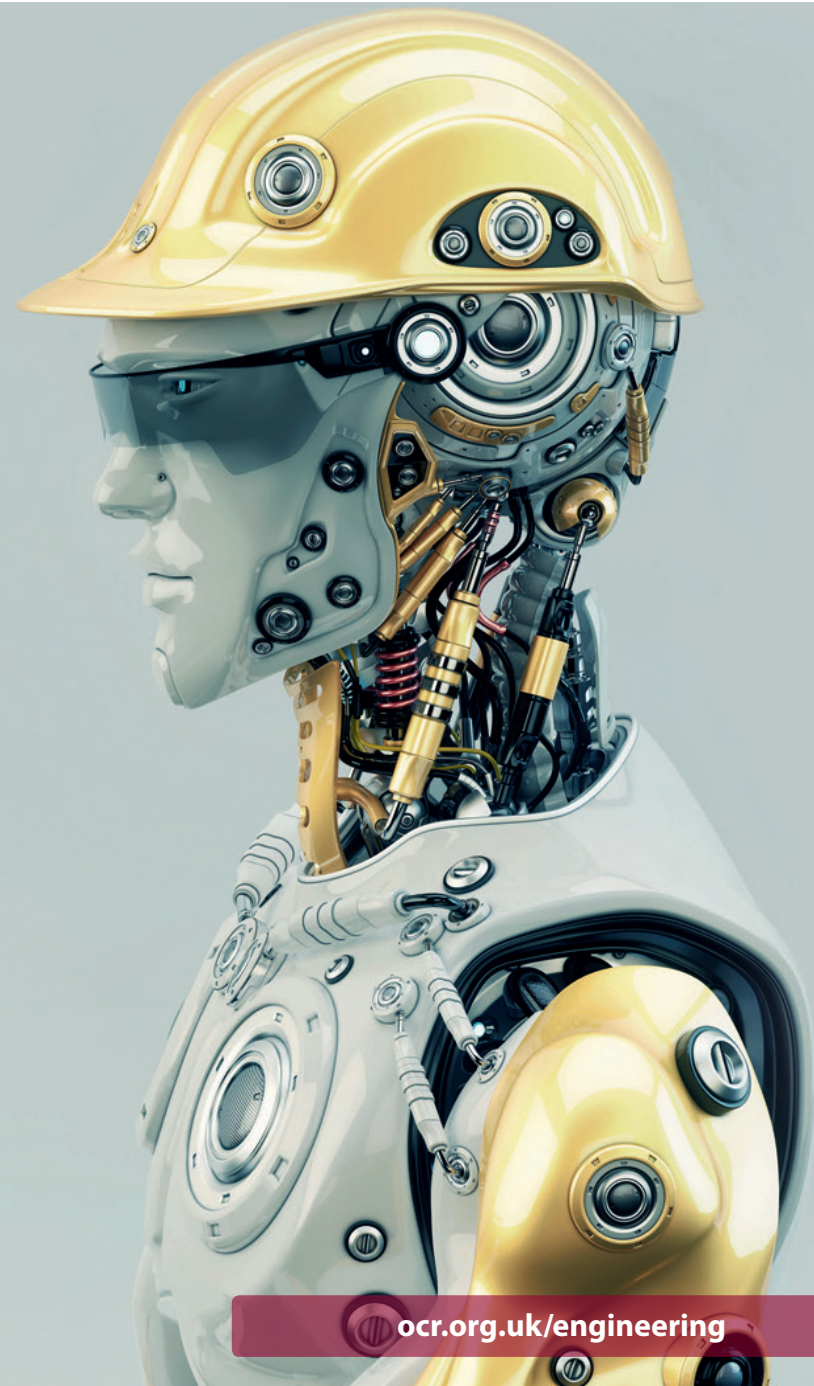


Cambridge TECHNICALS LEVEL 2
ENGINEERING

Cambridge
TECHNICALS
2016

MAPPING GUIDE

Version 1



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INTRODUCTION

This document lists the Level 2 Cambridge Technicals in Engineering Units and Learning Outcomes mapped to the 2012 BTEC units.

ENGINEERING

The Cambridge Technicals in Engineering have been developed to meet the changing needs of the sector, and prepare your students for the challenges they'll face in Further Education or employment. Designed in collaboration with experts spanning the breadth of the sector, the Cambridge Technicals in Engineering focuses on the skills, knowledge and understanding that today's universities and employers demand. Your students will practically apply their skills and knowledge in preparation for further study or the workplace.

When developing the Certificate qualification we worked with organisations within the Engineering sector to design the content and assessment of these qualifications – ensuring that your learners are prepared and have the skills to progress to Further Education or employment.

The Diploma qualification has three vocational pathways that can be followed (at least one pathway must be achieved). Each pathway focuses on industry sectors and job roles that your learners will actually be able to do having completed a Cambridge Technical. We've worked in partnership with industry to make sure your learners can progress directly into the sector in job roles that are appropriate for their age and experience.

TEACHING AND LEARNING RESOURCES

New resources are being developed to support your teaching of this new qualification. These will include Pathway Delivery Guides, a Qualifications Calculator and a Progress Tracker.

