Data Analyst Apprenticeship (Level 4)

Programme information

Data Analyst Apprenticeship (Level 4)

Is this programme suitable for my job role?

Data Analysts collect, organise and study data to provide business insight. They work across a variety of projects, providing technical data solutions to a range of stakeholders/customers.

This programme covers data analysis and analytics, data structures, Big Data and processes and tools for data integration.

Key areas covered are:

- Identifying, collecting and migrating data
- Interpreting data
- Statistical analysis and other analytical techniques such as data mining
- Producing performance dashboards
- Tools and techniques for data visualisation
- Presenting results to stakeholders and making recommendations

If this is all a part of your job role, the programme will be great for you to strengthen and develop your skills.

Roles this programme prepares you for:

- Data Analyst
- Data Manager
- Data Scientist
- Data Modeler
- Dara Architect
- Data Engineer

What qualifications are included?

The great thing about an apprenticeship is that you will gain valuable qualifications which demonstrate the new skills you have developed whilst on programme.
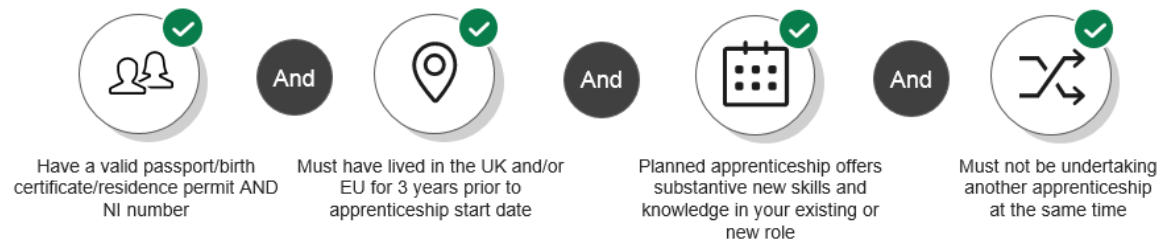
Qualifications for this programme include:

- Data Analyst Apprenticeship (Level 4)
- BCS Level 4 Certificate in Data Analysis Tools
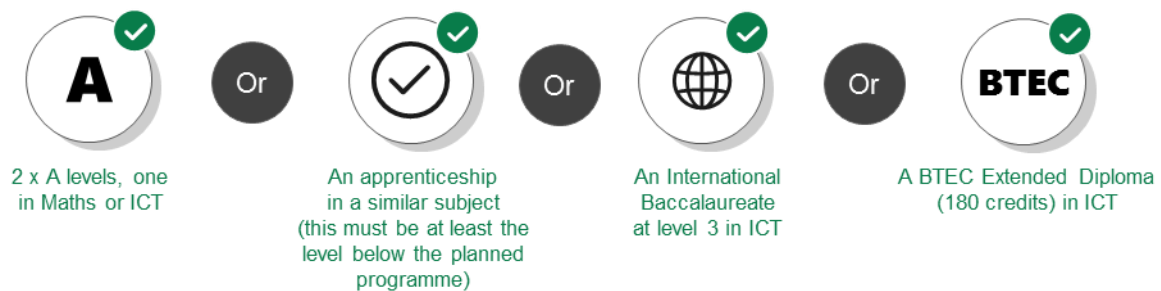- BCS Level 4 Certificate in Data Analysis Concepts

BCS, The Chartered Institute for IT, is committed to making IT good for society. They champion the global IT profession and the interest of individuals engaged in the profession, for the benefit of all.

Entry requirements

Core entry requirements

Have a valid passport/birth certificate/residence permit AND NI number

And

Must have lived in the UK and/or EU for 3 years prior to apprenticeship start date

And

Planned apprenticeship offers substantive new skills and knowledge in your existing or new role

And

Must not be undertaking another apprenticeship at the same time

Prior qualifications requirements

2 x A levels, one in Maths or ICT

Or

An apprenticeship in a similar subject (this must be at least the level below the planned programme)

Or

An International Baccalaureate at level 3 in ICT

Or

A BTEC Extended Diploma (180 credits) in ICT

And

Strong English skills

You may also be considered for entry based on previous experience e.g. having done data analysis previously.

