

Unit 87: Information and Communication Technology for Construction and the Built Environment

Unit code: K/600/0443

QCF Level: 2

Credit value: 10

Guided learning hours: 60

Unit aim

This unit will enable learners to develop the skills needed to use computer systems for communicating information, understand e-sources of information, and produce word-processed documents and spreadsheets to meet the needs of the construction and the built environment sector.

Learning outcomes and assessment criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

Learning outcomes	Assessment criteria
1 Be able to use computer operations and web-based communication to send, receive and securely manage data files for construction and the built environment	1.1 Describe how to manage data files securely
	1.2 Use computer operations to send and receive data using web-based communications
2 Understand specialist e-format information sources and safeguards for their use	2.1 Describe the types and formats of specialist ICT information sources used in construction and the built environment
	2.2 Discuss safeguards for finding and using data in e-format
3 Be able to process and manipulate data in word-processing applications for construction and the built environment	3.1 Enter text and other information into a document
	3.2 Use editing tools to amend document content
	3.3 Create and modify layout and structures for word-processed

	documents
	3.4 Format and quality check documents for different types of audience
4 Be able to process and manipulate data in spreadsheet applications for construction and the built environment	4.1 Enter and edit spreadsheet data accurately
	4.2 Use appropriate formulae and functions to meet calculation requirements
	4.3 Analyse and manipulate the required information
	4.4 Format spreadsheet cells, rows, columns and worksheets for presenting information
	4.5 Generate, develop and format charts and graphs

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THIS IS AN ACCREDITED SPECIFICATION AND CAN BE USED FOR TEACHING AND ASSESSMENT

Unit content

1 Be able to use computer operations and web-based communication to send, receive and securely manage data files for construction and the built environment

Manage data files: types of file eg DWG/DXF/DWF; specialist management software; workflow tracking and reporting; real-time mark-up and reviews; data security (back-up routines; file sharing); server security; Data Protection Act

Operations: boot-up routines; accessing and closing standard software programs (email, word processors, spreadsheets); printing routines; standard commands; simple file systems

Web-based communication: ISPs; search engine techniques; emails; download formats eg pdf; intranets; project extranets

2 Understand specialist e-format information sources and safeguards for their use

Specialist information sources: eg construction websites/CDs/DVDs; information portal websites; commercially available online technical libraries; specialist regional and national government websites; local authority web links to planning, building control and transport information; research/academic websites

Safeguards: checking the validity of information eg reliability of source, cross-referencing, publication dates; quality of information eg graphics, content, fitness for purpose; firewalls; virus-checkers

3 Be able to process and manipulate data in word-processing applications for construction and the built environment

Enter text: templates (new, existing)

Other information: graphics; spreadsheet data

Editing tools: appropriate to the type of information eg select, copy, cut, paste, drag and drop, undo, redo, find, replace, insert, delete, size, crop, position

Layout and structures: create and alter table structure eg insert and delete cells, rows and columns, merge and split cells; alter table properties eg row height and column width, horizontal and vertical text alignment, cell margins; page layouts eg paper size and type, page orientation, margins, page breaks, section breaks; format header and footer eg page number, date and time; adjust page set-up for printing

Format: characters eg font style and size, colour, bold, italic, underline, superscript, subscript; paragraphs eg alignment, justification, bullets, numbering, line spacing, borders, shading, widows and orphans; tabs and indents; columns eg add and delete columns, modify column width, add columns to whole or parts of a page

Quality checking: software tools eg spellcheck, grammar check, print preview, language and dictionary settings; other eg font style and size, hyphenation, page layout, margins, line and page breaks, tables, accuracy, consistency, clarity

Audience types: individuals; groups; context eg business, social

4 Be able to process and manipulate data in spreadsheet applications for construction and the built environment

Enter and edit: entering data into single cells; insert data into multiple cells at once; replicate data; find and replace; absolute and relative cell references; entering data accurately; adding images to spreadsheets; linking cells between different worksheets; use of paste

Formulae: simple mathematical formulae (add, subtract, divide, multiply) eg calculating VAT, totalling columns of figures; complex formulae involving two-stage calculations eg calculations of pay based on basic hours and overtime; typical errors eg circular references; techniques used to sort out problems eg use of reveal formulae, formula wizards; use of help systems

Functions: statistical functions eg sum, average, min, max, count, countif

Analyse and manipulate data: totals; sub-totals and summary data; sorting and display order; filter rows and columns; converting spreadsheet data to charts and graphs

Format cells: numbers; currency; percentages; number of decimal places; font; alignment; shading; borders; date and time formats; wrap text

Format rows and columns: height; width; borders; shading; hide; freeze

Presenting information: appropriate data types (text, currency and date); formatting cells (colours, shading, alignment, borders); other formatting eg increasing/decreasing decimal points, merging cells

Charts and graphs: simple chart eg pie, bar, single line graph; complex charts eg area, column, x-y scatter, stock, radar, doughnut, surface

Format charts and graphs: titles (axis and chart); legend; change chart type; move and resize chart