



Level 4

Diploma Data Analyst

(DA700-01)

Qualification

Level 4 Diploma Data Analyst (DA700-01)

Title and level	GLH	TQT	Global Skills Qualification number
Level 4 Diploma Data Analyst	510	1200	DA700-01

Introduction

This document tells you what you need to do to deliver the qualifications:

This qualification is designed to give learners the knowledge and skills and behaviours required to work in a variety of roles in data analysis roles.

This qualification is designed for learners who want to upskill, develop their studies or work within the digital sector.

This qualification will give learners the skills, knowledge and behaviours to meet employer needs and industry requirements.

This qualification aims to:

- provide the knowledge, skills and behaviours that are required to be developed to work in the data fields
- give learners confidence and the skills required to gain employment with a recognised qualification

Candidate Entry Requirements

This qualification is designed for learners who want to begin or advance their career within data analysis. It is also suitable for learners who wish to progress to further study in this specialised area.

There are no specific prior skills/knowledge a learner must have for this qualification. However, learners may find it helpful if they have already achieved a relevant level 3 qualification.

It is the centres responsibility to ensure that all learners are capable of achieving the learning outcomes and they have the relevant level of literacy, numeracy and health and safety knowledge to meet the requirements.

The qualification is suitable for learners of 16 years of age and above.

Qualification Units

To achieve the **DA700-01 Level 4 Diploma Data Analyst**, learners must achieve **120** credits from the mandatory units

Mandatory Units

GSQ Unit code	Ofqual Unit Reference	Unit Title	Credit Value	GLH
800	A/651/0924	Legislation and security standards applied to data analytics	10	30
801	D/651/0925	Data fundamentals and lifecycle	20	90
802	F/651/0926	Data structure and databases	20	90
803	H/651/0927	Stakeholder engagement and user experience in data analytics	20	90
804	J/651/0928	Organisational data	20	90
805	K/651/0929	Data mining and statistical analysis	30	120

Total Qualification Time

Total Qualification Time (TQT) is the total amount of time, in hours, expected to be spent by a Learner to achieve a qualification. This includes both guided learning hours and hours spent in preparation, study and assessment.

Title and level	GLH	TQT
Level 4 Diploma Data Analyst	510	1200

Portfolio of evidence

To achieve this portfolio, you will need to produce a portfolio of evidence to show that you have the knowledge and skills in your chosen qualification. You will need to demonstrate the practical skills required and be observed by a competent tutor/assessor who will support you with evidence collection.

Your knowledge and understanding and practical skills will be assessed using the assessment methods listed below:

- Projects
- Observed work
- Witness statements
- Audio-visual media
- Evidence of prior learning or attainment
- Written questions
- Oral questions
- Assignments

- Case studies
- Professional discussion

Centre Requirements

As a minimum, it is expected that centres seeking approval for this qualification have access to the resources required to achieve the learning outcomes.

Centre Staffing

Staff delivering these qualifications must be able to demonstrate that they meet the following occupational expertise requirements. They should:

- be occupationally competent or technically knowledgeable in the area[s] for which they are delivering training and/or have experience of providing training. This knowledge must be to the same level as the training being delivered.
- have recent relevant experience in the specific area they will be assessing and continue to achieve a minimum 30 professional development hours per year
- have credible experience of providing training

Centre staff may undertake more than one role, e.g. tutor and assessor or internal quality assurer, but cannot internally quality assure their own assessments.

Tutors/Assessors and Internal Quality Assurer

Assessor/Internal Quality Assurer qualifications are valued as qualifications for Centre staff, but they are not currently a requirement for the qualifications.

Continual Professional Development (CPD)

Centres must support their staff to ensure that they have a current knowledge of the occupational area, that delivery, mentoring, training, assessment and verification is in line with best practice, and that it takes account of any national or legislative developments.

Unit 800 Legislation and security standards applied to data analytics

UAN: A/651/0924

Level: 4

Credit value: 10

GLH: 30

Aim

This unit emphasises the importance of exploring key features of relevant legislation, security standards and organisational policies and procedures to understand their influence on safe data usage and data management activities.

Knowledge of outcomes

You will be guided by your tutor and assessor on the evidence that needs to be produced. Your knowledge and understanding will be assessed using the assessment methods listed below*:

- Projects
- Observed work
- Witness statements
- Audio-visual media
- Evidence of prior learning or attainment
- Written questions
- Oral questions
- Assignments
- Case studies
- Professional discussion

Where applicable your assessor will integrate knowledge outcomes into practical observations through professional discussion and/or oral questioning.

When a criterion has been orally questioned and achieved, your assessor will record this evidence in written form or by other appropriate means. There is no need for you to produce additional evidence as this criterion has already been achieved.

