BTEC FIRSTS IN ENGINEERING
FROM 2012 & 2013
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Introducing the complete suite

BTECs have been leading the way in high-quality vocational education for almost 30 years. During that time we have consistently challenged ourselves to ensure they continue to represent the very best for learners in the progression opportunities they offer. With this latest suite of BTEC Firsts for level 2 learners, we’ve taken into account the skills required of employees in global markets, changes in education policy and feedback from many teachers and tutors delivering BTEC. However, it’s also important to us that we retain what is great about BTEC; high-quality teacher assessment, engaging and relevant content, and clear progression pathways to further study remain at the heart of the BTEC offer.

For schools and colleges

The Award, Certificate, Extended Certificate and Diploma sizes means schools and colleges can provide a motivating, personalised and highly effective vocational option, both alongside, and as an alternative, to GCSEs and A levels. Core and mandatory units help learners gain a deep understanding of a specialist area within the sector, and opportunities for contextualised maths and English ensure learners can practise these essential skills in a meaningful way. There is also a range of optional units to choose from, allowing learners to focus their study on an area of interest or a specialist career path.

Internal and external assessment

One of the most significant developments of the next generation of BTEC Firsts is the introduction of external assessment. Contributing to a maximum of 25% of the overall assessment, which keeps teacher-led assessment at the heart of BTEC learning, this external assessment element provides evidence that these qualifications are assessed to a consistent high standard. For learners, the broader range of assessment methods provide variety, and the experience of taking external assessment prepares them for taking level 3 qualifications where this may be a requirement.

Unrivalled support

Input from thousands of you during the development has not only shaped the qualifications, but given us great insight into the kind of support you need to embed them. We have considerably expanded our qualification support and I’m delighted to introduce myBTEC, possibly the most significant advancement in our support offering during the lifetime of BTEC. This online toolkit will transform the planning, delivery and assessment of BTEC programmes by letting you build courses, create assignments, access resources and track learner progress in one place.

We are extremely proud of these new qualifications and their place in a broad and balanced curriculum for today’s learners. We believe they embody all the quality and rigour that further and higher education institutions and employers demand, and that you and your learners deserve.

Rod Smith
MD, Vocational & Applied, Pearson UK

Learn more at www.btec.co.uk/engineering2012
Introducing BTEC Firsts in Engineering

Between 2010 and 2020, engineering companies are projected to have 2.74 million job openings across a diverse range of disciplines. The engineering sector has a crucial role to play in delivering growth and allowing companies to compete in a rapidly growing global market.

As a result, there are many exciting career opportunities, including mechanical or electrical engineering, technical design, estimating or quality control, across many sectors such as universities, automotive, renewable energy, aerospace, creative industries, utilities, agri-food and bioscience.

BTEC Firsts in Engineering provide a practical, real-world approach to learning and develop specific knowledge and skills learners need to work successfully in the engineering industry, such as:

- Discovering the world of engineering and how it impacts on our world today
- Communication skills to articulate and discuss new ideas or work as a team to solve problems
- Health and safety in the workplace and the appropriate procedures and legislation
- How mathematics and science is essential to engineering success.

Learners will also be able to present their work in a variety of ways, including:

- Presentations
- Demonstrations
- Producing models and prototypes.

The following pages provide more detail about the structure and units of the BTEC Firsts in Engineering. Pages 18-19 look at progression and show how BTECs have opened doors for others.
Qualification structure

BTEC Firsts are available in four sizes to fit within a wide variety of curriculum contexts for level 2 learners. The range of sizes and options make them an appealing option for learners at both schools and colleges. The smallest option, at the size of a GCSE, can fit in alongside academic options to provide breadth for learners and give them the chance to follow their interests. The largest size, at 480 GLH, has been created to fit well in a 600 GLH programme of study, so learners can focus on gaining an in-depth knowledge of the subject while taking a smaller qualification, such as English or maths GCSE, alongside it.

