

Pearson BTEC Level 4 Higher National Certificate in Engineering for courses starting in Academic Year 2023/24

Course Leader:	Dr Robert Kershaw
Teaching Institution:	Herefordshire, Ludlow and North Shropshire College
Campus:	Hereford
Awarding Body:	Pearson
Final Award:	Pearson BTEC Level 4 Higher National Certificate in Engineering
Intermediate Award(s):	N/A
Mode of Study:	Part-time
Qualification number:	BZBD1
Date of programme specification preparation/revision:	June 2021 / June 2023

Educational aims of the programme

The aim of the Pearson BTEC Level 4 Higher National Certificate in Engineering offers students a broad introduction to the subject area via a mandatory core of learning, while allowing for the acquisition of some sector-specific skills and experience through the specialist units in each pathway, with the opportunity to pursue a particular interest through the appropriate selection of optional units. This effectively builds underpinning core skills while preparing the student for more intense subject specialisation at Level 5. Students will gain a wide range of sector knowledge tied to practical skills gained in research, self-study, directed study and workplace activities.

QAA and professional academic standards and quality

The Pearson BTEC Level 4 Higher National Certificate in Engineering is located at level 4 of the Framework for Higher Qualifications (2014).

The following university and further education tutors, employers, Professional Body representatives and other individuals who have generously shared their time and expertise to help us develop these new qualifications. Employers and Professional Bodies involved have included: Alstom, BMW, Eaton, GEN 2, Jaguar Land Rover, Railtrack, Siemens, UAE Military Logistics Support, Engineering Council, Royal Aeronautical Society, Royal Academy of Engineering, SEMTA, Society of Operations Engineers, The Institution of Engineering and Technology, The Institute of the Motor Industry, The Welding Institute, NFEC (National Forum of Engineering Centres), Newport Wafer Fab Ltd, Microchip Technology Inc, SPTS Technologies Ltd, IQE Plc, Aston University, Birmingham Metropolitan College, Blackpool and Fylde College, Bridgwater College, Brunel University, Coventry University College, University of Derby, St Helens College, Teesside University, UCL, Warwickshire College, University of South Wales and Cardiff and Vale College.

National Occupational Standards

Qualifications in engineering within the UK are referenced against the Engineering Council, UK Standard for Professional Engineering Competence (UK-SPEC) which sets standards at Levels 3, 6 and 8. The Pearson BTEC Higher Nationals in Engineering are set at Level 4 and 5 and have been written with reference to the Engineering Council specification for Level 3 and 6. The content and level has been written following advice from the Professional Bodies listed in section 1.7 above and is intended to exempt holders of this qualification from the Level 4 and 5 requirements of these bodies, and articulate with the Level 6 in engineering degree courses. Holders of a Pearson BTEC Higher National in Engineering meet the academic requirements for the Engineering Council Engineering Technician Standard (EngTech).

Higher-level Skills

Students need both good qualifications and employability skills to enhance their career prospects and personal development. Pearson Higher National engineering qualifications embed throughout the programme, the development of key skills, attributes and strengths required by 21st century employers.

Where employability skills are referred to in this specification, this generally refers to skills in three main categories and also specific commercial and business skills.

- Cognitive and problem-solving skills: critical thinking, approaching non-routine problems by applying expert and creative solutions, use of systems and digital technology, generating and communicating ideas creatively.
- Intra-personal skills: self-management, adaptability and resilience, self-monitoring and self-development, self-analysis and reflection, planning and prioritising.
- Interpersonal skills: effective communication and articulation of information, working collaboratively, negotiating and influencing, self-presentation.
- Commercial skills: sector awareness, budget management/monitoring.
- Business skills: awareness of types of companies, company formation, calculating fees, project management.

Course Structure

The Pearson BTEC Level 4 Higher National Certificate in Engineering is a qualification with a minimum of 120 credits of which 60 credits are mandatory.

Unit Number	Unit Title	Unit Level	Unit Credit
Mandatory units			
1	Engineering Design	15	4
2	Engineering Maths	15	4
3	Engineering Science	15	4
4	Managing a Professional Engineering Project (Pearson Set)	15	4
General Units			
29	Electro, Pneumatic and Hydraulic Systems	15	4
78	Programmable Logic Controllers	15	4
Specialist units for Mechanical Pathway only			
8	Mechanical Principles	15	4
23	Computer Aided Design and Manufacture (CAD/CAM)	15	4
Specialist units for Electrical and Electronic Pathway only			
19	Electrical & Electronic Principles	15	4
20	Digital Principles	15	4

Learning and Teaching Methods

Students will learn through a series of lectures, practical sessions, workshops, seminars and tutorials. They will also be required to undertake substantial independent study. Typically, this will involve completing online activities, reading journal articles and books, watching selected videos, working through example problems, working on individual and group projects, undertaking research in the library and online, preparing assignments and presentations.

