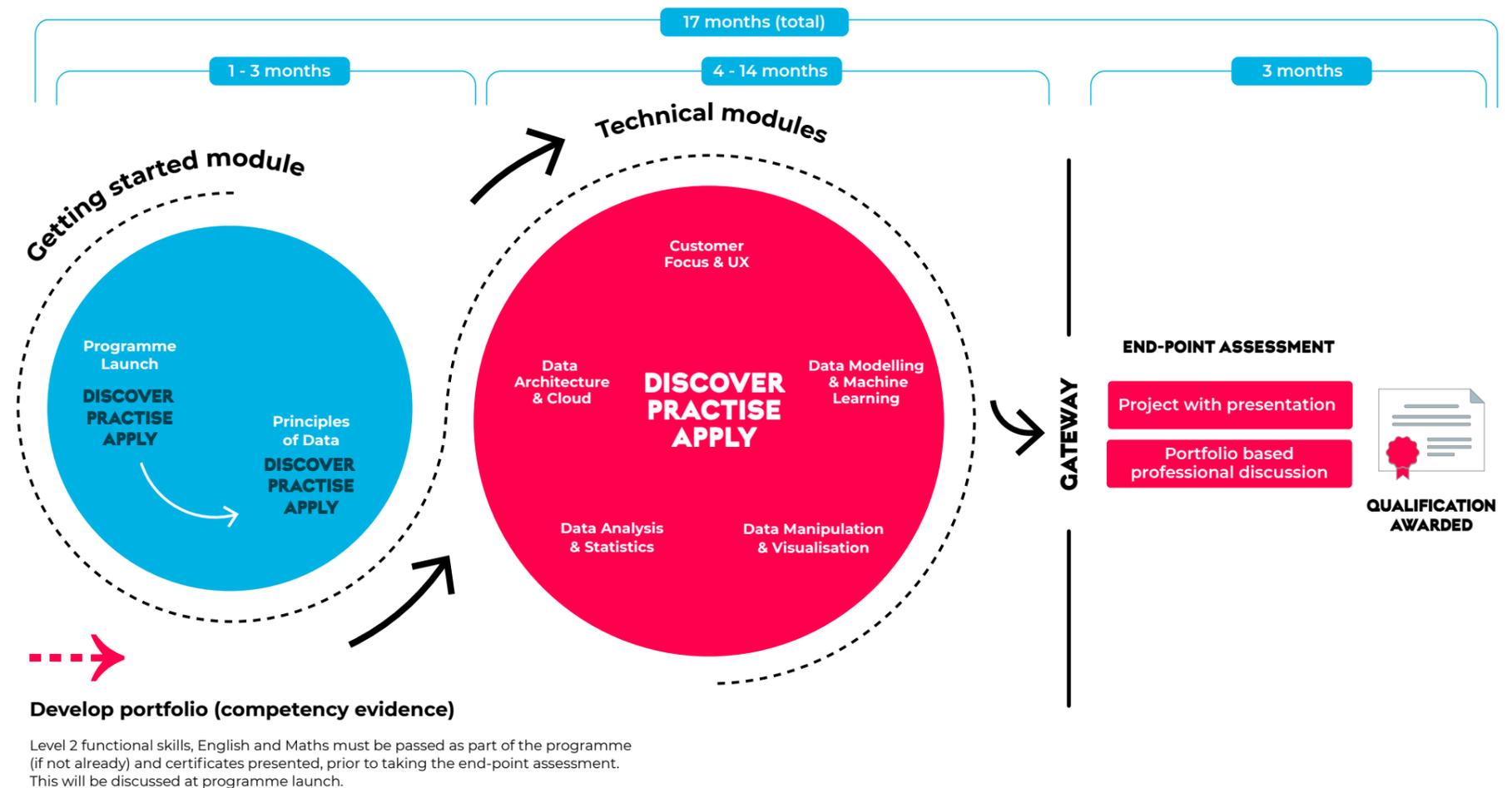
### PRACTISE

Learners will practise their new-found knowledge by completing activities - online, in the live events and (most importantly) directly at work in their day-to-day role.



### APPLY

Learners will apply what they've discovered and practised at work. They will actively contribute to your organisation whilst building their portfolio of evidence (showing how they've applied their new skills) to gain their qualification.



