

Pearson Edexcel Level 3 Diploma in Civil Engineering for Technicians (Institution of Civil Engineers)

Specification

Competence-based qualification

For first registration September 2010

Issue 3

Edexcel, BTEC and LCCI qualifications

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This specification is Issue 3. Key changes are listed in the summary table on the next page. We will inform centres of any changes to this issue. The latest issue can be found on the Pearson website: qualifications.pearson.com

This qualification was previously known as:

Pearson Level 3 Diploma in Civil Engineering for Technicians (Institution of Civil Engineers) (QCF)

The QN remains the same.

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Summary of Pearson Edexcel Level 3 Diploma in Civil Engineering for Technicians (Institution of Civil Engineers) specification Issue 3 changes

Summary of changes made between previous Issue 2 and this current Issue 3	Page/section number
All references to QCF have been removed throughout the specification	Throughout
Definition of TQT added	1
Definition of sizes of qualifications aligned to TQT	2
TQT value added	3
QCF references removed from unit titles and unit levels in all units	8-19

Earlier issue(s) show(s) previous changes.

If you need further information on these changes or what they mean, contact us via our website at: qualifications.pearson.com/en/support/contact-us.html.

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What are NVQ/Competence-based qualifications?

National Vocational Qualifications (NVQs) are work-based qualifications that give learners the opportunity to develop and demonstrate their competence in the area of work or job role to which the qualification relates.

NVQs are based on the National Occupational Standards (NOS) for the appropriate sector. NOS define what employees, or potential employees, must be able to do and know, and how well they should undertake work tasks and work roles. At Level 2 and above, these qualifications are recognised as the competence component of Apprenticeship Frameworks. Qualifications at Level 1 can be used in Traineeships, which are stepping stones to Apprenticeship qualifications. NVQs can also be delivered as stand alone for those who wish to take a work-based qualification.

NVQs are outcomes based with no fixed learning programme – allowing flexible delivery that meets the individual learner’s needs. They are suitable for those in employment and for those who are studying at college and have a part-time job or access to a substantial work placement – so that they are able to demonstrate the competencies required for work.

Most learners will work towards their qualification in the workplace or in settings that replicate the working environment as specified in the assessment requirements/strategy for the sector. Colleges, training centres and/or employers can offer these qualifications provided they have access to appropriate physical and human resources.

Sizes of NVQ/Competence-based qualifications

For all regulated qualifications, we specify a total number of hours that learners are expected to undertake in order to complete and show achievement for the qualification – this is the Total Qualification Time (TQT). The TQT value indicates the size of a qualification.

Within the TQT, we identify the number of Guided Learning Hours (GLH) that a centre delivering the qualification needs to provide. Guided learning means activities that directly or immediately involve tutors and assessors in teaching, supervising, and invigilating learners, for example lectures, tutorials, online instruction and supervised study.

As well as guided learning, there may be other required learning that is directed by tutors or assessors. This includes, for example, private study, preparation for assessment and undertaking assessment when not under supervision, such as preparatory reading, revision and independent research.

As well as TQT and GLH, qualifications can also have a credit value – equal to one tenth of TQT, rounded to the nearest whole number.

TQT and credit values are assigned after consultation with users of the qualifications.

NVQ/Competence-based qualifications are available in the following sizes:

- Award – a qualification with a TQT value of 120 or less (equivalent to a range of 1–12 credits)
- Certificate – a qualification with a TQT value in the range of 121–369 (equivalent to a range of 13–36 credits)
- Diploma – a qualification with a TQT value of 370 or more (equivalent to 37 credits and above).

Qualification title covered by this specification

This specification gives you the information you need to offer the Pearson Edexcel Level 3 Diploma in Civil Engineering for Technicians (Institution of Civil Engineers):

Qualification title	Qualification Number (QN)	Accreditation start date
Pearson Edexcel Level 3 Diploma in Civil Engineering for Technicians (Institution of Civil Engineers)	501/1115/2	01/09/2010

Qualifications eligible and funded for post-16-year-olds can be found on the funding Hub. The Skills Funding Agency also publishes a funding catalogue that lists the qualifications available for 19+ funding.