Some knowledge and understanding outcomes may require you to show that you know and understand how to do something. If you have practical evidence from your own work that meets knowledge criteria, then there is no requirement for you to be questioned again on the same topic.

Learning outcome 1 1. Explore relevant legislation and their influence on the safe use of data	1.1 Relevant Legislation for industry: - • UK General data Protection (GDPR) • Data Protection Act 2018 • Digital Economy Act 2017 • Computer Misuse Act 1990
Learning outcome 2 2. Investigate the impact of relevant security standards, security frameworks and organisational policies and procedures on data management activities	2.1 Security standards and security frameworks: • Payment Card Industry Data Security Standard (PCI DSS) • International Organisation for standardisation (ISO) • International Electrotechnical Commission (IEC) 27001

	2.2 Organisational policies and procedures relevant to data management activities: • Encryption Policies • Backup and recovery procedures 2.3 Data Management Activities • Governance • Integration • Analysis 2.4 Principles of privacy by design • Privacy by default • Proactive not reactive • End-to-end security
Learning outcome 3 3. Examine ethical data principles and the role of artificial intelligence (AI) in the collation and utilisation of data	3.1 Ethical data principles: - • Transparency • Accountability • Fairness • Accuracy • Privacy 3.1 Ethical responsibilities within the role of data analytics 3.3 The use of AI in the collation and utilisation of data: - • Reliability • Accuracy • Bias
Learning outcome 4 4. Demonstrate effective use and compliance of data systems when securely collating and utilising data	4.1 Skills-Use of data systems • Information system • Management system • Reporting system 4.2 Compliance • Legislation • Standards • Policies • Procedures 4.3 Principles • Privacy by design

Unit 801 Data fundamentals and lifecycle

UAN: D/651/0925

Level: 4

Credit value: 20

GLH: 90

Aim

This unit delves into the foundational aspects of understanding, organising and effectively utilising data within organisations.

Knowledge of outcomes

You will be guided by your tutor and assessor on the evidence that needs to be produced. Your knowledge and understanding will be assessed using the assessment methods listed below*:

- Projects
- Observed work
- Witness statements
- Audio-visual media
- Evidence of prior learning or attainment
- Written questions
- Oral questions
- Assignments
- Case studies
- Professional discussion

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When a criterion has been orally questioned and achieved, your assessor will record this evidence in written form or by other appropriate means. There is no need for you to produce additional evidence as this criterion has already been achieved.

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Learning outcome 1	
1. Explore the purpose of different data types and their use, characteristics, and applications	1.1 Qualitative and quantitative data types: - • Discrete (integer) • Continuous (Float) • Text (string) • Geospatial (Co-ordinate pair) • Logical (Boolean) • Temporal (Date and Time) 1.2 Different types of datasets: - • Open to public • Administrative data • Research data 1.3 Common linear and non-linear data structures: - • Lists • Array

	• Stack • Heap
Learning outcome 2 2. Perform analysis of datasets and relevant data structures	2.1 Interpret datasets, consisting of qualitative and quantitative data 2.2 Use of relevant data structures 2.3 Application of principles of data classification
Learning outcome 3 3. Examine the importance of data classification and considerations needed for data management	3.1 Types of data classification: - • Sensitivity • Critically 3.2 Data management when working with data: - • Sharing • Ownership • Storage • Quality • Lineage 3.3 Purpose of metadata: - • Identifying source • Recency • Size • Identifying data owners
Learning outcome 4 4. Implement the fundamental principles of the data lifecycle	4.1 Stages of the data lifecycle when carrying out routine data analysis tasks: - • Data creation • Data storage • Data sharing and usage • Data Archival • Data deletion 4.2 The role and relationship between each stage of the data lifecycle in ensuring data integrity 4.3 Requirements of each stage of the data lifecycle 4.4 Skills: Application of the data lifecycle in relation to routine daily data analysis tasks

Unit 803 Data structure and databases

UAN: F/651/0926

Level: 4

Credit value: 20

GLH: 90

Aim

This unit provides an in-depth exploration of the essential principles in database system design, implementation and maintenance within the context of data analytics. This unit equips learners with the knowledge and skills to effectively manage data structures and databases to support the analytical needs of modern organisations.

Knowledge of outcomes

You will be guided by your tutor and assessor on the evidence that needs to be produced. Your knowledge and understanding will be assessed using the assessment methods listed below:

- Projects
- Observed work
- Witness statements
- Audio-visual media
- Evidence of prior learning or attainment
- Written questions
- Oral questions
- Assignments
- Case studies
- Professional discussion

Where applicable your assessor will integrate knowledge outcomes into practical observations through professional discussion and/or oral questioning.