To find out more about this qualification please go to:

<http://www.ocr.org.uk/qualifications/vocational-education-and-skills/cambridge-technicals-engineering-level-2-2016-suite/>

2016 Level 2 Cambridge Technicals Suite

- New suite for first teaching September 2017
- Externally assessed content
- Student focused internal assessment rules
- Eligible for Key Stage 5 performance points from 2019
- OCR visiting moderation providing centre feedback and support
- Designed to meet the DfE technical guidance

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MAPPING

Cambridge Technicals in Engineering 2016 units				BTEC 2012 unit no.
Unit no.	Unit title	LO no.	LO title	
1	Fundamentals of mechanical, electrical/ electronic and fluid power engineering (Externally assessed)	LO1	Know what common SI units and their derivatives are and how to use them in engineering	Unit 10
		LO2	Know how to classify common engineering materials	Unit 1, Unit 5
		LO3	Know physical properties of engineering materials in relation to mechanics, motion and forces	Unit 1, Unit 5
		LO4	Know how to calculate mechanical motion and force	Unit 10
		LO5	Know electrical and electronic principles for electronic control and electrical motion	Unit 8, Unit 23, Unit 25, Unit 26
		LO6	Know how to recognise fluid power components and their symbols and calculate fluid power	Unit 27
2	Application of engineering principles (Externally assessed)	LO1	Understand the factors that determine efficiency in engineering systems	Unit 10
		LO2	Understand why engineering materials are suitable for specific engineering applications	Unit 1, Unit 2, Unit 5, Unit 28
		LO3	Understand materials processing techniques	Unit 1, Unit 5 Unit 28
		LO4	Understand how to select electrical and electronic devices for engineering purposes	Unit 8, Unit 23, Unit 25, Unit 26
		LO5	Understand the operation and application of fluid power sources, actuators and valves	Unit 27

MAPPING

Cambridge Technicals in Engineering 2016 units				BTEC 2012 unit no.
Unit no.	Unit title	LO no.	LO title	
3	Mechanical engineering – machine operations (Internally assessed)	LO1	Know the Health and Safety practices and procedures required in an engineering workplace	Unit 1, Unit 3, Unit 7
		LO2	Be able to work safely when performing engineering activities	Unit 1, Unit 3, Unit 7
		LO3	Be able to interpret engineering drawings to produce engineered component(s)	Unit 1, Unit 7, Unit 9, Unit 10, Unit 32, Unit 35
		LO4	Be able to prepare and mark out materials to produce engineered component(s)	Unit 1, Unit 7, Unit 10, Unit 28, Unit 32, Unit 35
		LO5	Be able to select and use tools, and work-holding devices to create machined component(s)	Unit 1, Unit 7, Unit 28
		LO6	Be able to perform machine operations to create machined component(s)	Unit 1, Unit 7, Unit 28
4	Electrical, electronic engineering - operations and application (Internally assessed)	LO1	Be able to work safely when undertaking electrical operations	Unit 3, Unit 8, Unit 23, Unit 25, Unit 26
		LO2	Be able to construct electronic circuits by interpreting circuit diagrams	Unit 8, Unit 23, Unit 25, Unit 26
		LO3	Be able to test electronic circuits for functionality	Unit 8, Unit 10, Unit 23, Unit 25, Unit 26
5	Engineering systems control - operations and application (Internally assessed)	LO1	Understand the key components, applications and basic architecture of programmable devices	Unit 23, Unit 34
		LO2	Be able to construct an automated control system using sensors/ transducers, actuators and mechanical devices	Unit 23
		LO3	Be able to programme an identified automated control system	Unit 23
		LO4	Be able to test the operation of an automated control system	Unit 23

MAPPING

Cambridge Technicals in Engineering 2016 units				BTEC 2012 unit no.
Unit no.	Unit title	LO no.	LO title	
6	Develop and present engineering 2D and 3D design solutions (Internally assessed)	LO1	Be able to create 2D and 3D drawings to present engineering components	Unit 6
		LO2	Be able to save, store, organise and retrieve engineering drawings	Unit 6
		LO3	Be able to produce and modify 2D drawing(s) using 3D Computer Aided Design (CAD) software	Unit 6
		LO4	Be able to produce 3D solid model(s) using Computer Aided Design (CAD)	Unit 6
		LO5	Be able to produce 2D CAD engineering drawing from a 3D solid model	Unit 6
7	Product manufacture and fabrication (Internally assessed)	LO1	Be able to prepare and plan for product assembly and manufacture	Unit 2, Unit 13, Unit 24, Unit 28, Unit 31, Unit 33
		LO2	Be able to follow efficient and safe working procedures for product assembly and manufacture	Unit 3, Unit 13, Unit 24, Unit 28, Unit 31, Unit 33
		LO3	Be able to produce an engineering product using product assembly and manufacturing techniques	Unit 2, Unit 13, Unit 24, Unit 28, Unit 31, Unit 33
		LO4	Be able to apply quality control checks to product assembly and manufacture	Unit 2, Unit 13, Unit 24, Unit 28, Unit 31, Unit 33
8	Optimise and maintain performance in engineering systems (Internally assessed)	LO1	Understand the importance of maintenance to optimise performance	Unit 1, Unit 4
		LO2	Be able to plan maintenance to optimise performance	Unit 1, Unit 2, Unit 4
		LO3	Be able to perform maintenance operations	Unit 4
		LO4	Be able to perform unscheduled repair procedures	Unit 4



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