You should use the Qualification Number (QN), when you wish to seek public funding for your learners. Each unit within a qualification will also have a unique reference number, which is listed in this specification.

The qualification title and unit reference numbers will appear on the learners' final certification document. Learners need to be made aware of this when they are recruited by the centre and registered with Pearson.

Key features of the Pearson Edexcel Level 3 Diploma in Civil Engineering for Technicians (Institution of Civil Engineers)

This qualification:

- is nationally recognised
- is based on the Built Environment Design and Construction Contracting Operations National Occupational Standards (NOS). The NOS, assessment requirements/strategy and qualification structures are owned by ConstructionSkills.

The Pearson Edexcel Level 3 Diploma in Civil Engineering for Technicians (Institution of Civil Engineers) has been approved as a component for the Advanced Apprenticeship frameworks for both Built Environment Design and Construction Contracting Operations.

What is the purpose of this qualification?

This qualification will allow apprentices undertaking a Civil Engineering Technical Apprenticeship to fulfil the requirements of the competence based component of the apprenticeship, with appropriate underpinning knowledge and professional attributes. It will also meet the requirements for Technician Membership of the Institution of Civil Engineers, subject to success at a subsequent professional review. It contributes to the development of trained technician level personnel for the sector, and is a response to expressed employer need via the Civil Engineering Employers Training Group (CEETG) which ICE hosts.

Who is this qualification for?

This qualification is for all learners aged 16 and above who are capable of reaching the required standards.

Pearson's policy is that the qualification should:

- be free from any barriers that restrict access and progression
- ensure equality of opportunity for all wishing to access the qualification.

Demonstrating competence in some construction site based occupations may prove to be a barrier for some disabled learners, but alternative assessment opportunities may be considered.

What are the benefits of this qualification to the learner and employer?

This qualification will assist companies to meet their contractual obligations with regards to public procurement, to provide apprenticeships and to have sufficient professionally qualified staff.

Learners will have a qualification that enables them to seek professional registration as an Engineering Technician (EngTech) with the Engineering Council.

What are the potential job roles for those working towards this qualification?

- Civil Engineering Technician in a variety of settings with contractors, consultants, government agencies, local authorities and other client bodies.

What progression opportunities are available to learners who achieve this qualification?

Learners would be able to progress to the Pearson BTEC Higher National Certificate in Construction and the Pearson BTEC Higher National Diploma in Construction.

Progression will also be possible to Foundation Degrees, BSc and BEng degrees in construction and civil engineering. Ultimately students can progress to MEng and MSc.

Further information is available in Annexe A.

What is the qualification structure for the Pearson Edexcel Level 3 Diploma in Civil Engineering for Technicians (Institution of Civil Engineers)?

Individual units can be found in the *Units* section. The level and credit value are given on the first page of each unit.

All units are compulsory. The units are as follows:

Unit 1: Techniques, procedures and methods for civil engineering tasks

Unit 2: Develop and finalise civil engineering solutions

Unit 3: Management and leadership in civil engineering

Unit 4: Independent judgement and responsibility in civil engineering

Unit 5: Commercial awareness in civil engineering

Unit 6: Health, safety and welfare for civil engineers

Unit 7: Sustainable development in civil engineering

Unit 8: Interpersonal skills and communication in civil engineering

Unit 9: Professional commitment for civil engineers

The Total Qualification Time (TQT) for this qualification is 1300.

How is the qualification graded and assessed?

The overall grade for the qualification is a 'pass'. The learner must achieve all the required units within the specified qualification structure.

To pass a unit the learner must:

- achieve **all** the specified learning outcomes
- satisfy **all** the assessment criteria by providing sufficient and valid evidence for each criterion
- show that the evidence is their own.

The qualification is designed to be assessed:

- in the workplace
- as part of a training programme
- in conditions resembling the workplace.