# THE LEARNER'S JOURNEY

Programme timeline | Duration: 17 Months | Gateway: 14 Months



GETTING READY TO START  
PROGRAMME LAUNCH

- **Start Module 1:** Principles of Data
- Safeguarding module
- H&S: Workstation assessment
- Functional Skills: Maths and English diagnostics
- **Check-in session 1**
- Functional Skills: Maths and English learning

MONTH 1

MONTH 2

- **Employer Check-in**
- **End Module 1:** Principles of Data
- **Start Module 2:** Data Architecture & Cloud

MONTH 5

- **End Module 2:** Data Architecture & Cloud
- **Start Module 3:** Customer Focus & UX

MONTH 6

- Functional skills: speaking, listening and communicating exam preparation
- Functional skills: Maths and English (reading and writing) mock exams
- Functional skills: speaking, listening and communicating exam
- Functional skills: Maths exam
- Functional Skills: English (reading) exam
- Functional Skills: English (writing) exam
- **Employer reflection (1 of 2)**

MONTH 7

- **End Module 3:** Customer Focus & UX
- **Start Module 4:** Data Modelling & Machine Learning

MONTH 10

- **End Module 4:** Data Modelling & Machine Learning
- **Start Module 5:** Data Manipulation & Visualisation

- **End Module 5:** Data Manipulation & Visualisation
- **Start Module 6:** Data Analysis & Statistics

MONTH 12

MONTH 14

- **Employer reflection (2 of 2)**
- **End Module 6:** Data Analysis & Statistics
- **Portfolio consolidated**
- **End-point assessment preparation**



Qualification awarded

# GETTING STARTED MODULE

The modules in our Data Analyst apprenticeship equip learners with the advanced technical skills they need for their role. Each module develops the core set of skills they must be able to do well to be competent in their role.

In each module, learners will 'discover', 'practise' and 'apply' what they've learned.

This helps them put their newly-found knowledge into action back at work.

There are six modules to complete with the following learning outcomes.

## Module 1: Principles of Data

### Programme Launch

- Live virtual session to commence learning
- Discover and practice, linking the apprenticeship to the workplace
- Apply, demonstrating the learners knowledge of their workplace and personal development planning for the programme and generating portfolio evidence

### Discover. Practise. Apply.

Discover the principles of all things Data Analyst.

This digital module provides learners with fundamental knowledge on legislation, security and ethics alongside understanding core data theory including the principles of data, types of data and data lifecycles.

This module enables learners to develop their understanding of data principles and builds the foundations for the following modules.

- Legislation, security and ethics
- The data lifecycle
- Structured and unstructured data
- Data tools

**Live session:** 0 days

**Module duration:** 4 weeks

# TECHNICAL MODULES

The technical modules focus on the knowledge and skills required of a Data Analyst in detail. After each module learners will 'apply' what they've learned at work on current projects.

## Module 2: Data Architecture & Cloud

This module progresses on to core concepts of data architecture and cloud technologies.

Topics covered in this module include Data Warehousing, Business Intelligence, Big Data and Cloud architectures.

Topics covered:

- Introduction to data architectures
- What is cloud computing?
- Data flows in Azure
- Databricks and data lake storage
- Data warehouses with SQL
- Data warehouses with PowerBI
- Creating tables in SSIS
- Privacy by design

**Live session:** 5 days

**Module duration:** 10 weeks

## Module 3: Customer Focus & UX

This module focuses on user experience, understanding customer requirements and risk management.

The module will enable learners to appreciate who their users are and understand the 'why' behind their data analysis roles.

Topics covered:

- Introduction to UX
- UX and the data analyst
- Persona mapping
- User journey mapping
- Creating user stories
- Requirement engineering
- Stakeholder mapping
- Quality of data in UX
- Risk management

**Live session:** 2 days

**Module duration:** 10 weeks

## Module 4: Data Modelling & Machine Learning

This module introduces learners to databases, working with SQL, Data Modelling and the fundamentals of Machine Learning.

Topics covered:

- Data modelling types (conceptual, logical and physical)
- Data models and business requirements
- Applying normalisation techniques
- Modelling for OLAP and BI/DW including the star schema
- SQL language – CRUD
- Analytical techniques (probability, statistical distributions, inferential statistics, inference for numerical data and inference for categorical data)
- Machine learning algorithms and methodologies

**Live session:** 3 days

**Module duration:** 10 weeks

## Module 5: Data Manipulation & Visualisation

This module explores accessing and manipulating data from different sources, and how to visualise and present data to stakeholders.

