Pearson Higher Nationals

Recognition of Prior Learning (RPL)

MAPPING DOCUMENT

QCF Pearson BTEC Level 4 Higher National Certificate in Engineering unit content mapped to the Level 4 units available in the Pearson BTEC Higher National Engineering programmes (RQF)

For use with the following qualifications:

– Pearson BTEC Higher National Certificate/Higher National Diploma in Engineering
– Pearson BTEC Higher National Certificate/Higher National Diploma in Nuclear Engineering
– Pearson BTEC Higher National Certificate/Higher National Diploma in Aeronautical Engineering

Issue 2

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HNCs in Engineering: Unit Mapping Overview

This mapping document is designed to support centres who wish to recognise student achievement in older QCF Higher Nationals within the new RQF suites. The document demonstrates where content is covered in the new suite, and where there is new content to cover to ensure full coverage of learning outcomes.

P – Partial mapping (some topics from the old unit appear in the new unit)

X – Full mapping + new (all the topics from the old unit appear in the new unit, but new unit also contains new topic(s))

N – New unit

Unit no.	Unit title New RQF HN programme	Maps to unit number on existing QCF HN programme	Level of similarity between units
1	Engineering Design	8	P
2	Engineering Mathematics	1	P
3	Engineering Science	2	X
4	Managing a Professional Engineering Project		New Unit
5	Renewable Energy		New Unit
6	Mechatronics	57	P
7	Machining and Metal Forming Processes	10	P
8	Mechanical Principles	4	P
9	Materials, Properties and Testing	21	P
10	Mechanical Workshop Practices	13	P
11	Fluid Mechanics	41	X
12	Engineering Management	38	P
13	Fundamentals of Thermodynamics and Heat Engines	61	P
14	Production Engineering for Manufacture	9	P
15	Automation, Robotics and PLCs	22 32	P P

16	Instrumentation and Control Systems	55	P
17	Quality and Process Improvement	20 30 36	P P P
18	Maintenance Engineering	43 44 54	P P P
19	Electrical and Electronic Principles	5	X
20	Digital Principles		New Unit
21	Electrical Machines	65	P
22	Electronic Circuits and Devices	39	P
23	Computer Aided Design and Manufacture (CAD/CAM)	19	X
24	Aircraft Aerodynamics	83	X
25	Aircraft Electrical Power & Distribution Systems	82	
26	Airframe Mechanical Systems		New Unit
27	Composite Materials for Aerospace Applications		New Unit
28	Turbine Rotary Wing Mechanical and Flight Systems		New Unit
29	Electro, Pneumatic and Hydraulic Systems	24	P
30	Operations and Plant Managements	45 46 47	P P P
31	Electrical Systems and Fault Finding		New Unit
32	CAD for Maintenance Engineers		New Unit
73	Materials Engineering with Polymers	155	X
74	Polymer Manufacturing Processes	156	X

Unit Mapping in Depth

RQF HNC Units		QCF HNC units		Mapping comments	
No	RQF unit title	No	QCF unit title	QCF LOs	RQF LOs
1	Engineering Design	8	Engineering Design	Unit 8: LO1 Unit 8: LO2 Unit 8: LO3 No Match	Unit 1: LO1 Unit 1: LO2 Unit 1: LO3 Unit 1: LO4 No match
2	Engineering Mathematics	1	Analytical Methods for Engineers	Unit 1: LO2 Unit 1: LO3 Unit 1: LO4	Unit 2: LO1 No match Unit 2: LO3 Unit 2: LO4 Unit 2: LO2
3	Engineering Science	2	Engineering Science	Unit 2: LO1/2 Unit 2: LO3/4	Unit 3: LO2 Unit 3: LO4 Unit 3: LO1 No match Unit 3: LO3 No match
4	Managing a Professional Engineering Project		New unit, no equivalent		
5	Renewable Energy		New unit, no equivalent		
6	Mechatronics	57	Mechatronics	Unit 57: LO1 Unit 57: LO3	Unit 6: LO1 Unit 6: LO3 No match Unit 6: LO2 Unit 6: LO4 No match
7	Machining and Metal Forming Processes	10	Manufacturing Process	Unit 10: LO1 Unit 10: LO2	Unit 7: LO1 Unit 7: LO4 Unit 7: LO2 No match Unit 7: LO3 No match

