e-Quals Unit Syllabus

Level 2 Designing and creating spreadsheets

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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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Unit 023 Designing and creating spreadsheets

Syllabus Overview

Rationale

A candidate who successfully completes this unit will be able to implement spreadsheet applications, design and create spreadsheets, to use spreadsheets to import data and produce abstracts, and to summarise data with charts.

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 *spreadsheet related tasks* using Information and Communication Technologies (ICT). Candidates will develop a more demanding understanding of the spreadsheet 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 **five** outcomes to this unit. The candidate will be able to:

- Design a spreadsheet to meet a given specification
- Input and test a spreadsheet
- Link, import and extract data
- Produce graphs and charts
- Export and print spreadsheets

Guided learning hours

It is recommended that 65 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:

IT Users N/SVQ (ITQ) Level 2

Outcome	Unit	
1, 2, 3	201	Make selective use of IT 2
1, 2, 3, 4	202	Operate a computer 2
1, 2, 3	208	Word processing software 2
1, 2, 3	209	Spreadsheet software 2
1, 2, 3, 4, 5	217	Use IT systems 2

Key Skills

This unit contributes towards the Key Skills in the following areas:

Application of number	N 1.3, N 2.1, N 2.2
Communication	C 2.3
IT	IT 2.3
Working with others	
Problem solving	PS 2.1, PS 2.2, PS 2.3
Improving own learning	

ICT Skills for Life

	Level 2 – 2.1
Using ICT systems	
Finding and exchanging information	-
Developing and presenting information	Level 2 – 6a.1, 6a.2, 6a.4, 6a.5, 6c.1, 6c.2, 6c.3, 7.1

Assessment and grading

Assessment will be by means of a **set assignment** covering both practical activities and underpinning knowledge.

Unit 023 Designing and creating spreadsheets

Outcome 1 Design a spreadsheet to meet a given specification

Practical activities

The candidate will be able to:

1 create a data capture form to facilitate data input

2 identify data in a spreadsheet specification eg
- a data to be input
- b data generated while processing
- c output data required

3 plan a spreadsheet structure to include eg
- a data labels, column and row titles
- b hidden and/or protected cells
- c cell and range naming
- d worksheet naming
- e absolute and relative sheet and cell references
- f header/footer information

4 use suitable formats for data
- a alignment eg left, centre, right
- b text enhancements eg bold, italic, underlined
- c cell attributes eg size, borders, background
- d numbers eg general, fixed, percentage, currency, date/time

5 perform calculations using formulas

6 perform calculations using functions eg
- a maximum
- b minimum
- c count
- d round
- e date

7 create and use IF statements

8 calculate the result of IF statements

9 use the LOOKUP function

10 define the printout required for a given application
- a page size & orientation,
- b margins, multi-page or fit-to-page
- c headers and footers

11 create test data to validate the spreadsheet with associated results of independent calculations eg representative, marginal, rogue and extreme values.

Underpinning knowledge

The candidate will be able to:

1 describe the need for accuracy in design, data input and clear output

2 distinguish between input data, output data and data processing, in spreadsheets

3 identify the kinds of data that should be protected and/or hidden in a spreadsheet

4 describe how the design of the spreadsheet and the accuracy of data input, impact on the output data.

Unit 023 Designing and creating spreadsheets
Outcome 2 Input and test a spreadsheet

Practical activities
The candidate will be able to:

1 create a spreadsheet according to a given design
   a enter titles and headings
   b enter formulas, functions and constant data
   c format columns, rows and cells appropriately, including conditional format
   d hide and/or protect cells
2 improve and adjust design to facilitate data entry and output including sort
3 insert, delete and clear: cells, rows and columns
4 move and copy cell data, formulas and formats
5 use search and replace to edit data/formulas
6 use split/freeze window to retain column- and row-heading visibility
7 test a spreadsheet
   a input test data and compare results with expected outcomes
   b rectify errors in design or in design implementation
8 set a spreadsheet to show formulas and filters.

Underpinning knowledge
Candidates will be able to

1 identify the advantages of using freeze panes, screen borders and windows
2 describe commonly used cell formats and relate them to typical numeric data used
3 define the relational operators equal to (=, greater than (>), less than (<) and not equal to <> singly and in combination.

Unit 023 Designing and creating spreadsheets
Outcome 3 Link, import and extract data

Practical activities
The candidate will be able to:

1 copy values and formulas from one spreadsheet into another

2 create cell references that link spreadsheets

3 create new spreadsheets from sections of existing spreadsheets

4 import comma delimited files (.csv) containing both spreadsheet structure and data for editing

5 save edited Spreadsheets to (with suitable file name, extension and version control)

- a hard drive
- b removable/portable media
- c remote (network) location.

Unit 023 Designing and creating spreadsheets
Outcome 4 Produce graphs and charts

Practical activities

The candidate will be able to:

1 select and use chart type to suit data
   - a pie - single data series 100%
   - b bar - grouped/discrete data - especially comparing size
   - c column - grouped/discrete data - especially showing time variation
   - d line - continuous data, trends at equal intervals
   - e XY & scatter - dependent and independent values, unequal intervals and logarithmic scales

2 format chart information to suit data
   - a titles and axes labels
   - b axes scales and limits
   - c gridlines, and gridline density
   - d legends and data labels

3 format chart presentation by changing
   - a background
   - b line, area, and text attributes
   - c chart size relative to spreadsheet
   - d colours/patterns to suit monochrome/colour output.

Underpinning knowledge

The candidate will be able to:

1 identify reasons why different types of chart are suited to different types of data.

Unit 023 Designing and creating spreadsheets
Outcome 5 Export and print spreadsheets

Practical activities

The candidate will be able to:

1 print out spreadsheets to requirements eg
   - a monochrome/colour printing facilities
   - b selected areas or whole sheet
   - c as single charts
   - d using borders
   - e with/without headers and footers
   - f fit to one page
   - g with/without repeated table headings
   - h including/excluding graphics
   - i values/formulas

2 export data or graphic to another spreadsheet file

3 save as delimited text file (.csv).

Underpinning knowledge

The candidate will be able to:

1 identify the differences between copying data values, linking data values and pasting data objects.

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 **Design a spreadsheet to meet a given specification**	☐	
2 **Input and test a spreadsheet**	☐	
3 **Link, import and extract data**	☐	
4 **Produce graphs and charts**	☐	
5 **Export and print spreadsheets**	☐	

Candidate Name ..... **Date** .....

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

City & Guilds Registration Number ....

Assessor Signature ..... **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
www.cityandguilds.com/e-quals07

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