Assessment requirements

The assessment requirements for this qualification have been included in *Annexe C*. They have been developed by the Institution of Civil Engineers in partnership with employers, training providers, the sector skills council, the awarding organisation and the regulatory authorities. The assessment strategy includes details on:

- criteria for defining realistic working environments
- roles and occupational competence of assessors, expert witnesses, internal verifiers, standards verifiers and ICE mentors

Evidence of competence may come from:

- **current practice** where evidence is generated from a current job role
- a **programme of development** where evidence comes from assessment opportunities built into a learning/training programme whether at or away from the workplace
- the **Recognition of Prior Learning (RPL)** where a learner can demonstrate that they can meet the assessment criteria within a unit through knowledge, understanding or skills they already possess without undertaking a course of learning. They must submit sufficient, reliable and valid evidence for internal and standards verification purposes. RPL is acceptable for accrediting a unit, several units or a whole qualification
- a **combination** of these.

It is important that the evidence is:

Valid	relevant to the standards for which competence is claimed
Authentic	produced by the learner
Current	sufficiently recent to create confidence that the same skill, understanding or knowledge persist at the time of the claim
Reliable	indicates that the learner can consistently perform at this level
Sufficient	fully meets the requirements of the standards.

Types of evidence

To successfully achieve a unit the learner must gather evidence which shows that they have met the required standard in the assessment criteria. Evidence can take a variety of different forms including the following examples:

- direct observation of the learner's performance by their assessor
- outcomes from oral or written questioning
- products of the learner's work
- personal statements
- experience report
- reflective accounts
- outcomes from simulation, where permitted by the assessment strategy
- professional discussion/interview
- assignment, project/case studies, written reports
- authentic statements/witness testimony
- expert witness testimony
- evidence of Recognition of Prior Learning.

Learners can use one piece of evidence to prove their knowledge, skills and understanding across different assessment criteria and/or across different units. It is, therefore, not necessary for learners to have each assessment criterion assessed separately. Learners should be encouraged to reference the assessment criteria to which the evidence relates.

Evidence must be made available to the assessor, internal verifier and Pearson standards verifier.

Centre recognition and approval

Centre recognition

Centres that have not previously offered Pearson qualifications need to apply for and be granted centre recognition as part of the process for approval to offer individual qualifications. New centres must complete both a centre recognition approval application and a qualification approval application.

Existing centres will be given 'automatic approval' for a new qualification if they are already approved for a qualification that is being replaced by the new qualification and the conditions for automatic approval are met. Centres already holding Pearson approval are able to gain qualification approval for a different level or different sector via Pearson online.

Approvals agreement

All centres are required to enter into an approvals agreement which is a formal commitment by the head or principal of a centre to meet all the requirements of the specification and any linked codes or regulations. Pearson will act to protect the integrity of the awarding of qualifications, if centres do not comply with the agreement. This could result in the suspension of certification or withdrawal of approval.

Quality assurance

Detailed information on Pearson's quality assurance processes is given in *Annexe A*.

What resources are required to deliver this qualification?

This qualification is designed to support learners working in the Construction and Built Environment sector. Physical resources need to support the delivery of the qualifications and the assessment of the learning outcomes and must be of industry standard. Staff assessing the learner must meet the requirements within the overarching assessment strategy for the sector.

Units

Guidance for Tutors

The following pages describe the operation of the Units in relation to how the recording of evidence will operate. Guidance is offered to trainees, mentors, assessors and verifiers in terms of how to complete the units and the evidence that is required. Additionally the guidance integrates the achievement of the qualification with the process leading towards professional registration.

Assessors and verifiers will either have or be working towards the relevant Assessor and Quality Assurance qualifications.

The trainee will gather a portfolio of evidence based upon the principles of an ICE development report (see Annexe C).

The portfolio record tables should reference the development report and both the development report and the record should use the key provided below to indicate the type of evidence that has been gathered for each unit, using the following headers as an indicator for the type of evidence claimed.

