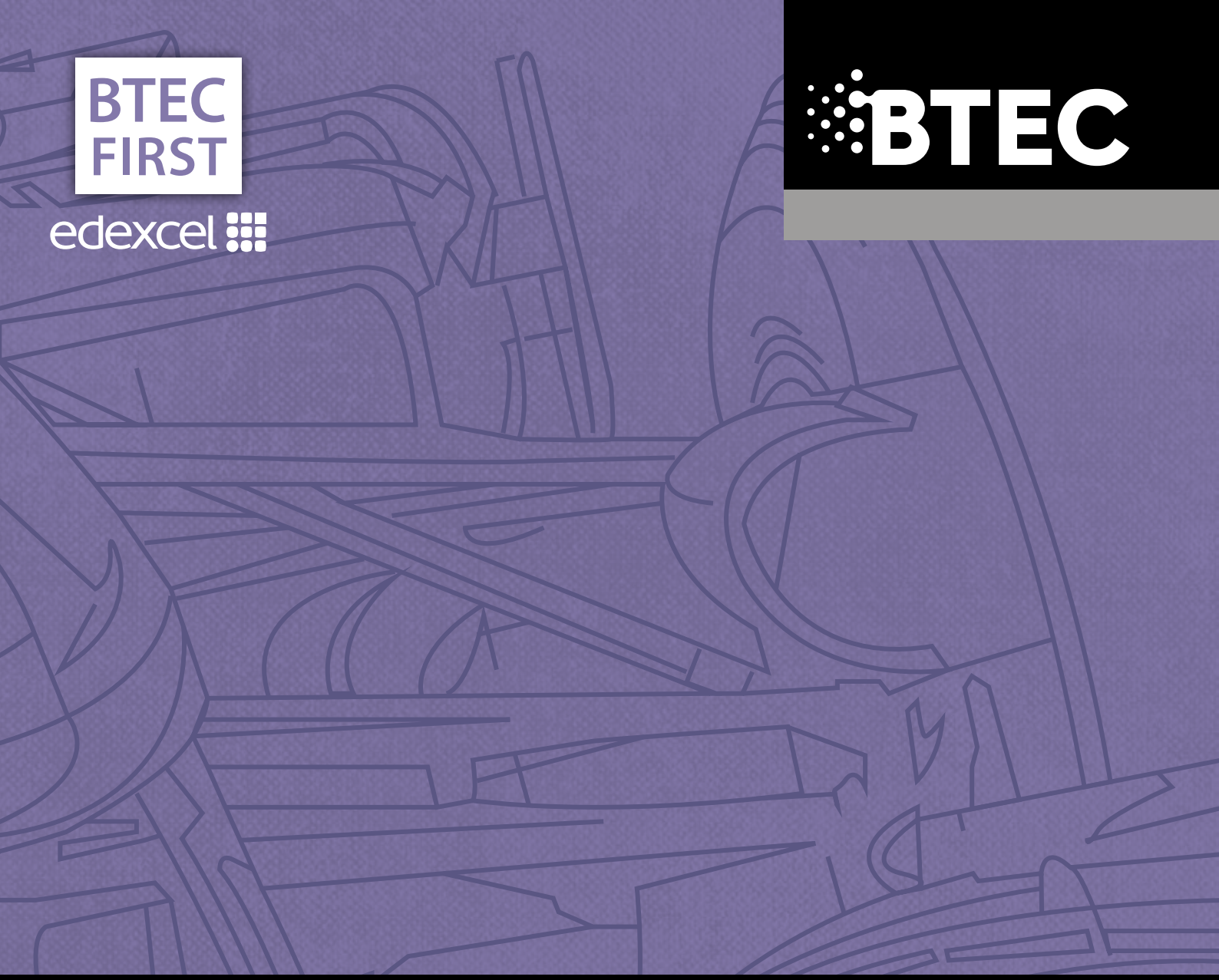

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Comparing unit content

ENGINEERING

Edexcel BTEC Level 1/Level 2 First Award in Engineering (NQF)
Edexcel BTEC Level 2 First Extended Certificate in Engineering (QCF)

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ENGINEERING

BTEC First Award in Engineering (NQF) and **BTEC Level 2 First Extended Certificate in Engineering** (QCF)

Comparing unit content

This table maps the content of the new **BTEC First Award in Engineering** for level 2 learners (NQF), shown in the left hand column, against the content of the current **BTEC Level 2 First Extended Certificate in Engineering** (QCF) in the right hand column.