Functional skills requirements

GCSE English and Maths (or equivalents) at grade C or above
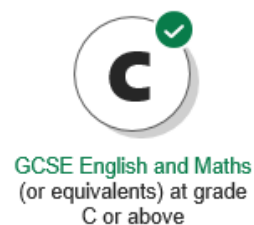
Apprentices without a recognised level 2 English and Maths qualification will need to achieve this level prior to taking the end-point assessment.

For those with an education, health and care plan or a legacy statement the apprenticeships English and Maths minimum requirement is Entry Level 3 and British Sign Language qualification are an alternative to English qualifications for whom this is their primary language.

This is a requirement of the apprenticeship standards.

Funding eligibility

A full list of SFA eligibility criteria can be found here – https://www.gov.uk/government/publications/apprenticeship-funding-and-performance-management-rules-2017-to-2018

How is the programme structured?

The apprenticeship has four key components.

1. Knowledge modules

Introduce you to the key skills you will develop to become an outstanding Data Analyst. The way the modules are taught truly support you to develop skills relevant to your job, and help you to easily apply these skills to real projects.

Each module includes **online learning, activities** and **support**, face to face **workshops** and workplace **challenges** to give you flexibility around when and how you complete your learning.

Online learning allows you to fit your learning around your job. You can access it when you need to, to refresh your knowledge on a topic, or prepare for the next module.

Each module will have a set number of **activities** to complete (mainly online) to help bring learning to life in practical scenarios.

A **challenge** will be set in the classroom workshop for each module, which you will take away and work on in the workplace before the next module. The challenge will be a problem that you would be very likely to experience in your job role. You will develop a solution to this, which you will present at the next module's workshop.

Online **support** from online tutors help you throughout the module with the activities and challenges you will complete.

2. Summative portfolio

You will showcase your best work throughout the apprenticeship in a portfolio. The portfolio records the real work projects that you've worked on throughout the programme where you have applied the new skills you've learnt. Your Skills Coach will support you to build your portfolio.
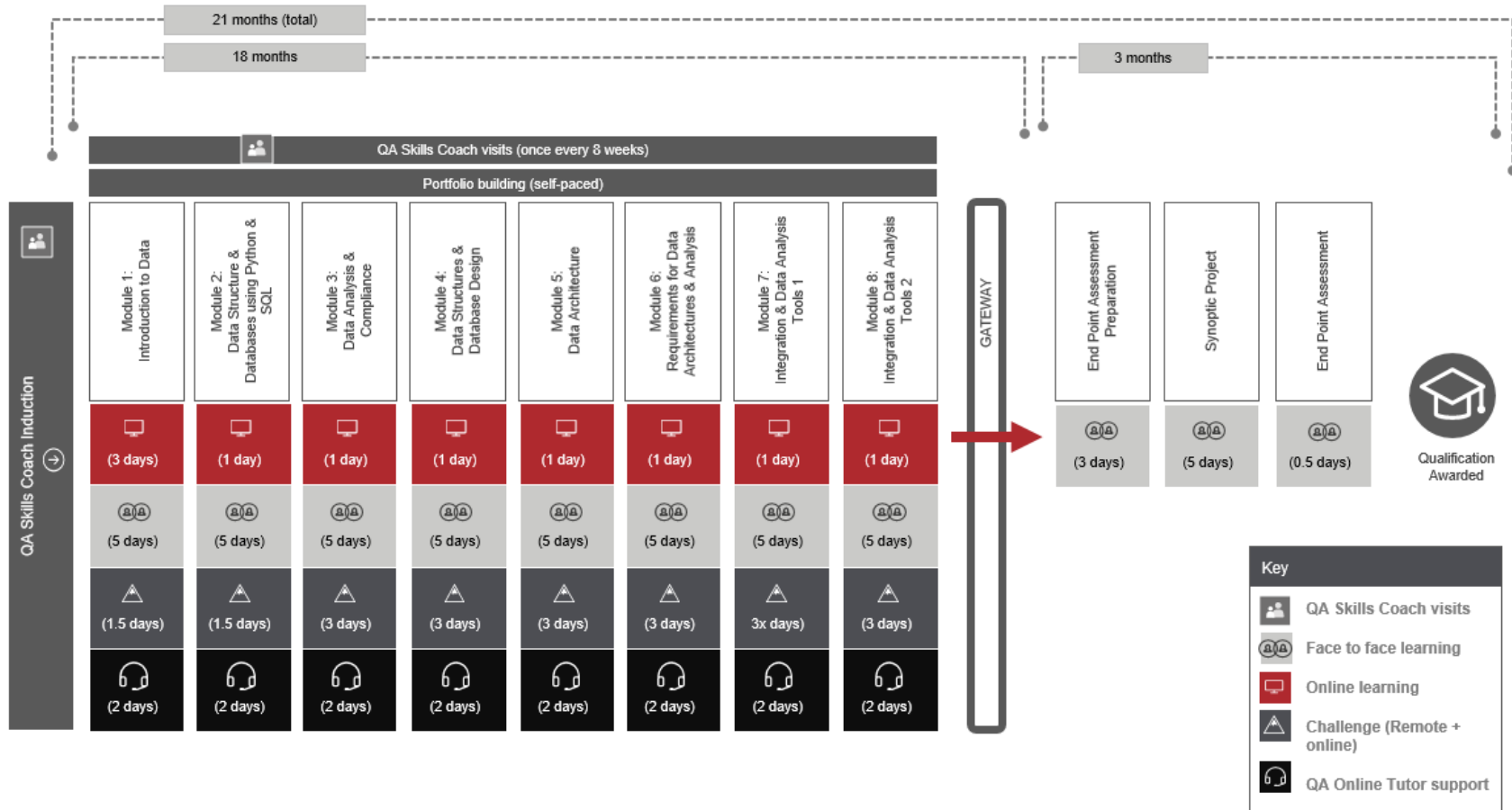
3. Synoptic project