O	Observation
Q&A	Questions and answers
P	Learner products
RA	Reflective accounts/ personal statements
S	Simulation
PD	Professional discussion
A	Assignment, project/case studies
WT	Witness testimony
EPW	Expert witness evidence
RPL	Recognition of Prior Learning

In relation to the evidence required for the Units, the portfolio record tables included below will be used to record the progress of the trainee and provide reference to the type and the location of the evidence claimed.

From April 2015, the Institution of Civil Engineers' assessment of the Engineering Technician (EngTech) standard consists of five competency areas based on the latest revision of the Engineering Council's UK-SPEC.

The units in this qualification are mapped to the UK-SPEC standards as described in ICE's Technician Professional Review Guidance.

Unit 1: Techniques, procedures and methods for civil engineering tasks

Unit title: Techniques, procedures and methods for civil engineering tasks			Unit code: CET 1		
Unit reference number: L/602/2211			Level: 3		
Credit value: 16			Guided learning hours: 48		
Unit summary: This unit allows the learner to demonstrate that they have built an appropriate set of technical skills to enable them to perform engineering tasks			Assessment requirements/evidence requirements: Portfolio of evidence		
Assessment methodology: Work based evaluation					
Learning outcomes:	Assessment criteria:	Suggested Development Activity:	UK-SPEC mapping:	Evidence type:	Portfolio reference and date:
1 Be able to use technical skills to perform engineering tasks	1.1 Review techniques, procedures and methods to undertake engineering tasks	Identify limits of own personal knowledge and skills Acquire engineering knowledge through project work	A1		
	1.1 Select appropriate techniques, procedures and methods to undertake engineering tasks	Identify the engineering principles used in your work Use engineering codes	A1		
	1.3 Use appropriate techniques, procedures and methods to undertake tasks	Use engineering standards Prepare, plan and use engineering specifications.	A2		

Unit 2: Develop and finalise civil engineering solutions

Unit title: Develop and finalise civil engineering solutions			Unit code: CET 2		
Unit reference number: M/602/2217			Level: 3		
Credit value: 17			Guided learning hours: 51		
Unit summary: This unit allows the learner to demonstrate that they have an appropriate set of technical skills which will enable them to develop engineering solutions.			Assessment requirements/evidence requirements: Portfolio of evidence		
Assessment methodology: Work based evaluation					
Learning outcomes:	Assessment criteria:	Suggested Development Activity:	UK-SPEC mapping:	Evidence type:	Portfolio reference and date:
1 Be able to contribute to the solution of civil engineering problems	1.1 Identify scientific, technical or engineering problems	Apply Engineering Principles	B1		
	1.2 Analyse problems using appropriate scientific, technical or engineering principles	Link the knowledge of core engineering principles to codes, standards and specifications within your area of operations	B1		
	1.3 Develop solutions to civil engineering problems	Consider: Health, Safety, and Welfare; buildability issues; the relationship between, quality, costs and time; the impact of sustainability	B1		
	1.4 Optimise solutions to civil engineering problems	Link the analysis to relevant Codes, Standards and Specifications Look at alternative solutions to meet the requirements of the problem	B2		
	1.5 Finalise solutions to civil engineering problems	Produce drawings to show the solutions you have worked on.	B2		

Unit 3: Management and leadership in civil engineering

Unit title: Management and leadership in civil engineering			Unit code: CET 3		
Unit reference number: A/602/2219			Level: 3		
Credit value: 16			Guided learning hours: 48		
Unit summary: This unit allows the learner to demonstrate an appropriate level of management expertise in relation to civil engineering works.			Assessment requirements/evidence requirements: Portfolio of evidence		
Assessment methodology: Work based evaluation					
Learning outcomes:	Assessment criteria:	Suggested Development Activity:	UK-SPEC mapping:	Evidence type:	Portfolio reference and date:
1 Be able to manage activities within own field of responsibility	1.1 Manage own work schedule 1.2 Monitor tasks allocated to others 1.3 Contribute to quality processes 1.4 Contribute to the administration of projects	Work effectively without close supervision Lead by example Supervise the tasks allocated to you Monitor the work of others and record progress against the schedule Follow quality processes and procedures Work with programmes, plans, surveys and method statements in relation to the administration of a project.	C1 C2 B2 C2, C3		