8	Mechanical Principles	4	Mechanical Principles	Unit 4: LO2 Unit 4: LO3 Unit 4: LO4	Unit 8: LO1 Unit 8: LO2 No match Unit 8: LO3/4 Unit 8: LO3/4
9	Materials, Properties and Testing	21	Materials Engineering	Unit 21: LO1 Unit 21: LO2 Unit 21: LO3 Unit 21: LO4	Unit 9: LO2 No match Unit 9: LO3 Unit 9: LO1 Unit 9: LO4
10	Mechanical Workshop Practices	10	Manufacturing Process	Unit 10: LO1	Unit 10: LO2 Unit 10: LO1 No match Unit 10: LO3 No match Unit 10: LO4 No match
11	Fluid Mechanics	41	Fluid Mechanics	Unit 41: LO1 Unit 41: LO2 Unit 41: LO3 Unit 41: LO4	Unit 11: LO1 Unit 11: LO2 Unit 11: LO3 Unit 11: LO4
12	Engineering Management	38	Managing People in Engineering	Unit 38: LO1/2 Unit 38: LO3	Unit 12: LO1 Unit 12: LO2 Unit 12: LO3 No match Unit 12: LO4 No match
13	Fundamentals of Thermodynamics and Heat Engines	61	Engineering Thermodynamics	Unit 61: LO1 Unit 61: LO2 Unit 61: LO4	Unit 13: LO1 Unit 13: LO4 Unit 13: LO3 No match Unit 13: LO2
14	Production Engineering for Manufacture	9	Manufacturing Planning and Scheduling Principles	Unit 9: LO1 Unit 9: LO4	Unit 14: LO1 Unit 14: LO2 Unit 14: LO3 No match Unit 14: LO4 No match
15	Automation, Robotics and PLCs	22 & 32	Programmable Logic Controllers (22) and Industrial Robot Technology (32)	Unit 22: LO1 Unit 32: LO2 Unit 22: LO2 Unit 32: LO3	Unit 15: LO1 Unit 15: LO2 Unit 15: LO3 Unit 15: LO4

16	Instrumentation and Control Systems	55	Instrumentation and Control Systems	Unit 55: LO1 Unit 55: LO2	Unit 16: LO1 Unit 16: LO1 & LO2 Unit 16: LO 3 No match Unit 16: LO4 No match:
17	Quality and Process Improvement	20, 30 & 36	Quality & Business Improvement (20), Quality Assurance & Management (30) and Statistical Process Control (36)	Unit 36: LO1 Unit 20: LO2 & Unit 30: LO2	Unit 17: LO1 Unit 17: LO2 No match Unit 17: LO3 No match Unit 17: LO4
18	Maintenance Engineering	44, 45	Plant Maintenance and Decommissioning (44), Plant Operations and Performance (45)	Unit 45: LO 1/2 Unit 44: LO1/2 Unit 44: LO3	Unit 18: LO1 Unit 18: LO2 Unit 18: LO3 No Match Unit 18: LO4
19	Electrical and Electronic Principles	5	Electrical and Electronic Principles	Unit 5: LO3	Unit 19: LO1 No match Unit 19: LO2 Unit 19: LO3 No match Unit 19: LO4 No match
20	Digital Principles		New unit, no equivalent		
21	Electrical Machines	65	Utilisation of Electrical Energy	Unit 65: LO1 Unit 65: LO5	Unit 21: LO1 Unit 21: LO2 Unit 21: LO3 No Match Unit 21: LO4 No match
22	Electronic Circuits and Devices	39	Electronic Principles	Unit 39: LO2 Unit 39: LO3 Unit 39: LO4	Unit 22: LO1 Unit 22: LO2 Unit 22: LO3 Unit 22: LO4 No match

23	Computer Aided Design and Manufacture (CAD/ CAM)	19	Computer-aided Design and Manufacture	Unit 19: LO1 Unit 19: LO2 Unit 19: LO3	Unit 23: LO1 Unit 23: LO2 Unit 23: LO3 Unit 23: LO4 No match
24	Aircraft Aerodynamics	83	Aerodynamic Principles and Aircraft Design	Unit 83: LO1 Unit 83: LO2 Unit 83: LO3 Unit 83: LO4	Unit 24: LO1 Unit 24: LO2 Unit 24: LO3 Unit 24: LO4
25	Aircraft Electrical Power & Distribution Systems	82	Aircraft Systems Principles and Applications	Unit 82: LO2	Unit 25: LO1 No match Unit 25: LO2 Unit 25: LO3 No match Unit 25: LO4 No match
26	Airframe Mechanical Systems		New unit, no equivalent		
27	Composite Materials for Aerospace Applications		New unit, no equivalent		
28	Turbine Rotary Wing Mechanical and Flight Systems		New unit, no equivalent		
29	Electro, Pneumatic and Hydraulic Systems	24	Applications of Pneumatics and Hydraulics	Unit 24: LO1 Unit 24: LO3	Unit 29: LO1 No match Unit 29: LO2 Unit 29: LO3 Unit 29: LO4 No match
30	Operations and Plant Managements		New unit, no equivalent		
31	Electrical Systems and Fault Finding		New unit no equivalent		

32	CAD for Maintenance Engineers		New unit, no equivalent		
33	Fundamentals of Nuclear Power Engineering		New unit no equivalent		
73	Materials Engineering with Polymers	155	Materials Engineering with Polymers	Unit 155: LO1 Unit 155: LO2 Unit 155: LO3 Unit 155: LO4	Unit 73: LO1 Unit 73: LO2 Unit 73: LO3 Unit 73: LO4
74	Polymer Manufacturing Processes	156	Polymer Manufacturing Processes	Unit 156: LO1 Unit 156: LO2 Unit 156: LO3 Unit 156: LO4	Unit 74: LO1 Unit 74: LO2 Unit 74: LO3 Unit 74: LO4