This mapping will help you transition from one specification to the other by highlighting where there are changes in content, particularly where there is new content which will need to be delivered to help your learners prepare for the new assessment.

In order to make the table easy to use and to demonstrate new content we have used a 'traffic lights' colour scheme as follows:

- **GREEN** - covered. In this case the content in the 2012 BTEC First Award (NQF) is very close to the existing BTEC Level 2 Extended Certificate (QCF). In the right hand column the title of the relevant unit and Learning Outcome is identified.
- **YELLOW** - partially covered. In this case the content is partially covered, perhaps in Learning Outcomes in more than one unit from the BTEC Level 2 Extended Certificate (QCF). Where there is some additional knowledge in the 2012 BTEC, this is stated in the left hand column under the heading **NEW CONTENT.**
- **RED** - not covered. In this case the content in the 2012 BTEC First Award (NQF) is new. It will appear in the left hand column so you can see immediately what you will need to teach.

We hope you find this at-a-glance guide useful and that you enjoy your new course.

Note: This table applies to content only. You will need to assess learners against the new assessment criteria.
All information is provisional. It is correct at the time of going to press but is subject to change.

Unit 1: The Engineered World

Edexcel BTEC Level 1/Level 2 First Award in Engineering (NQF)	Edexcel BTEC Level 2 First Extended Certificate in Engineering (QCF)
Unit 1 – Learning aim A: Know about engineering processes used to produce modern engineered products	
A1: Engineering sectors and products	**NOT COVERED**
A2: Mechanical and electrical/electronic engineering processes	Partially covered in: • Unit 14 Selecting and Using Secondary Machining Techniques to Remove Material Partial • Unit 17 Fabrication Techniques and Sheet Metal Work • Unit 19 Electronic Circuit Construction: All LOs underpinning content.
A3: Scales of production	Partially covered in: • Unit 21 Production Planning for Engineering: LO1 Know about scales of production and the processes and equipment used in manufacturing organisations.
A4: Modern production methods	**NOT COVERED**
Unit 1 – Learning aim B: Know about developments in engineering materials and technologies	
B1: Modern and smart materials in engineering	Partially covered in: • Unit 8 Selecting Engineering Materials: LO1 Understand the properties of common engineering materials.
B2: Modern material forms in engineering	Partially covered in: • Unit 8 Selecting Engineering Materials: LO1 Understand the properties of common engineering materials.
B3: Modern material processes in engineering	**NOT COVERED**
B4: New technologies in engineering	**NOT COVERED**

Covered Partially covered Not covered

Unit 1 – Learning aim C: Understand how engineering contributes to a sustainable future	
C1: Sustainable engineered products	**NOT COVERED**
C2: Minimising waste production in engineering	Partially covered in: • Unit 25 Applying Continuous Improvement and Problem solving techniques LO4 Be able to use continuous improvement and problem-solving techniques.
C3: Lean manufacturing	Partially covered in: • Unit 25 Applying Continuous Improvement and Problem solving techniques LO4 Be able to use continuous improvement and problem-solving techniques.
C4: Renewable sources of energy in engineering	**NOT COVERED**

Unit 2: Investigating an Engineering Product

Edexcel BTEC Level 1/Level 2 First Award in Engineering (NQF)	Edexcel BTEC Level 2 First Extended Certificate in Engineering (QCF)
Unit 2 – Learning aim A: Understand the performance requirements of an engineered product	
A1: Technical specification	**NOT COVERED**
Unit 2 – Learning aim B: Understand the selection of specific materials for use in the components that make up an engineered product	
B1: Selection of materials and components	Partially covered in: • Unit 8: Selecting Engineering Materials LO1 Understand the properties of common engineering materials.
B2: Environmental impact	**NOT COVERED**
B3: Alternative materials	Partially covered in: • Unit 8: Selecting Engineering Materials LO1 Understand the properties of common engineering materials.

Covered Partially covered Not covered

Unit 2 – Learning aim C: Understand the selection and use of manufacturing processes in an engineered product	
C1: Selection of production processes	**NOT COVERED**
C2: Environmental impact	**NOT COVERED**
C3: Comparing production processes	**NOT COVERED**
Unit 2 – Learning aim D: Understand the quality issues related to an engineered product	
D1: Quality control (QC)	Partially covered in: • Unit 22:Application of quality control and measurement in engineering: LO1 Know about quality and quality control as applied to manufactured products.
D2: Quality assurance (QA)	Partially covered in: • Unit 22:Application of quality control and measurement in engineering: LO1 Know about quality and quality control as applied to manufactured products.