Unit 4: Independent judgement and responsibility in civil engineering

Unit title: Independent judgement and responsibility in civil engineering			Unit code: CET 4		
Unit reference number: M/602/2220			Level: 3		
Credit value: 16			Guided learning hours: 48		
Unit summary: This unit allows the learner to demonstrate that they are able to apply independent judgement and exercise a level of responsibility appropriate to their position in the civil engineering team.			Assessment requirements/evidence requirements: Portfolio of evidence		
Assessment methodology: Work based evaluation					
Learning outcomes:	Assessment criteria:	Suggested Development Activity:	UK-SPEC mapping:	Evidence type:	Portfolio reference and date:
1 Be able to exercise independent judgement within own field of responsibility	1.1 Identify the limits of own knowledge and skills	Take responsibility for identifying those areas which are beyond your current engineering knowledge and skills Broaden your skills base using engineering knowledge	E4		
	1.2 Explain scope of own responsibility within an organisational context	Prepare a review of the organisation within which you are working and how your role fits into this context	D2		
	1.3 Explain scope of own responsibility within a statutory and legal context	Link your work with the legislative framework governing the sector where you work and identify relevant issues	B2, E2		
	1.4 Demonstrate how these responsibilities are exercised through decisions made	Link your experience and responsibilities and consider the judgement you make when taking decisions.	B2		

Unit 5: Commercial awareness in civil engineering

Unit title: Commercial awareness in civil engineering			Unit code: CET 5		
Unit reference number: A/602/2222			Level: 3		
Credit value: 8			Guided learning hours: 24		
Unit summary: This unit allows the learner to demonstrate that they have built an appropriate set of skills relating to commercial awareness and civil engineering.			Assessment requirements/evidence requirements: Portfolio of evidence		
Assessment methodology: Work based evaluation					
Learning outcomes:	Assessment criteria:	Suggested Development Activity:	UK-SPEC mapping:	Evidence type:	Portfolio reference and date:
1 Be able to contribute to commercial activities	1.1 Contribute to controlling project costs 1.2 Contribute to maintaining records for financial control	Assess the relationship between budget and cost on a project you are working on Maintain effective records in relation to contractual matters Participate in the process of evaluating contract instructions and variations.	B2 B2 B2		

Unit 6: Health, safety and welfare for civil engineers

Unit title: Health, safety and welfare for civil engineers			Unit code: CET 6		
Unit reference number: F/602/2223			Level: 3		
Credit value: 16			Guided learning hours: 48		
Unit summary: This unit allows the learner to demonstrate an appropriate level of knowledge in relation to their Health, Safety and Welfare responsibilities and rights.			Assessment requirements/evidence requirements: Portfolio of evidence		
Assessment methodology: Work based evaluation					
Learning outcomes:	Assessment criteria:	Suggested Development Activity:	UK-SPEC mapping:	Evidence type:	Portfolio reference and date:
1 Be able to manage and apply safe systems of work	1.1 Work within relevant health and safety legislation 1.2 Supervise the safe working of those under one's control 1.3 Manage health and safety hazards and risks within their control	Identify and take responsibility for your own Health, Safety and Welfare issues Implement and/or operate Health, Safety and Welfare systems Apply the Current Health, Safety and Welfare codes and legislation to the work situation Apply CDM Regulations, Risk assessments, Method statements Recommend improvements to Health, Safety and Welfare systems Have detailed knowledge of the hazards applicable to your field of work Be proactive with regards to Health, Safety and Welfare practice including the importance of Safety briefings.	E2 E2 E2		