Topics covered:

- Populations and sampling
- Hypothesis testing
- Introduction to data analysis in Excel
- Charts and visualisations in Excel
- Hypothesis testing by simulation in Excel
- Analysing for a hypothesis
- Importing Excel into Power BI
- Conditional logic in Power BI
- Relationships in Power BI
- Visualisations in Power BI

Introduction to Python  
(OPTIONAL Cloud Academy content)

**Live session:** 3 days

**Module duration:** 10 weeks

## Module 6: Data Analysis & Statistics

The Data Analysis and Statistics module progresses learning to explore analytical techniques, methods and statistical analysis methodologies.

During this module's live session learners are also introduced to the programming languages, Python and R. Learners who wish to expand their knowledge of Python and R can access a range of optional learning courses on Cloud Academy.

Topics covered:

- Data analysis techniques
- Introduction to statistics
- Statistical methodologies (descriptive and inferential)
- Correlation coefficient
- Linear and non-linear regression
- SLR and MLR
- Data analysis with Power BI
- Statistical analysis with Power BI
- Fundamentals of R
- Fundamentals of Python
- Statistics in Python
- Statistics in R

**Live session:** 5 days

**Module duration:** 10 weeks

## Gateway and End-Point Assessment Consolidation, Preparation and Assessment (Online)

This final component will get learners ready to go through the 'gateway'.

The apprenticeship gateway is an internal QA process. It will ensure that your learner's work is ready to be assessed by the EPAO. This exists to increase their chances of success.

At this pre-gateway stage learners will:

- Consolidate and submit their portfolio
- Throughout the programme apprentices have completed mock professional discussions to prepare them for the EPA process

In addition to the items above, learners must have successfully completed:

- KSBs have been clearly evidenced
- All the functional skills exams (except exempt learners)

Once learners have met all the above criteria, they will go through the gateway. When approved, it takes 3 months from gateway to achievement. During this time, learners will:

- Complete their professional discussion, which is underpinned by their portfolio
- Complete their project and presentation with questioning

**Duration:** 7 days + EPA

## Qualifications earned



When they achieve this apprenticeship, learners will earn the following qualifications:

- Data Analyst L4 apprenticeship

# LEARNING OUTCOMES

Apprentices will be assessed on 3 key areas; their ability to convey knowledge, their ability to demonstrate practical skills and their capability of displaying professional workplace behaviour. These will be developed during an apprentice's learning journey, with the goal of displaying all of these competencies during their assessment.

These knowledge, skill and behaviour points ensure rounded development, as the standards provide a greater emphasis on the importance of both technical and soft skills in the workplace.

