



Pearson Level 3
Alternative Academic Qualification BTEC National in

L3

Engineering (Extended Certificate)

Transition Guide

First teaching from September 2025

First certification from 2027

Pre-publication draft

Qualification Number: 610/3959/7

This document is for centres/practitioners moving (transitioning) from Pearson BTEC Level 3 National Extended Certificate in Engineering to the **Pearson Level 3 Alternative Academic Qualification BTEC National in Engineering (Extended Certificate)**

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Introducing the BTEC Level 3 Nationals from 2025 (AAQs)

The BTEC Nationals from 2025 qualifications provide students with meaningful and practical learning experiences across a range of career sectors. They equip students with the applied knowledge, skills and personal attributes they need to enter and thrive in higher education and meet the demands of future employment in our fast-changing world.

BTEC Nationals from 2025 (AAQ) are:

- **Engaging and future-focused** - providing opportunities for students to learn in real, relatable and practical ways and designed to ensure that they develop critical knowledge and transferable skills to navigate the future.
- **Accessible and fair for students, balanced with the demands of progression to the next stage of learning** - the use of the N Grade and our holistic approach to designing assessment criteria means that qualifications are attainable for students whilst ensuring that they have a solid foundation of skills and knowledge, and the confidence to progress.
- **Accepted and supported by universities** - developed in collaboration with educators and universities to ensure students have the right combination of skills and knowledge for success in higher education. Over 100 letters of support from universities.
- **Well supported and straightforward to deliver and administer** - simple structure making unit combination more straightforward; uniformed format of external assessment across subjects to streamline administration; Pearson-Set Assignment Briefs (PSABs) removing the need for centres to plan their own assignments, and wide range of training and support.



What is new?

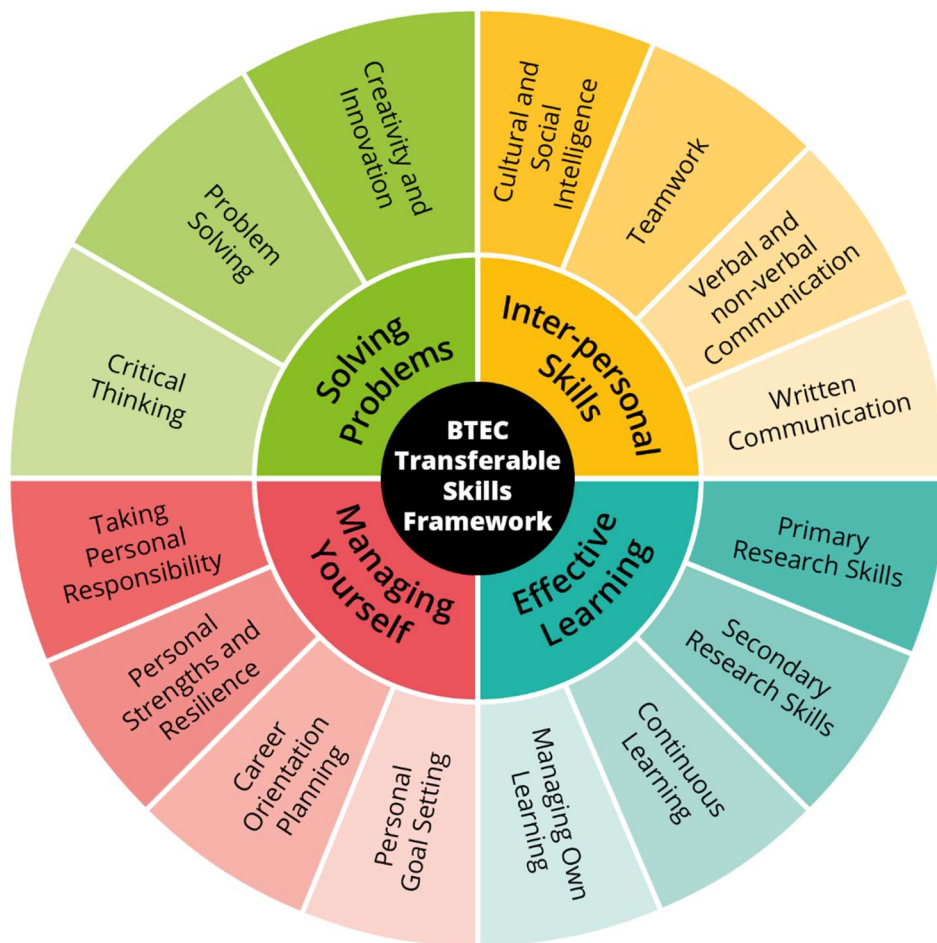
Preparing students for their future

Our new BTEC Level 3 Nationals from 2025 (AAQ) qualifications are designed with a clear focus on the future.

