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KS4 PERFORMANCE TABLES

Mapping guide

OCR Level 1/Level 2

Cambridge National in
Engineering Design

J822

For first teaching in 2022 | Version 1

**Mapping the redeveloped Cambridge National in
Engineering Design (J822) to the current specification**

ocr.org.uk/cambridgenationals

We have updated our Cambridge Nationals for first teaching 2022 with first assessment in Summer 2024.

To make our changes we have worked in very close partnership with teachers, actively consulting at each stage of the development.

We are confident that our updates make our Cambridge Nationals qualifications the best option for teachers and students who are looking for an engaging and highly relevant vocational curriculum.

We make sure our Cambridge Nationals are accessible to a range of students, with a focus on vocational learning. Students will have the chance to learn and develop key practical skills that they can apply to real-life contexts and work situations.

We have created this mapping guide to help you move from the current Cambridge Nationals qualifications by highlighting which elements of the redeveloped qualification remain the same as before and where new content has been included.

This mapping guide

In the tables that follow, you can see:

- redeveloped unit details including Topic Area (TA) number and titles
- how the redeveloped units map to the current specification units that you may already know, at learning outcome level
- brief comments about the changes we've made
- **that all redeveloped units and Topic Areas (TAs) map** to the current qualification – there are no new units in this redeveloped Cambridge National
- **that all current units and LOs map** to the redeveloped qualification – there isn't a unit in the current specification that doesn't feature in our redeveloped Cambridge National.

For reference, the current specification unit and LO titles are included in the appendix.



In each unit, you'll see we now have teaching content in Topic Areas instead of learning outcomes. Read more in our [redeveloped specification](#)

Mapping

Redeveloped Cambridge National		Current Cambridge National		
Cambridge National in Engineering Design (First teach 2022)		Cambridge National in Engineering Design J831, J841		
Unit R038 Principles of engineering design Examined, mandatory unit		Unit number	LO number	Comment
Topic Area number	Topic Area title			
1	Designing processes	R105	LO1	Updated to include wider range of different design methodologies; analysis of existing products now covered using ACCESSFM
2	Design requirements	R105	LO2	Similar content but with more definition across specific design criteria
		R105	LO3	Some elements relating to influences on engineering product design taken from old specification
		R106	LO1	Most elements relating to scales of production, commercial production methods, legislation and end of life taken from old specification
3	Communicating design outcomes	R105	LO2	Better definition of the specific features of engineering drawings and their role in engineering design; also includes reference to CAD

Redeveloped Cambridge National

Current Cambridge National

Cambridge National in Engineering Design (First teach 2022)

Cambridge National in Engineering Design J831, J841

R039 Communicating designs NEA, mandatory unit		Unit number	LO number	Comment
Topic Area number	Topic Area title			
1	Manual production of freehand sketches	R107	LO1	Same as old specification; requirement to use ICT for enhancements removed
2	Production of engineering drawings	R107	LO2	Same as old specification but specific requirements better defined
3	Use of computer aided design (CAD)	R107	LO3	Same as old specification but specific requirements better defined

R040 Design, evaluation and modelling NEA, mandatory unit		Unit number	LO number	Comment
Topic Area number	Topic Area title			
1	Product evaluation	R106	LO2	Analysis of existing products now to be carried out using ACCESSFM
		R106	LO3	Product disassembly and analysis is same as old specification
2	Modelling design ideas	R108	LO1	Planning for making a prototype, selection of materials, safe use of tools and processes to make a prototype and identifying potential improvements now focused into one LO. Additional requirement to create and simulate a 3D CAD model in new specification
		R108	LO2	
		R108	LO3	
		R108	LO4	

Current qualification units and learning outcome (LO) titles

R105	Design briefs, design specifications and user requirements	LO1	Understand the design cycle and the relationship between design briefs and design specifications
		LO2	Understand the requirements of design specifications for the development of a new product
		LO3	Know about the wider influences on the design of new products
R106	Product analysis and research	LO1	Know how commercial production methods, quality and legislation impact on the design of products and components
		LO2	Be able to research existing products
		LO3	Be able to analyse an existing product through disassembly
R107	Developing and presenting engineering designs	LO1	Be able to generate design proposals using a range of techniques
		LO2	Know how to develop designs using engineering drawing techniques and annotation
		LO3	Be able to use Computer Aided Design (CAD) software and techniques to produce and communicate design proposals
R108	3D design realisation	LO1	Know how to plan the making of a prototype
		LO2	Understand safe working practices used when making a prototype
		LO3	Be able to produce a prototype
		LO4	Be able to evaluate the success of a prototype

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