## KNOWLEDGE

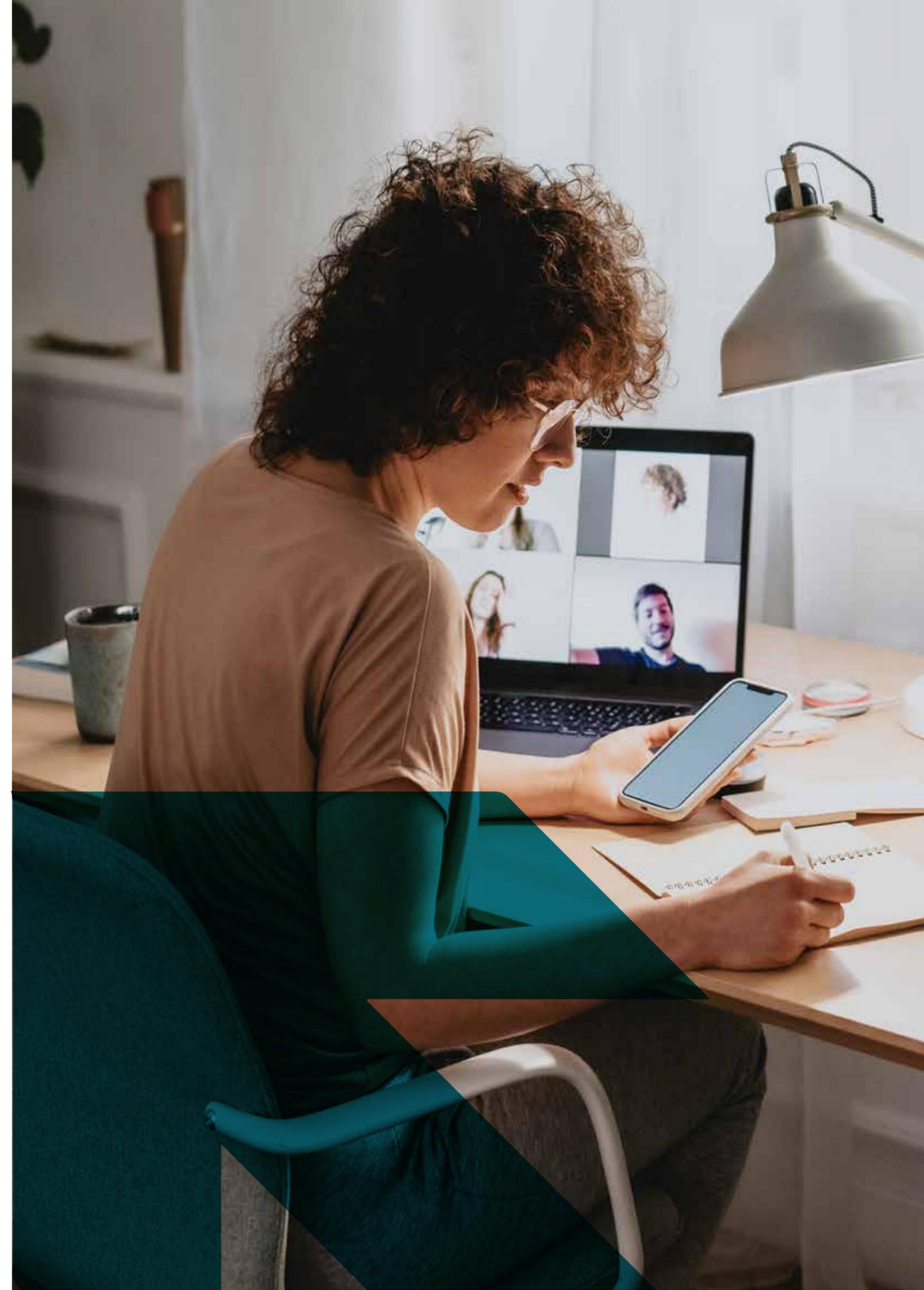
- K1: Understand the organisations operating environment and the factors that may influence its direction and performance, including the markets it operates in, roles and responsibilities, who its stakeholders are and what they require from the organisation.
- K2: Understand the environment in which the organisation's products/services are produced or supplied, and the factors that may influence performance, including legislation, customer requirements and regulatory requirements.
- K3: How the organisation's strategy is sensitive to stakeholder perceptions and how this knowledge informs priorities at a tactical level.
- K4: How applicable contractual and commercial requirements for quality affect the organisation's performance objectives for their specific products / services.
- K5: The methods and tools for identifying customers/ stakeholders and gathering information about their requirements including the tools for analysing and prioritising customer/stakeholder quality requirements using tools such as Kano model.
- K6: How to convert quality requirements into performance measures objectives using tools such as Critical to Quality Trees (CTQ Trees), requirements matrices and operational definition.
- K7: Risk and opportunity management, including the risk and opportunity management principles, framework and processes, types of risk/opportunity associated with new product/service development and improvement, process and supply chain management and methods and tools for identifying, assessing, and mitigating risks/realising opportunities, such as risk and opportunity register, risk and opportunity matrix, Fault Tree Analysis (FTA), Failure Mode and Effects Analysis.
- K8: Products/services life cycle stages (such as Capture, Design and Development, Integration, Production, Support and Closure) and the implication for quality
- K9: Concept of process design and how this supports specific organisational objectives using tools such as process flowchart, value stream mapping and SIPOC (Supplier, Input, Process, Output, and Customer).
- K10: Tools and techniques for managing the organisation's specific products / services to meet customer requirements such as Quality Function Deployment, Lean Product Development and Design for Manufacturing.
- K11: How to plan, measure, manage and monitor organisation's quality objectives.
- K12: Understand the purposes for auditing and how to plan, conduct, report and follow up an audit.
- K13: When to apply a range of business improvement approaches tools and techniques such as Problem definition, measurement systems analysis, Basic data analysis, graphical data analysis, use of software tools for data analysis, root cause analysis, identification and assessment of improvement options, process control tools.
- K14: The key considerations (such as political, economical, social, technological, legal and environmental) and approaches necessary (such as Tuckman's Storming, Norming, Forming and Performing) to enable change in organisations, products or services.
- K15: The company's key drivers for change (internal and external) may influence priorities and objectives.
- K16: How to promote the right behaviours to create a quality culture in the organisation and how this leads to organisational performance improvements.
- K17: The techniques used for improving awareness and performance in relation to quality objectives and requirements.
- K18: Learn how different sources and methods will aid in maintaining own development in the quality profession.
- K19: Principles of the foundation of Quality and Quality Management System.