<table>
<thead>
<tr>
<th>Qualification Size</th>
<th>Units</th>
<th>Total Guided Learning Hours (GLH)</th>
</tr>
</thead>
</table>
| Award              | 2 core units (totalling 60 GLH)  
2 optional specialist units (totalling 60 GLH) | 120 GLH (1 GCSE size) |
| Certificate        | 2 core units (totalling 60 GLH)  
2 mandatory units (totalling 60 GLH) 
2-4 optional specialist units (totalling 120 GLH) | 240 GLH (2 GCSEs size) |
| Extended Certificate | 2 core units (totalling 60 GLH)  
2 mandatory units (totalling 60 GLH) 
4-8 optional specialist units (totalling 240 GLH) | 360 GLH (3 GCSEs size) |
| Diploma            | 3 core units (totalling 120 GLH)  
4 mandatory units (totalling 120 GLH) 
4–6 optional specialist units (totalling 240 GLH) of which at least two must be chosen from group A. | 480 GLH (4 GCSEs size) |

The combination of the core, mandatory and optional specialist units ensures that all learners develop areas of essential knowledge, as well as providing the chance to tailor the BTEC towards the specific needs and interests of your learners.
Core units

Core units provide an essential core of knowledge and applied skills. Developed in close consultation with employers and educators, these core units provide an essential platform of knowledge, understanding and applied skills from which every level 2 learner can build the progression pathway that’s right for them – be that into further academic or vocational learning, into higher education or into employment.

<table>
<thead>
<tr>
<th>Core units</th>
<th>Award</th>
<th>Certificate</th>
<th>Extended Certificate</th>
<th>Diploma</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit 1: The Engineered World (30 GLH)</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>What is ‘engineering’? Is it using materials and processes to manufacture a single item? Is it applying new technologies to the mass production of well-known products? Or is it implementing methods to reduce waste and improve the sustainability of energy sources? Engineering is all of these things and many more. In this unit, learners will discover the world of engineering. They will investigate the processes used to manufacture modern products within different engineering sectors and study some of the new developments in materials and engineering technology that have an impact on life today – or will have in the very near future.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Unit 2: Investigating an Engineered Product (30 GLH)</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>When a product is being designed to meet a need, crucial decisions must be taken. The designer must ask key questions about the product, for example what form might it take; what functions must it fulfil; what user and performance requirements must be included; and what materials should be used to make it fit for purpose. In this unit learners will investigate a manufactured product to learn what considerations a designer would keep in mind when writing a technical specification.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Unit 21: Introduction to Communications for Engineering (60 GLH)</strong></td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>When designing, how early do engineers consider their initial thoughts and concepts? Engineers often discuss design ideas or problem-solving methods. They show and share ideas and solutions through sketches and verbal discussions. This unit will help learners to develop a range of sketching skills to be used in engineering. They will learn about the use of a diary/logbook to help plan and record what happens as well as information sources and how methods can be used effectively to outline engineering information and solve problems.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Mandatory units**

In addition to the core units, the BTEC First Certificate, Extended Certificate and Diploma sizes also contain additional mandatory units. These mandatory units ensure learners gain a deep understanding and knowledge of a specialist subject area to ensure they have the specialist skills they need to be successful in the industry.

<table>
<thead>
<tr>
<th>Mandatory Units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit 3: Health and Safety in Engineering</strong> (30 GLH)*</td>
</tr>
<tr>
<td>The ability to work safely in an engineering environment is essential for everyone. This unit will help learners to understand health and safety requirements and to know how to prepare and carry out an activity safely in the engineering work place. The initial focus of the unit is on gaining awareness of the dangers of not working within appropriate legislation and procedures.</td>
</tr>
</tbody>
</table>

*Unit 3: Health and Safety in Engineering and Unit 5: Engineering Materials are optional specialist units for the Award, Certificate and Extended Certificate sizes.*

<table>
<thead>
<tr>
<th>Award</th>
<th>Certificate</th>
<th>Extended Certificate</th>
<th>Diploma</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️</td>
<td>✔️</td>
<td>✗</td>
<td>✔️</td>
</tr>
</tbody>
</table>

| **Unit 5: Engineering Materials** (30 GLH)* |
| Engineering technicians need to be able to identify materials that are specified on engineering drawings, production plans and servicing schedules. It is essential for engineers to select the correct material if a product or a replaced component is to be fit for its intended purpose. This unit will develop learners knowledge of a range of common materials they may encounter in engineering, as well as their properties, uses, availability, and how they contribute to a sustainable environment. |