Our aim is to ensure that students are given every opportunity to develop the new knowledge, skills, attitudes and values they need to navigate and thrive through the uncertainty and to shape their world. We have identified three critical skill areas for the future – **transferable skills, digital skills and sustainability** – and have designed our new BTEC qualifications with these areas at the heart. Join us on the journey as we prepare young people to be the best versions of themselves for the future.

[Read our brochure.](#)

Click on the infographic to see further information.



What makes it easy to transition to the new BTEC National from 2025 (AAQ)?

- Auto approval - if you are currently approved to deliver BTEC Nationals you will receive automatically approval for the new qualification.*
- Refreshed and updated content and assessments – to ensure your learners continue to progress to popular progression routes into HEIs and beyond.
- Simple, manageable and flexible structure – you can continue to structure your delivery of teaching, learning and assessment when it best suits you and your learners.
- Unchanged Quality Assurance process with Standards Verification at the heart.
- Assessments - Externally Assessed Exams available twice a year, and Internally Assessed units, Assessments set by Pearson, and taken by learners when they are ready.
- Familiar retake and resubmission rules.
- Grading, marking and assessment methodologies unchanged - you can continue to teach and assess with confidence.
- Dedicated support - our Subject Advisors and assessments teams are here to support you every step of the way.

*You must be approved in the relevant sector to receive automatic approval.