Unit 7: Sustainable development in civil engineering

Unit title: Sustainable development in civil engineering			Unit code: CET 7		
Unit reference number: L/602/2225			Level: 3		
Credit value: 8			Guided learning hours: 24		
Unit summary: This unit allows the learner to demonstrate that they have built an appropriate set of skills in relation to the development of sustainability in civil engineering.			Assessment requirements/evidence requirements: Portfolio of evidence		
Assessment methodology: Work based evaluation					
Learning outcomes:	Assessment criteria:	Suggested Development Activity:	UK-SPEC mapping:	Evidence type:	Portfolio reference and date:
1 Be able to contribute to sustainable development	1.1 Comply with environmental legislation and best practice	Read the environmental legislation and best practice that impacts on your work	E3		
	1.2 Supervise the sustainable working of those under one's control	Implement sustainable solutions within your work	E3		
	1.3 Contribute to problem solving in environmental practice	Actively participate in the development and implementation of environmental matters on your projects.	E3		

Unit 8: Interpersonal skills and communication in civil engineering

Unit title: Interpersonal skills and communication in civil engineering			Unit code: CET 8		
Unit reference number: R/602/2226			Level: 3		
Credit value: 16			Guided learning hours: 48		
Unit summary: This unit allows the learner to demonstrate that they have built a set of technical skills that will allow them to effectively communicate with their peers in the civil engineering industry.			Assessment requirements/evidence requirements: Portfolio of evidence		
Assessment methodology: Work based evaluation					
Learning outcomes:	Assessment criteria:	Suggested Development Activity:	UK-SPEC mapping:	Evidence type:	Portfolio reference and date:
1 Be able to show effective communication and interpersonal skills	1.1 Communicate with others effectively	Communicate with others, on both technical and non-technical matters Gain experience of effective communication across a variety of media (oral, written and graphic communication). Practice discussing ideas and plans relating to Civil Engineering with your peers and colleagues	D1		
	1.2 Make appropriate use of IT systems	Utilise relevant IT systems to contribute to efficient working practices	D1		
	1.3 Demonstrate effective interpersonal skills when working with others	Consult with others and understand the working relationships that are required when working with others.	D2		

Unit 9: Professional commitment for civil engineers

Unit title: Professional commitment for civil engineers			Unit code: CET 9		
Unit reference number: D/602/2228			Level: 3		
Credit value: 17			Guided learning hours: 51		
Unit summary: This unit allows the learner to demonstrate that they have developed knowledge and skills in relation to the professional commitment standards of the civil engineering industry.			Assessment requirements/evidence requirements: Portfolio of evidence		
Assessment methodology: Work based evaluation					
Learning outcomes:	Assessment criteria:	Suggested Development Activity:	UK-SPEC mapping:	Evidence type:	Portfolio reference and date:
1 Be able to show professional commitment	1.1 Comply with a professional body's Code of Conduct	Read and understand the ICE Code of Conduct and its use. Demonstrate and discuss your own position on typical ethical challenges	E1		
	1.2 Produce own CPD plans and records	Record your own CPD in accordance with the requirements of the ICE as set out within ICE 3006A	E4		
	1.3 Assist others with their CPD plans and records	Offer relevant assistance to ensure the CPD of others is developed where necessary	E4		
	1.4 Support professional body activities	Support ICE activities through engagement with events, seminars, evening lectures etc	E4		
	1.5 Demonstrate a commitment to professional standards, recognising obligations to society and to the profession	Maintain professional standards in relation to your employer or society as well as the wider profession.	E5		

Further information

To get in touch with us visit our 'Contact us' pages:

- Edexcel, BTEC and Pearson Work Based Learning contact details: qualifications.pearson.com/en/support/contact-us.html
- books, software and online resources for UK schools and colleges: www.pearsonschoolsandfecolleges.co.uk

Key publications

- *Adjustments for candidates with disabilities and learning difficulties, Access and Arrangements and Reasonable Adjustments, General and Vocational qualifications* (Joint Council for Qualifications (JCQ))
- *Supplementary guidance for reasonable adjustments and special consideration in vocational internally assessed units* (Pearson)
- *General and Vocational qualifications, Suspected Malpractice in Examination and Assessments: Policies and Procedures* (JCQ)
- *Equality Policy* (Pearson)
- *Recognition of Prior Learning Policy and Process* (Pearson)
- *UK Information Manual* (Pearson)
- *Pearson Edexcel NVQs, SVQs and competence-based qualifications – Delivery Requirements and Quality Assurance Guidance* (Pearson)

All of these publications are available on our website: qualifications.pearson.com

Further information and publications on the delivery and quality assurance of NVQ/Competence-based qualifications are available at our website on the Delivering BTEC pages. Our publications catalogue lists all the material available to support our qualifications. To access the catalogue and order publications, please go to the resources page of our website.