<table>
<thead>
<tr>
<th>Award</th>
<th>Certificate</th>
<th>Extended Certificate</th>
<th>Diploma</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️</td>
<td>✔️</td>
<td>✗</td>
<td>✔️</td>
</tr>
</tbody>
</table>

| **Unit 9: Interpreting and Using Engineering Information** (30 GLH) |
| Have you ever wondered how modern Formula 1 racing cars are manufactured and assembled so accurately and quickly? The rapid development of such a precise piece of engineering requires skilled engineers to read, interpret and understand engineering drawings and other types of engineering information and documentation with ease. This unit will enable learners to know how to make effective use of textual, numeric, diagrammatic and graphical information when working with engineering drawings, technical manuals, reference tables, etc in accordance with approved procedures. |

<table>
<thead>
<tr>
<th>Award</th>
<th>Certificate</th>
<th>Extended Certificate</th>
<th>Diploma</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>

| **Unit 10: Mathematics for Engineering** (30 GLH) |
| Think about a design engineer working on a new eco-friendly car that can run on batteries or diesel fuel. How far will it travel before the batteries need recharging? Should the diesel engine be used to charge the batteries or is it better to plug it in overnight? What is the weight of the car? How much steel will be needed to manufacture the body? This unit provides learners with the starting point to gain the mathematical skills needed to solve many of the interesting challenges which car designers and other engineers face on a day-to-day basis. |

<table>
<thead>
<tr>
<th>Award</th>
<th>Certificate</th>
<th>Extended Certificate</th>
<th>Diploma</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>

Learn more at www.btec.co.uk/engineering2012
Optional specialist units

A broad range of optional specialist units provides the opportunity for learners to focus more closely on a vocational area, supporting progression into a more specialised level 3 vocational course, academic course or into an apprenticeship. Centres can select units appropriate to their learners’ needs, local community and centre resources.

<table>
<thead>
<tr>
<th>Optional specialist units</th>
<th>GLH</th>
<th>Award</th>
<th>Certificate</th>
<th>Extended Certificate</th>
<th>Diploma Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit 3: Health and Safety in Engineering*</td>
<td>30</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Unit 4: Engineering Maintenance</td>
<td>30</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>B</td>
</tr>
<tr>
<td>Unit 5: Engineering Materials*</td>
<td>30</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Unit 6: Computer-aided Engineering</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>B</td>
</tr>
<tr>
<td>Unit 7: Machining Techniques</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>A</td>
</tr>
<tr>
<td>Unit 8: Electronic Circuit Design and Construction</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>A</td>
</tr>
<tr>
<td>Unit 11: Electrical and Mechanical Science for Engineering</td>
<td>30</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Unit 12: Engineering Design</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>B</td>
</tr>
<tr>
<td>Unit 13: Engineering Assembly</td>
<td>30</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>B</td>
</tr>
<tr>
<td>Unit 14: Vehicle Engines and Other Systems</td>
<td>30</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>B</td>
</tr>
<tr>
<td>Unit 15: Operating an Efficient Workplace</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>A</td>
</tr>
<tr>
<td>Unit 16: Vehicle Electrical Systems</td>
<td>30</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>B</td>
</tr>
<tr>
<td>Unit 17: Welding</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>B</td>
</tr>
<tr>
<td>Unit 18: Computer Numerical Control Programming</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>A</td>
</tr>
<tr>
<td>Unit 19: Bicycle Servicing and Maintenance</td>
<td>30</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>B</td>
</tr>
<tr>
<td>Unit 20: Sustainable Vehicle Power and Structure Design</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>B</td>
</tr>
<tr>
<td>Unit 22: Continuous Improvement and Problem-Solving</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>B</td>
</tr>
<tr>
<td>Unit 23: Electronic Devices and Communication Applications</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>B</td>
</tr>
<tr>
<td>Unit 24: Operation and Maintenance of Mechanical Systems and Components</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>B</td>
</tr>
<tr>
<td>Unit 25: Operation and Maintenance of Electronic Systems and Components</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>B</td>
</tr>
<tr>
<td>Unit 26: Operation and Maintenance of Electrical Systems and Components</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>B</td>
</tr>
<tr>
<td>Unit 27: Operation and Maintenance of Fluid Power Systems and Components</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>B</td>
</tr>
<tr>
<td>Unit 28: Fabrication Techniques</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>B</td>
</tr>
<tr>
<td>Unit 29: Casting Techniques</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>B</td>
</tr>
<tr>
<td>Unit 30: Vehicle Maintenance Techniques</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>B</td>
</tr>
<tr>
<td>Unit 31: Production Planning for Engineering</td>
<td>30</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>B</td>
</tr>
<tr>
<td>Unit 32: Engineering Marking Out</td>
<td>30</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>B</td>
</tr>
<tr>
<td>Unit 33: Preparing and Controlling Engineering Manufacturing Operations</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>B</td>
</tr>
<tr>
<td>Unit 34: PC Software and Hardware in Engineering</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>B</td>
</tr>
<tr>
<td>Unit 35: Application of Quality Control and Measurement in Engineering</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>B</td>
</tr>
</tbody>
</table>