Support offer

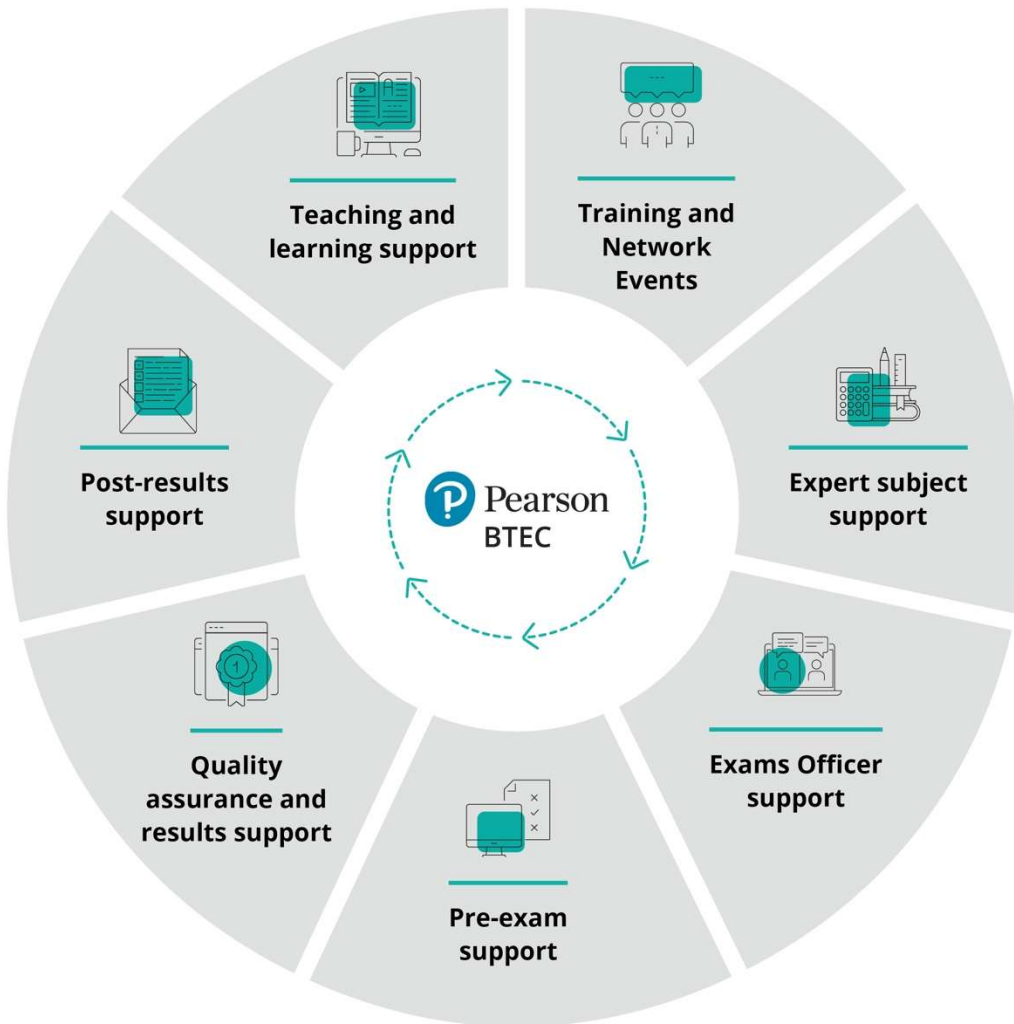
Complimentary resources and services

- **BTEC National Teacher Guide** – a comprehensive guide to support preparation for delivery of your new BTEC National AAQ.
- **Sample Assessment Materials** - showing how tasks, questions and marking will be applied, which can be used as sample papers/tasks to prepare learners.
- **Exam Wizard** - an online resource containing a bank of past paper questions and support materials to help you create your own mock exams and tests.
- **Results Plus** - a free online results analysis tool for teachers that gives you a detailed breakdown of your students' performance in BTEC external assessments.
- **Training** and standardisation – Getting Started and Preparing to Assess training events and recorded sessions will be available from July 2024 onwards.
- **Network events** – an opportunity to hear about the latest developments from subject experts within Pearson and to share good practice with fellow centres.
- Dedicated **Subject Advisor** available throughout the year so please do get in touch if you would like any support or guidance with:
 - Planning your courses
 - Overview of BTEC quality assurance processes
 - Suggested resources
 - Teaching and Assessment of internal units and components
 - Teaching external units and components
 - The training and support materials we have available.

Comprehensive Package of Paid resources

- **Student Books** – provide concise yet complete coverage of each sector, with ample student activities and assessment practice, covering all mandatory and optional units. Available in print and e-book formats.
- **Teacher Packs** – provide further supporting teacher resources for each sector. Designed to help students excel, including a front-of-class version of the e-book, activity sheets, fact sheets, videos and interactive knowledge check quizzes. Available as a bundle of units for each sector or as single unit packs.

Click on the infographic
to see further information.



Qualification Structure

Pearson BTEC Level 3 National Extended Certificate in Engineering			
Unit number	Unit title	GLH	How assessed
Mandatory units – learners complete and achieve all units			
1	Engineering Principles	120	External
2	Delivery of Engineering Processes Safely as a Team	90	Internal
3	Engineering Product Design and Manufacture	120	External
Optional units – learners complete one unit			
7	Calculus to Solve Engineering Problems	60	Internal
9	Work Experience in the Engineering Sector	60	Internal
10	Computer Aided Design in Engineering	60	Internal
11	Engineering Maintenance and Condition Monitoring Techniques	60	Internal
12	Pneumatic and Hydraulic Systems	60	Internal
19	Electronic Devices and Circuits	60	Internal
25	Mechanical Behaviour of Metallic Materials	60	Internal
30	Mechanical Measurement and Inspection Technology	60	Internal
35	Computer Programming	60	Internal
41	Manufacturing Secondary Machining Processes	60	Internal
44	Fabrication Manufacturing Processes	60	Internal
45	Additive Manufacturing Processes	60	Internal

Pearson Level 3 Alternative Academic Qualification BTEC National in Engineering (Extended Certificate)			
Unit number	Unit title	GLH	How assessed
Mandatory Units, learners complete all units			
1	Engineering Principles	120	External
2	Engineering Applications	60	External
3	Engineering Design	120	Internal
4	Engineering Project	60	Internal

Summary of key similarities and differences

- **Continued vocational approach** to the qualification ensuring practical application and skill development important for progression into higher education.
- **Established and well-recognised grade profiles** inclusive of Pass, Merit and Distinction.
- **Similar maths and science mandatory externally-assessed unit** in 'Engineering Principles'.
- **Product Design and Manufacturing process remain key features** of the new qualification, across Engineering Applications, Engineering Design and Engineering Project units.
- **Most popular Optional unit content has been retained** in the new, all-mandatory structure (ie Design and CAD, Engineering Project).
- **Enhanced opportunities** to apply Engineering communication skills, problem solving and the understanding of modern engineering industrial processes to practical project outcomes.