Unit 3: Health and Safety in Engineering

Edexcel BTEC Level 1/Level 2 First Award in Engineering (NQF)	Edexcel BTEC Level 2 First Extended Certificate in Engineering (QCF)
Unit 3 – Learning aim A: Understand safe and effective working in an engineering workplace	
A1: Accident and emergency procedures	Fully covered in: • Unit 1 Working Safely and Effectively in Engineering LO1: Be able to apply statutory regulations and organisational safety requirements.
A2: Working safely in an engineering organisation	Fully covered in: • Unit 1 Working Safely and Effectively in Engineering All LOs.

Covered Partially covered Not covered

Unit 3 – Learning aim B: Know how to follow procedures and undertake a work activity safely	
B1: Materials and equipment handling	Fully covered in: • Unit 1 Working Safely and Effectively in Engineering LO1: Be able to apply statutory regulations and organisational safety requirements.
B2: Risks and risk assessment	Fully covered in: • Unit 1 Working Safely and Effectively in Engineering LO1: Be able to apply statutory regulations and organisational safety requirements.
B3: Engineering work activity	Fully covered in: • Unit 1 Working Safely and Effectively in Engineering LO2: Be able to work efficiently and effectively in Engineering.

Unit 4: Engineering Maintenance

Edexcel BTEC Level 1/Level 2 First Award in Engineering (NQF)	Edexcel BTEC Level 2 First Extended Certificate in Engineering (QCF)
Unit 4 – Learning aim A: Know about causes and effects of equipment failure and types of maintenance procedures	
A1: Causes and effects	Fully covered in: • Unit 5 Engineering Maintenance Procedures LO1: Know about engineering maintenance purposes, procedures and resources.
A2: Types of planned maintenance procedures, their features and benefits	Fully covered in: • Unit 5 Engineering Maintenance Procedures LO1: Know about engineering maintenance purposes, procedures and resources.
A3: Types of unplanned maintenance procedures, their features and impacts	Fully covered in: • Unit 5 Engineering Maintenance Procedures LO1: Know about engineering maintenance purposes, procedures and resources.

Covered Partially covered Not covered

Unit 4 – Learning aim B: Be able to resource and plan a maintenance activity on an engineering product or system	
B1: Identification of resources	Fully covered in: • Unit 5 Engineering Maintenance Procedures LO2: Be able to plan and carry out a maintenance activity on a non-complex engineering system.
B2: Maintenance planning	Fully covered in: • Unit 5 Engineering Maintenance Procedures LO2: Be able to plan and carry out a maintenance activity on a non-complex engineering system.
LA C: Be able to carry out a maintenance activity safely on an engineering product or system	
C1: Maintenance activity	Fully covered in: • Unit 5 Engineering Maintenance Procedures LO2: Be able to plan and carry out a maintenance activity on a non-complex engineering system.

Unit 5: Engineering Materials

Edexcel BTEC Level 1/Level 2 First Award in Engineering (NQF)	Edexcel BTEC Level 2 First Extended Certificate in Engineering (QCF)
Unit 5 – Learning aim A: Know about the properties of common engineering materials and selection for engineering applications	
A1: Types of engineering materials	Partially covered in: • Unit 8: Selecting Engineering Materials LO1 Understand the properties of common engineering materials.
A2: Properties of materials	Partially covered in: • Unit 8: Selecting Engineering Materials LO1 Understand the properties of common engineering materials.
A3: Suitability of materials in engineering applications	**NOT COVERED**
A4: Heat treatment processes	**NOT COVERED**

Covered Partially covered Not covered

Unit 5 – Learning aim B: Know about the supply and sustainable use of engineering materials and selection for an engineering product or activity	
B1: Selection for applications	**NOT COVERED**
B2: Sustainable use of materials	**NOT COVERED**
B3: Forms of supply	Partially covered in: • Unit 8: Selecting Engineering Materials LO2: Know how engineering materials are identified.