*Unit 3: Health and Safety in Engineering and Unit 5: Engineering Materials are mandatory units for the Diploma size.

^At least two optional specialist units for the Diploma size must be chosen from group A.
Unit and qualification grading

Unit grading
Grading at unit level requires learners to achieve all the relevant criteria, up to and including the attained grade. This means a student achieving a Distinction for an individual unit will need to achieve all the criteria for a Level 1, Level 2 Pass, Merit and Distinction.

We’ve also introduced a ‘Level 1’ grade for our next generation of BTECs. We recognise that some learners may pass the level 1 elements of the qualification, yet not achieve a full pass at level 2, so we have included the opportunity for learners to gain a level 1 qualification. Our BTEC Firsts have been designed for level 2 learners. If a learner has a good chance of achieving at level 2, perhaps with some stretching, then the BTEC First is likely to be the right option.

We also offer a market-leading range of level 1 BTECs and we believe these qualifications remain the best choice for learners clearly at this level. They are specifically designed to meet the needs of level 1 learners and provide an excellent platform for progression to the BTEC Firsts.

Qualification grading
While individual unit grades are rigorous in reflecting achievement in a specific area of knowledge, qualification grades are calculated through an aggregation process to reflect performance, achievement and competence across the whole course.

The qualification grade is calculated across the whole qualification using a points-based scale. That means the final grade will accurately reflect the landscape of learner achievement and showcase their strengths, so problems with an individual unit will not necessarily create a barrier to recognition of overall achievement.

<table>
<thead>
<tr>
<th>Award (120 GLH)</th>
<th>Certificate (240 GLH)</th>
<th>Extended Certificate (360 GLH)</th>
<th>Diploma (480 GLH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade</td>
<td>Points threshold</td>
<td>Grade</td>
<td>Points threshold</td>
</tr>
<tr>
<td>U</td>
<td>0</td>
<td>U</td>
<td>0</td>
</tr>
<tr>
<td>Level 1</td>
<td>24</td>
<td>Level 1</td>
<td>48</td>
</tr>
<tr>
<td>Level 2 Pass</td>
<td>48</td>
<td>Level 2 PP</td>
<td>96</td>
</tr>
<tr>
<td>Level 2 MP</td>
<td>114</td>
<td>Level 2 MP</td>
<td>174</td>
</tr>
<tr>
<td>Level 2 Merit</td>
<td>66</td>
<td>Level 2 MM</td>
<td>132</td>
</tr>
<tr>
<td>Level 2 DM</td>
<td>150</td>
<td>Level 2 DM</td>
<td>234</td>
</tr>
<tr>
<td>Level 2 Distinction</td>
<td>84</td>
<td>Level 2 DD</td>
<td>168</td>
</tr>
<tr>
<td>Level 2 D*D</td>
<td>174</td>
<td>Level 2 D*D</td>
<td>270</td>
</tr>
<tr>
<td>Level 2 Distinction*</td>
<td>90</td>
<td>Level 2 D<em>D</em></td>
<td>180</td>
</tr>
</tbody>
</table>
Balanced assessment to support progression

Internal assessment
We believe in the power of teacher-led assessment – locally devised assignments set and marked by teachers and tutors. Internal assessment therefore remains very much at the heart of the next generation BTECs.