Assessment Structure

Pearson Level 3 Alternative Academic Qualification BTEC National in Engineering (Extended Certificate)

Mandatory units, learners complete all units				Assessments
1	Engineering Principles	120 GLH	External	<ul style="list-style-type: none"> An external examination set and marked by Pearson. 2 ¼ hours, 90 marks Assessment Availability: January and June First assessment June 2026
2	Engineering Applications	60 GLH	External	<ul style="list-style-type: none"> An external examination set and marked by Pearson. 2 hours, 70 marks Available January and June First assessment June 2026
3	Engineering Design	120 GLH	Internal	<ul style="list-style-type: none"> Pearson sets the assignment for the assessment of this unit. The PSAB will take approximately 32 hours to complete, with a choice of contexts/ themes (set for the learner by the teacher each year from a list provided) and consists of 4 tasks, partially under supervision. The PSAB will be marked by centres and verified by Pearson. You will make assessment decisions for the PSAB using the assessment criteria provided in the specification. The PSAB will be valid for the lifetime of this qualification.
4	Engineering Project	60 GLH	Internal	<ul style="list-style-type: none"> Pearson sets the assignment for the assessment of this unit. The PSAB will take approximately 30 hours to complete, with a choice of contexts/ themes, and consists of 3 tasks, partially under supervision. The PSAB will be marked by centres and verified by Pearson. You will make assessment decisions for the PSAB using the assessment criteria provided in the specification. The PSAB will be valid for the lifetime of this qualification.

Pearson Set Assignment Briefs (PSAB)

Internally assessed units are assessed using a Pearson Set Assignment Brief (PSAB), which is set by Pearson, marked by you and subject to external standards verification. The PSAB will be valid for the lifetime of this qualification, with [clear guidance on how to deliver for each new cohort.](#)



Mapping Guide

Mapping of Pearson Level 3 Alternative Academic Qualification BTEC National in Engineering (Extended Certificate) to the Pearson BTEC Level 3 National Extended Certificate in Engineering specification.

Title: Pearson Level 3 Alternative Academic Qualification BTEC National in Engineering (Extended Certificate)	Pearson BTEC Level 3 National Extended Certificate in Engineering	Comments
Unit 1: Engineering Principles (120 GLH) External	Various (see below)	
<p>Assessment outcomes: AO1 Recall knowledge of units of measure AO2 Demonstrate understanding of engineering data and information AO3 Apply knowledge and understanding of mechanical, electronic and electrical engineering mathematical procedures in given engineering contexts</p>	<p>Unit 1: Engineering Principles (120 GLH) External Assessment outcomes: AO1 Recall basic engineering principles and mathematical methods and formulae AO2 Perform mathematical procedures to solve engineering problems AO3 Demonstrate an understanding of electrical, electronic and mechanical principles to solve engineering problems AO4 Analyse information and systems to solve engineering problems AO5 Integrate and apply electrical, electronic and mechanical principles to develop an engineering solution</p> <p>Unit 7: Calculus to Solve Engineering Problems (not available in 2016 BTEC National Extended Certificate Size)</p> <ul style="list-style-type: none"> • Learning Aim A Examine how differential Calculus can be used to solve engineering problems • Learning Aim B Examine how integral calculus can be used to solve engineering problems 	<p>This unit remains very similar to the unit in the current BTEC National.</p> <p>Basic calculus has been added to the AAQ unit to aid in HE progression and to reflect the fact that no ‘further maths’ or ‘Calculus’ is available in the new structure. This content takes some of the current unit 7 ‘Calculus to Solve Engineering Problems’</p> <p>The assessment has been re-designed to ensure that the ‘pure maths’ concepts in Learning Aim A, including the above Calculus, is never assessed in isolation, only in solving Mechanical and Electrical/ Electronic engineering problems in topics B and C.</p>

Unit 2: Engineering Applications	Various (see below)	
<p>AO1a Recall knowledge of engineering sectors, functional areas and emerging technologies</p> <p>AO1bi Recall knowledge of engineering materials</p> <p>AO1bii Recall knowledge of engineering processes</p> <p>AO2a Demonstrate understanding of functional areas and emerging technologies</p> <p>AO2bi Demonstrate understanding of engineering materials</p> <p>AO2bii Demonstrate understanding of engineering processes</p> <p>AO3a Apply knowledge and understanding of functional areas and emerging technologies</p> <p>AO3b Apply knowledge and understanding of engineering materials and processes</p> <p>AO4ai Analyse the impact of emerging technologies on the functional areas of engineering organisations</p> <p>AO4aii Analyse information to compare materials and processes</p> <p>AO4b Evaluate information to make decisions about the selection of materials and processes in given contexts</p>	<p>Unit 2: Delivery of Engineering Processes Safely as a Team Learning Aim A: Examine common engineering processes to create products or deliver services safely and effectively as a team</p> <p>Unit 3: Engineering Product Design and Manufacture: AO1: Demonstrate knowledge and understanding of engineering products and design AO3 Analyse data and information and make connections between engineering concepts, processes, features, procedures, materials, standards and regulatory requirements</p>	<p>This is a new unit in response to HE feedback to ensure understanding of modern technologies and engineering materials in today's industry. It also ensures there is a sufficient body of knowledge to meet the minimum amount of external examination required by DfE.</p> <p>We have integrated knowledge and understanding of common engineering processes that are currently covered in the 2016 BTEC Nationals in Engineering, for example in units 2 and 3 as indicated</p>