Towards the end of the programme you will take a business and technical brief and build a finished product to meet the requirements of the brief. This could include working on a complex set of data and using various tools to analyse this and report back. The synoptic project takes place in the classroom and is typically 5 days long.

4. End-point assessment interview

The interview is carried out by an independent assessment organisation – BCS – at the end of the programme. It includes a review of your portfolio, a presentation and synoptic project to make sure you've met the learning outcomes of the programme. You will have a face to face workshop to help you prepare for this.

How long will the programme take me to complete?

It will usually take 21 months but the time it takes you will depend on your prior knowledge/experience. The structure and duration ensures that you can complete your learning flexibly around your other responsibilities – both at work and at home. Below is an example timetable.

21 months (total)		
18 months		3 months

QA Skills Coach visits (once every 8 weeks)

Portfolio building (self-paced)

QA Skills Coach Induction	Module 1: Introduction to Data	Module 2: Data Structure & Databases using Python & SQL	Module 3: Data Analysis & Compliance	Module 4: Data Structures & Database Design	Module 5: Data Architecture	Module 6: Requirements for Data Architectures & Analysis	Module 7: Integration & Data Analysis Tools 1	Module 8: Integration & Data Analysis Tools 2	GATEWAY	End Point Assessment Preparation	Synoptic Project	End Point Assessment	Qualification Awarded
	(3 days)	(1 day)	(1 day)	(1 day)	(1 day)	(1 day)	(1 day)	(1 day)		(3 days)	(5 days)	(0.5 days)	
	(5 days)	(5 days)	(5 days)	(5 days)	(5 days)	(5 days)	(5 days)	(5 days)					
	(1.5 days)	(1.5 days)	(3 days)	(3 days)	(3 days)	(3 days)	3x days	(3 days)					
	(2 days)	(2 days)	(2 days)	(2 days)	(2 days)	(2 days)	(2 days)	(2 days)					

Key

👥	QA Skills Coach visits
👤👤	Face to face learning
🖥	Online learning
⚠	Challenge (Remote + online)
🎧	QA Online Tutor support

What will I learn?

There are eight knowledge modules to complete with the following learning outcomes.