We’ve improved the clarity of the learning aims and assessment, particularly for Merit and Distinction grades. We’ve also enhanced the quality assurance model so you can see how the BTEC standards are applied across all learners, centres and assessors.

External assessment
We’ve also introduced an element of external assessment to support the broadest possible progression opportunities for level 2 learners. The amount of external assessment remains proportionate – at least 75% will be internally assessed with a maximum of 25% externally assessed.

<table>
<thead>
<tr>
<th>Unit</th>
<th>What external assessment looks like</th>
<th>Award</th>
<th>Certificate</th>
<th>Extended Certificate</th>
<th>Diploma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit 1: The Engineered World</td>
<td>This unit is externally assessed using an onscreen test. Edexcel sets and marks the test. The assessment must be taken by the learner under examination conditions. The external assessment will be 1 hour.</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Unit 9: Interpreting and Using Engineering Information</td>
<td>This unit is externally assessed using a paper-based exam. Edexcel sets and marks the exam. The assessment must be taken by the learner under examination conditions. The external assessment will be 1 hour and 30 minutes.</td>
<td>☒️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>

See pages 12-13 to learn more about assessment support
Supporting robust quality and standards

Quality assurance
We ensure qualification standards are maintained for centre-led assessment of our BTEC programmes through a robust quality assurance model.

Our quality assurance model for next generation BTECs will include:

- comprehensive training and support for Internal Verification, to ensure centres have a sound understanding of the qualification standard
- an annual Quality Review and Development visit, (this covers all BTEC programmes) to check implementation against quality objectives and measures.
- annual Standards Verification sampling of assessment decisions and assignments.

The next generation BTEC Firsts sampling model
- The Standards Verification sample is based on units, assessors and cohort size. Samples will be drawn from completed units.
- A minimum of 5 samples of learner work from the core internally assessed units will be sampled every year.
- Up to 15 samples of learner work across selected optional units will be sampled every year depending on the option units chosen. Centres with very large numbers of learners will need to provide more samples.

Lead Internal Verifiers
For BTEC Firsts, the role of the Lead Internal Verifier continues to be vital to ensure rigorous standards in BTEC centre-led assessment.

The Lead Internal Verifier will retain overall responsibility for the assessment of a BTEC programme within a centre. As now, there will be comprehensive standardisation available on the Online Standardisation for Centre Assessors (OSCA) system. These materials should be used by the Lead Internal Verifier to standardise their internal verification team. This training should be completed prior to any assessment decisions being taken. New OSCA materials are released every year and the Lead Internal Verifier will need to confirm each year that they have used the materials to standardise their team.

Standards Verification will take place during a visit from a Pearson trained Standards Verifier. They will contact centres directly to arrange the visit.

Learn more at www.btec.co.uk/engineering2012
With you every step of the way

We’re providing more support than ever before to help you get off to a great start. Our comprehensive online specification packs are growing to include a wide range of support to help you plan, deliver and assess BTEC with confidence.

Planning

**Specification** – Giving you clear, handy guidance on the unit-by-unit content and learning outcomes.

**Sample assessment materials (SAMs)** – External assessment is new to BTEC, and these SAMs provide you with examples so you can help your learners prepare for and take assessment with confidence.

**Mapping grids** – Provide a comparison between the existing BTEC Firsts and the next generation BTEC First Awards, so you can plan for the new structure more easily.

**Sample schemes of work** – For a selection of core units to help you plan your teaching.

**Getting started guide** – Providing essential advice, top tips and a range of tools to help you plan and deliver the next generation BTEC Firsts.

**Delivery guide** – A companion to the specification that contains a wealth of ideas for practical activities, useful advice about external assessment and tips to help you find new, engaging ways to deliver the BTEC programme.

