

INCLUDED ON THE
KS4 PERFORMANCE TABLES

Mapping guide

OCR Level 1/Level 2

Cambridge National in
Engineering Manufacture

J823

For first teaching in 2022 | Version 1

**Mapping the redeveloped Cambridge National in
Engineering Manufacture (J823) 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
- the **current units and LOs that do not** map to the 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 Manufacture
(First teach 2022)

Cambridge Nationals in
Engineering Manufacture J832, J842

R014 Principles of engineering manufacture Examined, mandatory unit		Unit number	LO number	Comment
Topic Area number	Topic Area title			
1	Manufacturing processes	R109	LO2	Same as old specification but specific requirements better defined
2	Engineering materials	R109	LO1	Same as old specification but specific requirements better defined
3	Manufacturing requirements	R110	LO1	Requirements for interpreting engineering drawings better defined in new specification
		R110	LO3	Scales of production, and use of jigs, fixtures and templates taken from old specification into one LO in new specification
		R111	LO1/LO3/LO4	
		R111	LO3	Selected parts of automation, and advantages and limitations of Computer Aided Manufacture (CAM) taken from old specification into one LO in new specification
		R111	LO4	
		R112	LO1/LO2	Selected parts of Quality Control and Quality Assurance taken from old specification into one LO in new specification
4	Developments in engineering manufacture	R109	LO4	Selected developments in engineering manufacture taken from old specification

Redeveloped Cambridge National

Current Cambridge National

Cambridge National in Engineering Manufacture (First teach 2022)

Cambridge Nationals in Engineering Manufacture J832, J842

R015 Manufacturing a one-off product NEA, mandatory unit		Unit number	LO number	Comment
Topic Area number	Topic Area title			
1	Planning the production of a one-off product	R110	LO1	Same as old specification but specific requirements better defined
2	Measuring and marking out	R110	LO2	Selected parts related to marking out taken from old specification
		R110	LO2	Selected parts of using measuring instruments taken from old specification into one LO in new specification
		R112	LO2	
3	Safely use processes, tools and equipment to make a product	R110	LO2	Selected parts related to safe use of hand tools, manual machining and other processes (such as joining) taken from old specification

R016 Manufacturing in quantity NEA, mandatory unit		Unit number	LO number	Comment
Topic Area number	Topic Area title			
1	Preparing for manufacture	R111	LO1	Similar to preparation for manufacture using CNC equipment from old specification but specific requirements better defined; now includes production of Standard Operating Procedures (SOPs)
2	Develop programmes to operate CNC equipment	R111	LO2	Same as old specification but specific requirements better defined; based on CAD/CAM setup and simulation; no requirements to interpret G & M codes
3	Safely use processes and equipment to make products in quantity	R111	LO3	Same as old specification but specific requirements better defined
		R112	LO1/LO2	Similar to practical Quality Control checks in old specification but more closely related to volume manufacture; now includes statistical process control

Current content not in the redeveloped specification

Current unit number	Current unit title	Current LO number	Current LO title
R112	Quality control of engineered products	L03	Know how modern technologies can be used in quality control
		L04	Know the principles of lean manufacturing

Current qualification units and learning outcome (LO) titles

R109	Engineering materials, processes and production	LO1	Know about properties and uses of engineering materials
		LO2	Understand engineering processes and their application
		LO3	Know about developments in engineering processes
		LO4	Understand the impact of modern technologies on engineering production
R110	Preparing and planning for manufacture	LO1	Be able to plan for the making of a pre-production product
		LO2	Be able to use processes, tools and equipment safely to make a pre-production product
		LO3	Be able to modify a production plan for different scales of production
R111	Computer aided manufacturing	LO1	Be able to plan the production of components on Computer Numerical Control (CNC) machines
		LO2	Be able to interpret information from Computer Aided Design (CAD) to manufacture components on CNC equipment
		LO3	Be able to set-up and use CNC equipment to manufacture components
R112	Quality control of engineered products	LO1	Understand the importance of quality control
		LO2	Be able to assess product quality from inspection and quality control techniques
		LO3	Know how modern technologies can be used in quality control
		LO4	Know the principles of lean manufacturing

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