When a criterion has been orally questioned and achieved, your assessor will record this evidence in written form or by other appropriate means. There is no need for you to produce additional evidence as this criterion has already been achieved.

Some knowledge and understanding outcomes may require you to show that you know and understand how to do something. If you have practical evidence from your own work that meets knowledge criteria, then there is no requirement for you to be questioned again on the same topic.

Learning outcome 1	1.1 Examine the fundamentals of database system design
1. Examine the fundamentals of database system design	• Relational • Non-relational
	1.2 The impact of the following factors on database system design: -
	• Scalability • Security Considerations • Platform Selection • Data quantity • Adaptability to change
	1.3 Phases of database development lifecycle
	1.4 How the data analysis lifecycle supports database system design

Learning outcome 2 2. Explore the application of data modelling and database design and the implementation and maintenance of database systems and processes	2.1 The process and purpose of data modelling 2.2 Database design tools: - • Entity relationship diagram (ERD) • Data flow diagram (DFD) 2.3 The characteristics and uses of different data formats in relational and non-relational databases: - • Structured • Unstructured • Semi Structured 2.4 The process of database system implementation: • Data Migration • Testing 2.5 The importance of database system maintenance: - • Scheduled routine maintenance • Regular data backups 2.6 Skills: Use the data analysis lifecycle to: • Define the data's purpose • Create a DFD • Identify how design supports future analysis
Learning outcome 3 3. Investigate common quality risks in data and implement mitigation techniques	3.1 Types of inconsistencies in data and the potential impacts on an organisation (for example, aged data, data types) 3.2 Quality risks associated with using unclean data 3.3 Risks involved when combining data from multiple sources 3.4 Risk mitigation or resolution techniques: - • Validation of original source • Cleansing • Model enhancement 3.5 Key considerations when escalating data risks or identifying resolutions (for example, following policy and procedures, in a timely manner, through appropriate channels) and their importance 3.6 Skills: Analyse and identify quality risks in data and potential causes, suggesting potential mitigations or resolutions as part of escalation

Unit 803 Stakeholder engagement and user experience in data analytics

UAN: H/651/0927

Level: 4

Credit value: 20

GLH: 90

Aim

This unit explores the critical aspects of optimising user experience and adopting effective stakeholder engagement within the realm of data analytics. This unit empowers learners to understand the factors that influence user experience and to adeptly define stakeholder requirements to ensure meaningful and impactful data analysis outcomes.

Knowledge of outcomes

You will be guided by your tutor and assessor on the evidence that needs to be produced. Your knowledge and understanding will be assessed using the assessment methods listed below:

- Projects
- Observed work
- Witness statements
- Audio-visual media
- Evidence of prior learning or attainment
- Written questions
- Oral questions
- Assignments
- Case studies
- Professional discussion

Where applicable your assessor will integrate knowledge outcomes into practical observations through professional discussion and/or oral questioning.

When a criterion has been orally questioned and achieved, your assessor will record this evidence in written form or by other appropriate means. There is no need for you to produce additional evidence as this criterion has already been achieved.

Some knowledge and understanding outcomes may require you to show that you know and understand how to do something. If you have practical evidence from your own work that meets knowledge criteria, then there is no requirement for you to be questioned again on the same topic.

Learning outcome 1	1.1	Identifying internal and external stakeholders
1. Examine how to plan and deliver an effective analysis for a range of stakeholders	1.2	Approaches to collecting stakeholder requirements (for example, interviews)
	1.3	The importance of identifying the scope of data analysis, including timescales, purpose, expected outcomes and the impact of scope creep
	1.4	The role and structure of use cases, user stories and scenarios in documenting user requirements
	1.5	Factors that could influence data analytic planning (for example, constraints and resource availability)
	1.6	The importance of identifying dataset

		needs and where these will be sourced, including internal and external data
Learning outcome 2 2. Demonstrate how to collate and display data using the most appropriate visualisation tools and assess the impact on user experience	2.1 • Use of visualisation tools: • Infographics • Reports • Tables • Dashboards • Charts/graphs 2.2 Assess the impact of the user experience on the data analysis activity	
Learning outcome 3 3. Explore factors that can impact user experience in relation to data analytics	3.1 Accessibility measures that can be applied to improve end-user experience (for example, colour, font, layout) 3.2 The application of usability theories to improve end-user experience: - • Fitt's Law • Miller's Law • Nielsen's Usability Heuristics 3.3 How end-user requirements influence the way that data is presented 3.4 The potential impacts of not meeting end-user requirements when 3.5 Skills: presenting data 3.5 Skills: Undertake analysis based on stakeholder requirements 3.6 Implement findings of data analytics into planning and document outputs 3.7 Collaborate and communicate with stakeholders to understand requirements, taking into account: - • Stakeholder type • Styles and behaviours • Utilisation of technology	

Unit 804 Organisational data

UAN: J/651/0928

Level: 4

Credit value: 20

GLH: 90

Aim

This unit provides a detailed exploration of data analytics within an organisational context. It focuses on approaches to data combination for matching and comparing data, data architecture, and the tools used in data analytics.