Students will be taught by a teaching team whose expertise and knowledge are closely matched to the content of the modules on the course.

In a typical week, students will normally have 6 hours of teaching. The programme is normally delivered over 30 weeks.

Means of Assessment

Students working at higher levels should be capable of undertaking independent study and research, developing strategies to improve their own performance, supported by teaching staff.

Students will be required to complete coursework as they progress through the programme and undertake assessments at the end of each semester. The assessment of Pearson BTEC Level 4 Higher National qualifications is criterion-referenced and we are required to assess learners' evidence against published learning outcomes and assessment criteria. All units will be individually graded as 'pass', 'merit' or 'distinction'. To achieve a pass grade for the unit learners must meet the assessment criteria set out in the specifications. Merit and distinction grades are awarded for higher-level achievement.

All grades awarded are provisional until they are confirmed at the assessment board. This usually takes place at the end of an academic year.

Recognition of Prior Learning (RPL) is 'a method of assessment that considers whether an individual can demonstrate that they can meet the assessment requirements for a unit through knowledge, understanding or skills that they already possess and do not need to develop through a course of learning'. If individuals can produce relevant evidence that fully meets learning outcome requirements then RPL can be given for their existing knowledge, understanding or skills

External Examiner

The External Examiner (EE) is a subject assessment specialist appointed by Pearson to conduct external examination. They verify that the management of programmes and assessment decisions meet national standards. External examination is usually conducted by an annual visit, usually in the summer term.

Additional Support

Developing effective study skills is an essential element in achieving academic success. All module leaders provide individual academic support. This is in addition to Personal Academic Tutor support.

All students are provided with a Course Handbook that comprehensively outlines the programme and provides advice and guidance. Module outlines and assessment details are provided for all modules. During your studies you will have access to fully equipped classrooms, practical workshops, Library with text and electronic resources and Student Services.

The College is committed to ensuring that disabled people, including those with specific learning difficulties and/or mental health difficulties are treated fairly. Reasonable adjustments to provision will be made to ensure that disabled students are not disadvantaged. The Learning Support Service is your initial point of contact.

Entry Requirements

Entry criteria detail a typical offer but the College considers all applications on an individual basis which means that we could make offers based on qualifications, personal profile and experience. If you have any queries regarding your offer, please contact our Admissions Team.

Typical offer: For students who have recently been in education, the entry profile is likely to include one of the following:

- A* to C grade and/or 9 to 4 in GCSE Maths (or equivalent) is strongly recommended.
- A BTEC Level 3 qualification in Engineering
- A GCE Advanced Level profile that demonstrates strong performance in a relevant subject or adequate performance in more than one GCE subject. This profile is likely to be supported by GCSE grades at A* to C and/or 9 to 4 (or equivalent)
- Other related Level 3 qualifications
- An Access to Higher Education Diploma awarded by an approved further education institution
- Related work experience
- An international equivalent of the above

The College welcomes applications from motivated applicants from all backgrounds. We recognise that student potential is not always demonstrated within formal academic qualifications and welcome applications from individuals from backgrounds that are under-represented within higher education.

Course Exit Points

To achieve a Pearson BTEC Level 4 Higher National Certificate qualification a student must have:

- completed units equivalent to 120 credits at level 4
- achieved at least a pass in 105 credits at level 4.

Progression Route

The Pearson BTEC Level 4 Higher National Certificate provides a solid grounding in engineering, which students can build on should they decide to continue their studies beyond the Certificate stage onto Level 5.

The Pearson BTEC Level 5 Higher National Diploma allows students to specialise by committing to specific career paths and progression routes to degree-level study. On successful completion of the Pearson BTEC Level 5 Higher National Diploma, students can develop their careers in the engineering sector through:

- Entering employment
- Continuing existing employment
- Linking with the appropriate Professional Body
- Linking with the appropriate vendor accredited certificates [if appropriate]
- Committing to Continuing Professional Development (CPD)
- Progressing to university.

Please note: This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes, content and teaching, learning and assessment methods of each module can be found in associated course documentation e.g. course handbooks and module specifications.