## SKILLS

- S1: Identify, interpret and apply relevant legal, governmental or industry regulations affecting the organisation.
- S2: Communicate using appropriate methods (verbal, written, visual) to influence internal and external stakeholders, using appropriate questioning techniques such as open questions, leading questions.
- S3: Identify, collect and analyse relevant quality data using appropriate tools and techniques such as Pareto analysis, statistical methods and trending analysis.
- S4: Apply methods and tools to improve the quality performance of processes, products and services such as production control plans, standardised work, use of failure modes and effects.
- S5: Identify, analyse and prioritise quality specific risks and opportunities. Support the development, implementation and effectiveness of resulting actions.
- S6: Plan and conduct system, product or process audits.
- S7: Assess the effectiveness of the measurement systems using tool such as Measurement Systems Analysis.
- S8: Identify requirements from technical documents, commercial input or stakeholder statements and converting to definitions that can drive the organisations processes
- S9: Identify gaps in process performance and develop improvement plans to close gaps.
- S10: Apply structured problem solving including identification, definition, measurement, analysis, improvement and control methods and tools.
- S11: Communicate organisational quality strategy to all levels of the organisation.
- S12: Identify who the internal and external stakeholders are and their current and optimal positions (such as hostile, help it work, opposed, uncooperative, indifferent, hesitant, enthusiastic support) required to support quality related activities.

## BEHAVIOURS

- B1: Promote actively best practices and continuous improvement.
- B2: Operates diligently with professionalism considering a wider picture.
- B3: Act with integrity by being open and honest.
- B4: Always put customers at the heart of every task.
- B5: Seek continuous professional development opportunities such as self-reflection, gathering information, producing personal development plans and keeping up to date on sector/organisation regulation.



## HOW TO GET READY FOR THE END-POINT ASSESSMENT

We want to deliver memorable learning experiences, whilst developing learners with well-rounded skillsets, ready to meet their professional requirements.

To ensure we are achieving this goal consistently, it is important for learners, digital learning consultants and employers to work together to ensure learners are supported to succeed in their apprenticeship's end-point assessment (EPA).

In this section we outline a number of guidelines which intend to provide a framework so that this can be achieved in a consistent way.