Unit 6: Computer-aided Engineering

Edexcel BTEC Level 1/Level 2 First Award in Engineering (NQF)	Edexcel BTEC Level 2 First Extended Certificate in Engineering (QCF)
Unit 6 – Learning aim A: Use a CAD system to produce engineering drawings	
A1: Use of a CAD system to produce an engineering drawing	Partially covered in: • Unit 10: Using Computer Aided Drawing Techniques in Engineering LO2 Be able to produce CAD drawings.
A2: Use of a CAD system to produce a circuit diagram	Partially covered in: • Unit 10: Using Computer Aided Drawing Techniques in Engineering LO2 Be able to produce CAD drawings.
Unit 6 – Learning aim B: Use a CAM system to manufacture an engineering component	
B1: Use of a CAM system	Partially covered in: • Unit 15 Part Programming CNC machines - LO3 Be able to run part programs on a CNC machine, complying with all relevant health and safety precautions, LO4 Be able to carry out a proof-reading procedure for a CNC program and check conformity to specification.

Covered Partially covered Not covered

Unit 7: Machining Techniques

Edexcel BTEC Level 1/Level 2 First Award in Engineering (NQF)	Edexcel BTEC Level 2 First Extended Certificate in Engineering (QCF)
Unit 7 – Learning aim A: Select and use tools and work-holding devices for drilling and for turning or milling	
A1: Tools	Fully covered in: • LO2 Know how work holding devices and tools are used.
A2: Work-holding devices	Partially covered in: • LO1 Know how a range of secondary machining techniques is used • LO2 Know how work holding devices and tools are used.
Unit 7 – Learning aim B: Make workpieces using drilling and turning or milling techniques safely	
B1: Features of the workpiece	Partially covered in: • LO3 Be able to use secondary machining techniques safely and accurately to make a workpiece.
B2: Machining parameters	Partially covered in: • LO3 Be able to use secondary machining techniques safely and accurately to make a workpiece.
B3: Checks for compliance and accuracy	Partially covered in: • LO3 Be able to use secondary machining techniques safely and accurately to make a workpiece.
B4: Working safely	Partially covered in: • LO4: Know about aspects of health and safety relative to secondary machining techniques.

Covered Partially covered Not covered

Unit 8: Electronic circuit design and construction

Edexcel BTEC Level 1/Level 2 First Award in Engineering (NQF)	Edexcel BTEC Level 2 First Extended Certificate in Engineering (QCF)
Unit 8 – Learning aim A: Know about electronic systems design	
A1: Input components	Partially covered in: • Unit 19: Electronic Circuit Construction LO2 Know about electronic components and circuit diagrams. • Unit 7 Electronic Devices and Communication Applications LO2 Know the function of electronic components and devices.
A2: Process components	Partially covered in: • Unit 19: Electronic Circuit Construction LO2 Know about electronic components and circuit diagrams. • Unit 7 Electronic Devices and Communication Applications LO2 Know the function of electronic components and devices.
A3: Output components	Partially covered in: • Unit 19: Electronic Circuit Construction LO2 Know about electronic components and circuit diagrams. • Unit 7 Electronic Devices and Communication Applications LO2 Know the function of electronic components and devices.
A4: Passive components	Partially covered in: • Unit 19: Electronic Circuit Construction LO2 Know about electronic components and circuit diagrams. • Unit 7 Electronic Devices and Communication Applications LO2 Know the function of electronic components and devices.
A5: Power	Partially covered in: • Unit 19: Electronic Circuit Construction LO2 Know about electronic components and circuit diagrams.
Unit 8 – Learning aim B: Design and construct electronic circuits using electronic building blocks	
B1: Circuit design	Partially covered in: • Unit 19: Electronic Circuit Construction LO2 Know about electronic components and circuit diagrams, LO4 Be able to construct an electronic circuit.

Covered Partially covered Not covered

B2: Circuit board construction	Fully covered in: • Unit 19: Electronic Circuit Construction LO3 Know about the manufacture of electronic circuit boards, LO4 Be able to construct an electronic circuit.
Unit 8 – Learning aim C: Know how to populate circuit boards permanently and construct electronic circuits safely	
C1: Circuit soldering techniques	Fully covered in: • Unit 19: Electronic Circuit Construction LO3 Know about the manufacture of electronic circuit boards, LO4 Be able to construct an electronic circuit.
C2:Risk assessments	Fully covered in: • Unit 19: Electronic Circuit Construction LO 1 Be able to use safe working practices in the electronics laboratory/ workshop.
Unit 8 – Learning aim C: Test and evaluate electronic circuits	
D1: Testing electronic circuits	Partially covered in: • Unit 7 Electronic Devices and Communication Applications LO 2 Be able to contruct and test analogue and digital electronic circuits.

Covered Partially covered Not covered