Unit 3: Engineering Design	Various (see below)	
<p>A Explore initial design proposals to meet the requirements of an engineering design challenge</p> <p>B Develop initial design ideas into 3-dimensional models in response to an engineering design challenge</p> <p>C Develop 3-dimensional models into 2-dimensional engineering drawings and present the final design solution</p> <p>D Review the design process when responding to an engineering design challenge</p>	<p>Unit 2: Delivery of Engineering Processes safely as a Team Learning aim B: Develop two-dimensional computer aided drawings that can be used in engineering processes</p> <p>Unit 3: Engineering Product Design and Manufacture AO1 Demonstrate knowledge and understanding of engineering products and design AO2 Apply knowledge and understanding of engineering methodologies, processes, features and procedures to iterative design AO3 Analyse data and information and make connections between engineering concepts, processes, features, procedures, materials, standards and regulatory requirements AO4 Evaluate engineering product design ideas, manufacturing processes and other design choices AO5 Be able to develop and communicate reasoned design solutions with appropriate justification</p> <p>Unit 10: Computer Aided Design in Engineering Learning Aim A: Develop a three-dimensional computer-aided model of an engineered product that can be used as part of other engineering processes Learning Aim B: Develop two-dimensional detailed computer-aided drawings of an engineered product that can be used as part of other engineering processes</p>	<p>This new unit takes the design skills covered in the 2016 BTEC Nationals mandatory units 2, 3, and optional unit 10 and integrates them into a new mandatory unit where learners will learn engineering design skills and apply them to respond to a design challenge.</p> <p>The new unit assessment approach will ensure that design skills are assessed by a series of practical tasks with greater flexibility in terms of the scenario that learners respond to and fewer restrictions around the time that these must be completed.</p> <p>Learners will have plenty of scope for creativity and developing unique ideas whilst applying design techniques to respond to engineering challenges, which was felt to be important by our HE stakeholders when designing the new qualification.</p>

Unit 4: Engineering Project	Various (see below)	
<p>A Investigate an engineering project in a relevant specialist area</p> <p>B Develop project management processes and a design solution for the engineering project</p> <p>C Undertake the solution for an engineering project and develop skills to present the solution</p>	<p>Unit 5: Delivery of Engineering Processes safely as a Team</p> <p>A Examine common engineering processes to create products or deliver services safely and effectively as a team</p> <p>B Develop two-dimensional computer-aided drawings that can be used in engineering processes</p> <p>C Carry out engineering processes safely to manufacture a product or to deliver a service effectively as a team (partially maps, as learners must work independently to deliver the project in the AAQ)</p> <p>Unit 3: Engineering Product Design and Manufacture</p> <p>AO2 Apply knowledge and understanding of engineering methodologies, processes, features and procedures to iterative design</p> <p>AO4 Evaluate engineering product design ideas, manufacturing processes and other design choices</p> <p>AO5 Be able to develop and communicate reasoned design solutions with appropriate justification</p> <p>Unit 5: A Specialist Engineering Project (only currently available in Diploma Size +)</p> <p>A Investigate an engineering project in a relevant specialist area</p> <p>B Develop project-management processes and a design solution for the specialist engineering project as undertaken in industry</p> <p>C Undertake the solution for a specialist engineering project and present the solution as undertaken in industry.</p>	<p>This unit covers mandatory content from the 2016 BTEC Nationals in Engineering, relating to engineering project management processes to develop a solution to a problem</p> <p>They will also draw upon design knowledge and skills already covered in AAQ unit 3, and from the existing unit 3 of the 2016 BTEC National.</p> <p>In investigating a theme, understanding project life cycles, carrying out project management processes to undertake their solution, learners will cover content also included in optional unit 5 from the 2016 BTEC National suite (not available in the current Certificate size)</p> <p>Including project management skills and understanding the engineering project lifecycle was felt to be important for learner progression, following consultation with HE and provider stakeholders. This approach was recommended to integrate knowledge and skill in a practical way. Therefore this content was made mandatory for all learners in the new AAQ.</p>

