e-Quals Unit Syllabus

Level 2 Designing and creating Databases

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City & Guilds
1 Giltspur Street
London EC1A 9DD
T +44 (0)20 7294 2800
F +44 (0)20 7294 2400
www.cityandguilds.com
enquiry@cityandguilds.com

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Rationale

The aim of this unit is to equip candidates with the opportunity to develop skills appropriate to the use of database software including multiple condition searches, sorting and indexing, create forms, create reports and produce hard copy.

The aim of this unit is to provide candidates with an intermediate level of skills and knowledge to competently prepare for, and perform a variety of *database related tasks* using Information and Communication Technologies (ICT). Candidates will develop a more demanding understanding of the database application and the operating system in everyday usage and the ability to work in a generally unsupervised role solving issues competently without direction.

Learning outcomes

There are **seven** outcomes to this unit. The candidate will be able to:

- Apply database concepts
- Design, create and modify a database structure
- Design, create and use a data entry form
- Edit and maintain a database
- Sort and index a database
- Carry out single and multiple condition searches or queries
- Create and modify a report and produce hard copy output

Guided learning hours

It is recommended that 60 hours should be allocated for this unit. This may be on a full time or part time basis.

Connections with other qualifications

This unit contributes towards the knowledge and understanding required for the following qualifications:

- N/SVQ in Customer Service, units
  - 201, 202, 203, 204
- ICS Customer Service Technical Certificate, units
  - 1.1, 1.2, 1.3, 1.4, 1.5, 1.6
  - 2.1, 2.4, 2.5, 2.7
  - 3.3, 3.4, 3.5

Assessment and grading

This unit will be assessed by an assignment covering practical skills.

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Outcome 1 Apply database concepts

Practical activities

The candidate will be able to:

1 identify and use:
   - a table for storing data
   - b query for retrieving records according to criteria
   - c form for screen based data entry
   - d report for presentation of information

2 use and describe data types eg
   - a character or text
   - b numeric
   - c date/time
   - d currency
   - e logical

3 make backup copies of the data files/tables using filenames which identify them as backup copies, storing them in a suitably identified location.

Underpinning knowledge

The candidate will be able to:

1 describe the basic concepts of databases

2 describe the importance of file management within a database file structure.

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Outcome 2 Design, create and modify a database structure

Practical activities

The candidate will be able to:

1 design and create database structures using appropriate field names, data types, specifying additional attributes or properties of the fields where appropriate

2 modify database structures eg

- a insert new fields
- b modify the data type of existing fields
- c modify the attributes or properties of existing fields
- d delete an existing field
- e define a primary key for an appropriate table/file
- f remove a primary key from an existing table/file

3 apply validation on numeric, date, or 'text string' data using boolean expressions singly or in combination eg =, >, <, <> and/or 'between', 'like', 'In' etc

4 copy an existing database structure definition for use with new data

5 save and print database structures

6 enter data into a database

7 import structure and/or data from comma delimited files

8 merge data files.

Underpinning knowledge

The candidate will be able to:

1 explain the term primary key

2 explain why data validation is important

3 describe a database structure in terms of field names and data types including the attributes or properties of the fields where applicable, eg field length, date format

4 describe the impact of design on the database function.

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Outcome 3 Design, create and use a data entry form

Practical activities

The candidate will be able to:

1 design and create data entry forms for screen input

2 modify data entry forms for screen input

3 use data entry forms for inputting of data

4 use data entry forms for editing of data

5 save data entry forms using an appropriate name

6 print data entry forms.

Underpinning knowledge

The candidate will be able to:

1 describe the importance of user-friendly design principles when creating a data entry form.

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Outcome 4 Edit and maintain a database

Practical activities

The candidate will be able to:

1 open an existing database and display the records and fields for editing

2 find and replace the contents of fields with new entries in one or more records

3 select records for deletion

4 delete selected records

5 edit an existing record

6 add a new record

7 extract selected records from a database table/file

8 append selected records to a database table/file.

Underpinning knowledge

The candidate will be able to:

1 describe why data may need to be extracted from one database and stored in another database.

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Outcome 5 Sort and index a database

Practical activities

The candidate will be able to:

1 apply an index criterion to secondary key fields

2 sort the records according to a specified criteria.

Underpinning knowledge

The candidate will be able to:

1 describe and identify primary and secondary fields in relation to sorting and multiple field indexes

2 identify the advantages of indexing fields

3 state that a primary key is automatically indexed.

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Outcome 6 Carry out single and multiple condition searches or queries

Practical activities

The candidate will be able to:

1 define and execute a single condition search on a logical field

2 define and execute multiple condition searches on a date field

3 define and execute a single condition search on a logical field

4 define and execute a multiple condition search on two or more fields of differing data types

5 define and execute a condition to search for specified characters in a character or text field

6 use a wild card to search for specified data eg 'Like *t*' to find t in a given text string

7 use logical operators in a search

8 use relational operators in a search.

Underpinning knowledge

The candidate will be able to:

1 describe the use of a filter

2 decribe the purpose and use of wildcards to search

3 describe and use logical operators in a search

- a AND
- b OR
- c NOT

4 describe and use relational operators in a search

- a equals =
- b less than <
- c greater than >
- d less than or equal to <=
- e greater than or equal to >=
- f not equal to <>.

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Outcome 7 Create and modify a report and produce hard copy output

Practical activities

The candidate will be able to:

1 create a report based on search conditions (queries) with headings, subheadings and totals ensuring all data is fully displayed in a specified orientation, showing:

- a all records and all fields
- b selected records and all fields
- c selected records and selected fields

2 modify a report

- a rearrange the order in which fields are displayed
- b format fields: field width, alignment of the data, font size and style
- c insert a graphic/image

3 insert headers and footers

4 use print options for report layout

5 save a report

6 print a report .

Unit record sheet

Use this form to track your progress through this unit.

Tick the boxes when you have covered each outcome. When they are all ticked, you are ready to be assessed.

Outcome	✓	Date
1 **Apply database concepts**	☐	
2 **Design, create and modify a database structure**	☐	
3 **Design, create and use a data entry form**	☐	
4 **Edit and maintain a database**	☐	
5 **Sort and index a database**	☐	
6 **Carry out single and multiple condition searches or queries**	☐	
7 **Create and modify a report and produce hard copy output**	☐	

Candidate Signature ..... **Date** .....

City & Guilds Registration Number .....

Quality nominee (if sampled) ..... **Date** .....

Assessor Signature ..... **Date** .....

External Verifier Signature (if sampled) ..... **Date** .....

Centre Name ..... **Centre Number** .....

Published by City & Guilds
1 Giltspur Street
London
EC1A 9DD
T +44 (0)20 7294 2468
F +44 (0)20 7294 2400
www.cityandguilds.com
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