Knowledge of outcomes

You will be guided by your tutor and assessor on the evidence that needs to be produced. Your knowledge and understanding will be assessed using the assessment methods listed below:

- Projects
- Observed work
- Witness statements
- Audio-visual media
- Evidence of prior learning or attainment
- Written questions
- Oral questions
- Assignments
- Case studies
- Professional discussion

Where applicable your assessor will integrate knowledge outcomes into practical observations through professional discussion and/or oral questioning.

When a criterion has been orally questioned and achieved, your assessor will record this evidence in written form or by other appropriate means. There is no need for you to produce additional evidence as this criterion has already been achieved.

Some knowledge and understanding outcomes may require you to show that you know and understand how to do something. If you have practical evidence from your own work that meets knowledge criteria, then there is no requirement for you to be questioned again on the same topic.

Learning outcome 1 1. Explore common data combination techniques and identify data sources	1.1 The purpose and use of common techniques for matching and comparing data: - • Exact matching • Fuzzy matching • Data profiling • Data standardisation • Record linkage 1.2 Skills: Identify appropriate data sources for analysis activity 1.3 Identify risks and challenges to data combination
Learning outcome 2 2. Examine common data analytics methods and the functions and features of the tools	2.1 The application of common methods used within data analytics: • Data mining • Predictive analytics

used to support this	• Time series forecasting 2.2 Functions and features of common data analytics tools: - • Programming languages (python, structured query language (SQL)) • tools (pivot tables, dashboards) • Vendor specific software 2.3 How factors influence the selection of tools and methods for data analysis, including: • Structure of data • Size of dataset • Complexity • Reporting objective 2.4 The characteristics of storage repositories and their suitability to meet organisational requirements: • Data warehouse • Data mart • Data lake 2.5 Skills- Create a logical data model to meet organisational requirements
Learning outcome 3 3. Investigate organisational data architecture and demonstrate how to design data models	3.1 The role and purpose of organisational data architecture in managing data (for example, data collection) 3.2 The application of data models to support the visual representation of organisational data flow, including: - • Conceptual • Logical • Physical 3.3 The characteristics of storage repositories and their suitability to meet organisational requirements: • Data warehouse • Data mart • Data lake 3.4 Skills- Create a logical data model to meet organisational requirements

Unit 805 Data mining and statistical analysis

UAN: K/651/0929

Level: 4

Credit value: 30

GLH: 120

Aim

This unit allows learners to embark on a journey into the realm of data mining and statistical analysis, acquiring indispensable knowledge and skills to extract meaningful insights from complex datasets.

Knowledge of outcomes

You will be guided by your tutor and assessor on the evidence that needs to be produced. Your knowledge and understanding will be assessed using the assessment methods listed below:

- Projects
- Observed work
- Witness statements
- Audio-visual media
- Evidence of prior learning or attainment
- Written questions
- Oral questions
- Assignments
- Case studies
- Professional discussion

Where applicable your assessor will integrate knowledge outcomes into practical observations through professional discussion and/or oral questioning.

When a criterion has been orally questioned and achieved, your assessor will record this evidence in written form or by other appropriate means. There is no need for you to produce additional evidence as this criterion has already been achieved.

Some knowledge and understanding outcomes may require you to show that you know and understand how to do something. If you have practical evidence from your own work that meets knowledge criteria, then there is no requirement for you to be questioned again on the same topic.

Learning outcome 1 1. Examine the purpose of common statistical methodologies and their application to meet requirements	1.1 Statistical types and methods: - • Descriptive statistics • Probability distributions • Hypothesis testing • Analysis of variance (ANOVA) • Correlation Analysis 1.2 Skills: Apply statistical methods to meet data analysis requirements
Learning outcome 2 2. Explore the purpose and application of statistical analysis	2.1 The purpose and application of descriptive, predictive and prescriptive analytics 2.2 Factors that influence the selection of an analytical model: - • Classification

	• Regression • clustering 2.3 Statistical programming languages and tools used when manipulating and processing data (for example, SQL, Python, R) 2.4 The use of data preparation techniques for statistical analysis (for example, sorting, grouping, filtering)
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