Delivery

**Pearson authorised assignment briefs** – A range of assignment briefs which you can use ‘off the shelf’ or edit and adapt to suit your course.

**Assignment checking service** – A free support service for BTEC centres, designed to help you ensure that your assignments enable learners to demonstrate appropriate evidence across the required criteria. Learn more at [www.btec.co.uk/assignmentcheckingservice](http://www.btec.co.uk/assignmentcheckingservice).

**Study skills activities** – A range of case studies and activities, designed to help your learners develop the skills they will need to successfully complete their BTEC course.
Becoming a BTEC centre

If you’re not already running BTECs then you’ll need to become an approved centre. Approval is straightforward and we’re here to support and guide you through the process. Simply visit www.btec.co.uk/becomeapproved for a step-by-step guide. Once your centre is approved, you can select the qualifications you want to deliver at www.edexcelonline.co.uk.

Assessment

Quality assurance – The quality assurance process enables you to drive quality across all your programmes by supporting Lead Internal Verifiers in your centres, quality review and development visits and sampling Standards Verifiers.

Training and support whenever you need it

Subject advisor service – Led by Mike Deacon, the subject advisor service will help solve engineering qualification queries and provide a means of sharing ideas, information and concerns. Email Mike directly at TeachingEngineering@pearson.com.

CPD and Training – We have developed a comprehensive selection of training and events which are engaging, relevant and extremely useful for anyone involved with BTEC. For the latest training events, visit www.btec.co.uk/training.

Customer services – Our customer service teams specialise in looking after teachers, exams officers and work-based learning providers so you can get in touch with the person best placed to answer your question. Visit www.edexcel.com/contactus to find the right team to answer your question.
myBTEC is a new online toolkit to streamline BTEC planning, delivery and assessment, giving you more time to spend with your learners.

If you’re an approved BTEC centre in the UK, it’s absolutely FREE to access.

Courses

With myBTEC, it’s simple to plan your BTEC courses. It’s about planning a new, valid course in less time.

Assignments

With myBTEC, it’s easy to find authorised assignments - and develop your own. It’s about accessing authorised assignment briefs - and giving you time and support to create your own.

Find the authorised assignment briefs available for the units in your course - or create your own with confidence using the template.

These services will be released during 2013 and 2014. Learn more at:

www.btec.co.uk/myBTEC
Resources

Find, store, organise
Find the free support and resources available for the units in your courses.
• Create a wish list of the resources you would like.
• Organise your resources in the way that works for you.
• Browse paid-for resources from Pearson and link to information on a full range of endorsed resources.

Progress Tracker

Assess, record, track
• Let myBTEC do the record keeping for you; you’ll have the information you need to give quality feedback and support to your learners.
• Access automatically-generated tracking sheets.
• Record assessment decisions with a single click.
• Motivate your learners - enter target grades and focus on how they can achieve them.

ePortfolio

With myBTEC, you and your learners have access to one online space.
It’s about empowering your learners to monitor their own progress and giving you time to view and assess all their work in one place.

Learn, achieve, progress
• Every learner will have a secure login to their own personal BTEC space.
• It’ll be easy for them to upload and store their own evidence and access their individual progress tracking sheets.
• Teachers and assessors will be able to view learners’ evidence in the ePortfolio.
New resources for BTEC Firsts

You’ll be able to choose from a range of learning and teaching resources available from individual publishers to support the BTEC Firsts in Engineering. Pearson has developed the following learning and teaching resources to support planning and delivery for the BTEC Firsts.

Student Books

- Contains all of the underpinning knowledge and understanding needed at level 2 to ensure that learners are fully prepared for the course.
- Each unit is presented in topics to ensure the content is accessible and engaging for learners.
- Activities in each unit provide support and clear direction for learners and can be used in the classroom or for independent work.
- The new ‘Assessment Zone’ guides learners through both internal and external assessment.
- Assessment activities and tips will help learners to achieve their potential in internally-assessed units.