1. Introduction to Data (five day face to face workshop)

    - Understand what data is, and why it's needed
    - Data Protection Act
    - Understand data – what, why, where, who, when
    - Write a basic Python program
    - Set expectations about tools and environment needed
    - Use Visual Studio, Python, Excel and PowerBI

2. Data Structure and Databases Using Python and SQL (five day face to face workshop)

    - Installing SQL Server database and management studio
    - Familiarise yourself with SQL commands
    - Use Python to do simple statistical analysis
    - Data structures with/without databases
    - Write programs to process data structures using Python
    - Use SQL to interrogate data tables
    - Use Python to transform files
    - Connect Python to SQL

3. Data Analysis and Compliance (five day face to face workshop)

    - Understand and define the problem
    - Data cleansing and standardization
    - Charts and visualisations using Excel and Microsoft BI
    - Interpret results
    - Data documentation and dissemination
    - Compliance with the Data Protection Act
    - Data cleansing practice using Python and SQL
    - Present results
    - Use SQL Server, Visio, Excel, and Microsoft BI

4. Data Modelling and Database Design (five day face to face workshop)

    - Conceptual, logical and physical data modelling
    - Logical to physical transformation using SQL server
    - Database types: hierarchical, network, OO, dimensional and no SQL
    - Use of specific database types
    - Use Visio to model data structures
    - Create databases from models
    - Data warehouse design and construction
    - Use SQL to create dimensions from unnormalised data

5. Data Architecture (five day face to face workshop)

- Data architecture vs information architecture
- Rules, policies, standards, and models
- Meta data
- Data architecture functions and management
- Data transformation tools and their use in data architecture management
- Importance of quality standards in any data architecture
- Importance of maintenance to ensure quality in data architectures and data analysis
- Testing strategies to ensure quality in data architectures and data analysis
- Define and document the data architecture components
- Define and document the metadata using tools and by hand
- Use ETL techniques to create and support the architecture
- Practical exercises in maintenance
- Design tests to ensure quality by determining data defects

6. Requirements for Data Architectures and Analysis (five day face to face workshop)

- The need for clear, unambiguous requirements
- Classification of different types of requirements and the treatment of them
- Requirements elicitation including documentation, implicit and explicit requirements and expert knowledge
- Models in answer to requirements
- Adaptive vs predictive methodologies
- Determine requirements and document them, categorising business requirements, functional vs non-functional requirements, technical requirements etc.
- Describe and implement change control procedures
- Deal with changing circumstances and unclear requests

7. Integration and Data Analysis Tools 1 (five day face to face workshop)

- Train the model and test the model
- Form a hypothesis
- Use data analysis tools to perform statistical functions
- Define mean, median, mode and range
- Probability, bias and statistical significance
- Linear and logical regression
- Scatter plots and correlation
- Factorials and probability
- Stem and leaf plots
- Box and whisker plots

8. Integration and Data Analysis Tools 2 (five day face to face workshop)

- Statistical analysis
- Interpreting requirements and producing the solution
- Statistical languages – comparisons and applications
- OLTP vs OLAP vs Big Data
- Data structures and integration to target different structures
- Performant solutions

Preparation Workshop

You will also have a workshops towards the last three months of the programme to help you prepare for your end point assessment. An expert tutor will help you in this workshop to go through a mock synoptic project and a mock interview.

Skills Coach Support

Throughout all the knowledge modules, a Skills Coach will support you. They will visit you in the workplace or meet you via telephone or web link every 8 weeks to answer your questions, check on your progress and help you build your portfolio.

Where will my learning take place?

During your knowledge modules, workshops will be taught by a specialist IS Business Analyst tutor in a local QA training centre. QA has training centres in locations throughout Britain. By arrangement, training can be delivered on Civil Service premises.

Outside of the classroom, a QA Skills Coach with relevant skills and experience in the sector will be available to meet either at your workplace or via the telephone or web link during each module.

Supporting materials, additional learning activities and support from online tutors will be accessible via an online learning website, Canvas.

How will the programme be assessed?

This final assessment is undertaken by an independent assessor (BCS). It will determine your final grade – Pass, Merit or Distinction.

The assessment will include four key elements to ensure you have met all of the knowledge, skills and behaviours defined in the IS Business Analyst Level 4 apprenticeship standard.

The four elements include:

- Assessment of your synoptic project
- Assessment of your summative portfolio
- A reference from your employer
- An hour-long interview covering your portfolio and synoptic project

The use of a variety of assessment methods in the final summative assessment ensures that the assessment is based on your performance and accurately reflects the quality of your work.

When can I start?

Straight away! Programmes are scheduled to start at multiple points during the year so you can join as soon as you are ready.

Register your interest by contacting your department's single point of contact for apprenticeships.