**Preparation for the end-point assessment starts from day one.**

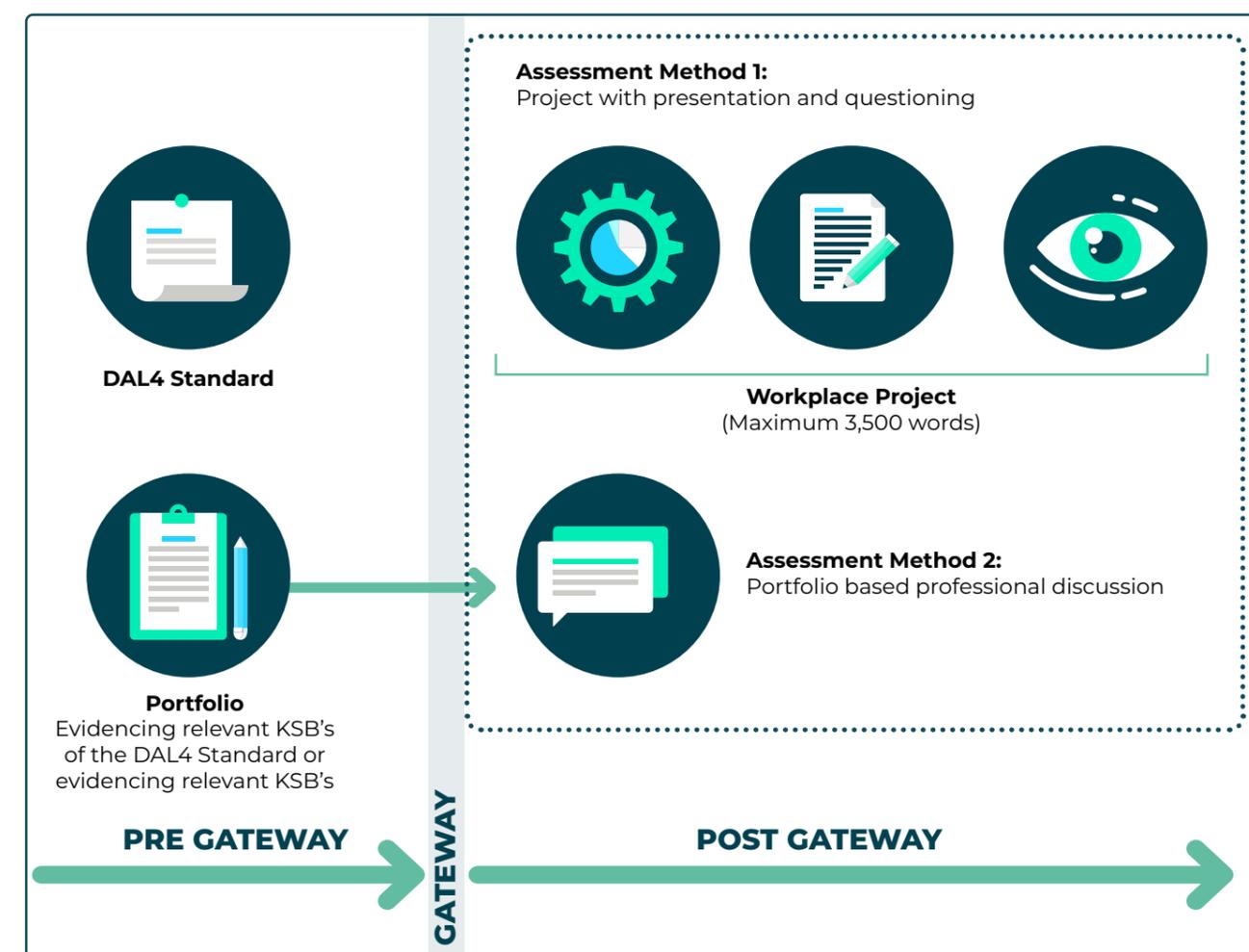
### STAYING ON-TRACK THROUGHOUT THE PROGRAMME

Learners and employers should start preparing for EPA from the start of the programme. Employers will need to ensure that learners are given the right opportunities at work to develop and prove the knowledge, skills and behaviours in the standard.

For this reason, it is very important to keep learners, digital learning consultants and employers informed about the programme progress. It is critical to the success of the apprenticeship programme that all of the above work together to ensure that each learning journey is kept on-track avoiding further interventions (and time commitment) whenever possible.

To help learners with this, we have created two guiding documents – a programme timeline, and a progress review map – so progress can be checked against it, at any time. Any progress deviations above 15% will be reviewed on a case-by-case basis. This is to ensure the apprenticeship is progressing in a timely manner.

## HOW THE EPA IS GRADED



# EXPANDING TECHNICAL SKILLS THROUGH CLOUD ACADEMY



Our apprentices are given full access to our proprietary Cloud Academy platform for the duration of their programme.

Cloud Academy brings the very latest and up-to-date content to our apprentices through single units, courses and comprehensive learning paths to really build on the core learning outcomes defined within the programme. Furthermore, apprentices are able to prepare for the full suite of vendor qualifications across AWS, GCP and Azure and much more.

Cloud Academy users also benefit from Hands-On Labs, Lab Challenges and Lab Playgrounds providing a safe, sandbox environment in which our learners are able to practise in real time through guided walkthroughs or through their own exploration.

Check out the [Training Library - Cloud Academy](#).



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