Evaluate Pearson resources for BTEC

Now you can evaluate online with our interactive online evaluation guides. Learn more at www.pearsonfe.co.uk/trybtec2012

Units covered

Unit 1: The Engineered World
Unit 2: Investigating an Engineered Product
Unit 5: Engineering Materials
Unit 6: Computer-aided Engineering
Unit 7: Machining Techniques
Unit 8: Electronic Circuit Design and Construction
Unit 9: Interpreting and Using Engineering Information*
Unit 10: Mathematics for Engineering*
Unit 11: Electrical and Mechanical Science for Engineering*

*BTEC First in Engineering Student Book only

BTEC First in Engineering Student Book
978 1 446902 43 1 £21.00

BTEC First Award Engineering Student Book
978 1 446905 63 0 £16.99

Resources to support the new BTEC Firsts

A range of learning and teaching resources will be available to support the new Go to www.edexcel.com/resources for a complete list of endorsed materials, or
Teaching and Assessment Packs

The online Teaching and Assessment Packs provide the tools you need for planning, delivery and assessment in one convenient place. Available to buy unit by unit, you can build your own personal BTEC delivery support package and just pay for what you need.

Two types of packs are available covering the core and mandatory units and a wide selection of optional specialist units across the Award, Certificate and Extended Certificate:

1. **Standard Packs** offer core teaching support (in Word and PowerPoint format) including schemes of work, lesson plans, presentation slides and activity sheets.

2. **Interactive Packs** will be available through myBTEC and will contain everything a Standard Pack contains, as well as access to rich media content – such as interactive activities – to really engage learners.

Our Teaching and Assessment Packs can include the following (pack contents may vary):

<table>
<thead>
<tr>
<th>Plan</th>
<th>Deliver</th>
<th>Assess</th>
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</thead>
<tbody>
<tr>
<td>Teacher guidance: Clear guidance from BTEC experts on approaches for unit delivery and assessment.</td>
<td>Presentation slides: For whole-class use to introduce the unit.</td>
<td>Tools for evidence collection: Activity sheets linked to assessment criteria for use with assignments.</td>
</tr>
<tr>
<td>Scheme of work: Showing you how to deliver the unit and assess learner achievement using Pearson resources.</td>
<td>Activity sheets: Time-saving ideas for whole-class or individual use during the development of skills and knowledge.</td>
<td>Practice for external tests.</td>
</tr>
<tr>
<td>Sample lesson plan: Get straight into delivery with ideas for the first lesson.</td>
<td>Answers to activities in the Student Book and Teacher Assessment Pack.</td>
<td></td>
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<tr>
<td></td>
<td>Video clips:* For whole-class or individual use to demonstrate key concepts.</td>
<td></td>
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<tr>
<td></td>
<td>Interactive activities:* For individual learner use to reinforce understanding and revise for external assessment.</td>
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<tr>
<td></td>
<td>Interactive presentations:* Introduce key concepts/scenarios and test these with the whole class using the interactive whiteboard.</td>
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</tbody>
</table>

*Available in some interactive packs only.

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**Teaching and Assessment Packs**

<table>
<thead>
<tr>
<th>Unit 1: The Engineered World</th>
<th>978 1 4469 0244 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit 2: Investigating an Engineered Product</td>
<td>978 1 4469 0248 6</td>
</tr>
<tr>
<td>Unit 5: Engineering Materials</td>
<td>978 1 4469 0249 3</td>
</tr>
<tr>
<td>Unit 6: Computer-aided Engineering</td>
<td>978 1 4469 0250 9</td>
</tr>
<tr>
<td>Unit 7: Machining Techniques</td>
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<td>978 1 4469 0245 5</td>
</tr>
<tr>
<td>Unit 10: Mathematics for Engineering</td>
<td>978 1 4469 0246 2</td>
</tr>
<tr>
<td>Unit 11: Electrical and Mechanical Science for Engineering</td>
<td>978 1 4469 0247 9</td>
</tr>
</tbody>
</table>

For price and ordering information, visit www.pearsonfe.co.uk/trybtec2012.

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BTEC Firsts in Engineering. you can learn more on the individual publishers’ websites.
BTEC opens doors

For more than 25 years, BTEC learning has helped millions of people develop the knowledge and skills they need to progress in their chosen careers – and to get on in life.

Engaging and inspiring, these qualifications empower learners to move on to further or higher education, or to hit the ground running in a new job.

Did you know?

- Students who have a BTEC Level 2 qualification and five good GCSEs increase their lifetime earning potential by 5.9%, compared with those who have just five or more GCSEs.
- Over 100,000 BTEC students successfully progressed to higher education in 2010.
- Over 60% of BTEC learners also achieve five A*-C GCSEs.
- BTEC Level 2 transition rates stand at 40.4%. This is generally in excess of the transition rates from other forms of vocational qualifications.

Statistics taken from Returns to BTEC Vocational Qualifications, London Economics (October 2010)

BTEC and increased learner engagement…

“…The right qualifications for the right students which energises their enthusiasm, gives them confidence in their own abilities and raises the bar for them generally across a variety of curricular areas. Success breeds success and I am determinedly championing these rigorous qualifications to ensure a variety of learning styles are recognised and that independent learning continues to grow to help the students in the future with their studies and in employment.”

Lesley Howells, Assistant Head, Old Buckenham High School

BTEC and adding value and variety…

“The high-quality, on-site BTEC courses sit alongside the core GCSE courses and have had an excellent impact on the motivation and achievement in these subjects as well.”

Tim Berni, Head of Vocational Education, Orwell High School

BTEC and life skills…

“Vocational courses are ideal in enabling students to develop independent learning capacities which are transferable and essential for whatever their progression routes and future employment choices may be and in fact, these skills, I believe, will improve their future life chances.”

Helen Windel, Leader of Vocational Education, St Bede’s Catholic School and Sixth Form College, Lanchester
Fridah Nzaba has been awarded Outstanding Engineering Student of the Year. Fridah is in the final year of a BTEC Engineering Level 3 Subsidiary Diploma at Nottingham Academy and on track to achieve a Distinction*, having already achieved an overall Distinction* in her BTEC Engineering Level 2 Diploma. To further her development in her chosen career path of electrical engineering, Fridah is also studying for A levels in Physics, Maths and Business Studies. She has recently been accepted onto Rolls Royce Aerospace’s Higher Apprenticeship scheme and will start work for the company in September.

Fridah is an active member of her school where she has led on a peer education project with the Red Cross and is currently project managing a Greenpower team as they take on the development of an electric-powered race car. Fridah is keen to encourage other young people into engineering and the judges were impressed by her independence, proactive thinking and outstanding grades, all of which have led her to secure high-quality employment in her chosen field.

Thorpe St Andrew School in Norwich currently offers nine BTEC subjects at Levels 1 to 3 to 660 students. Ofsted rates it ‘good with outstanding elements’, its BTEC results are excellent (top 5% in the country at Key Stage 4) and many students complete their BTEC courses on or above their target grades.

Most of the school’s 25 BTEC teachers came from specialist employment and use their outstanding subject knowledge and business community links to organise excellent trips, guest speakers and work placements for their students. As a result of this high-quality teaching, 95% of the school’s Key Stage 5 students progress onto higher education or into employment.

Thorpe St Andrew has invested significantly in innovative resources during the nine years it has been offering BTECs, providing vocational students with a mock nursery, a swimming pool, an astroturf pitch and tennis courts, an ICT suite, a dance studio and an allotment. The judges were impressed by the school’s obvious commitment to vocational learning and its record of progression from BTECs onto university and employment.

www.btec.co.uk/nationalbtecawards
The new BTEC Firsts in Engineering have been developed to offer a genuine alternative to GCSEs, but can still be taught alongside academic qualifications. This means you can ensure that you are offering the right qualifications for your learners to enable them to achieve their full potential, using whichever route suits their learning style, be that academic or vocational, or a route that blends the two.

Visit www.btec.co.uk/engineering2012 to find learn more.

The information in this guide is correct at the time of going to press. For all the latest information on BTEC Firsts in Engineering for level 2 learners, visit www.btec.co.uk/engineering2012

Or contact our subject advisor, Mike Deacon TeachingEngineering@pearson.com

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