How to obtain National Occupational Standards

ConstructionSkills
Bircham Newton
King's Lynn
Norfolk
PE31 6RH

Telephone: 01485 577577

www.cskills.org

How to contact the Institution of Civil Engineers

One Great George Street
Westminster
London SW1P 3AA

Telephone: 0207 665 2267/2014

www.ice.org.uk

Professional development and training

Pearson supports UK and international customers with training related to NVQ and BTEC qualifications. This support is available through a choice of training options offered in our published training directory or through customised training at your centre.

The support we offer focuses on a range of issues including:

- planning for the delivery of a new programme
- planning for assessment and grading
- developing effective assignments
- building your team and teamwork skills
- developing student-centred learning and teaching approaches
- building functional skills into your programme
- building effective and efficient quality assurance systems.

The national programme of training we offer can be viewed on our website (qualifications.pearson.com). You can request customised training through the website or by contacting one of our advisers in the Training from Pearson team via Customer Services to discuss your training needs.

The training we provide:

- is active
- is designed to be supportive and thought provoking
- builds on best practice
- may be suitable for those seeking evidence for their continuing professional development.

The Institution of Civil Engineers will offer training and advice on using this qualification as part of an apprenticeship framework, the operation of ICE Training Agreements and using the qualification to prepare for professional review. For initial enquiries, contact the ICE Education and Learning Team on 0207 665 2267.

Annexe A: Quality assurance

Key principles of quality assurance

- A centre delivering Pearson qualifications must be a Pearson recognised centre and must have approval for qualifications that it is offering.
- The centre agrees as part of gaining recognition to abide by specific terms and conditions around the effective delivery and quality assurance of assessment; the centre must abide by these conditions throughout the period of delivery.
- Pearson makes available to approved centres a range of materials and opportunities to exemplify the processes required for effective assessment and provide examples of effective standards. Approved centres must use the guidance on assessment to ensure that staff who are delivering Pearson qualifications are applying consistent standards.
- An approved centre must follow agreed protocols for: standardisation of assessors; planning, monitoring and recording of assessment processes; internal verification and recording of internal verification processes; and for dealing with special circumstances, appeals and malpractice.

Quality assurance processes

The approach to quality assured assessment is made through a partnership between a recognised centre and Pearson. Pearson is committed to ensuring that it follows best practice and employs appropriate technology to support quality assurance process where practicable. Therefore, the specific arrangements for working with centres will vary. Pearson seeks to ensure that the quality assurance processes that it uses do not place undue bureaucratic processes on centres and works to support centres in providing robust quality assurance processes.

The learning outcomes and assessment criteria in each unit within this specification set out the standard to be achieved by each learner in order to gain each qualification. Pearson operates a quality assurance process, which is designed to ensure that these standards are maintained by all assessors and verifiers.

For the purposes of quality assurance all individual qualifications and units are considered as a whole. Centres offering these qualifications must be committed to ensuring the quality of the units and qualifications they offer, through effective standardisation of assessors and internal verification of assessor decisions. Centre quality assurance and assessment processes are monitored by Pearson.

The Pearson quality assurance processes will involve:

- gaining centre recognition and qualification approval if a centre is not currently approved to offer Pearson qualifications
- annual visits to centres by Pearson for quality review and development of overarching processes and quality standards. Quality review and development visits will be conducted by a Pearson quality development reviewer
- annual visits by occupationally competent and qualified Pearson Standards Verifiers for sampling of internal verification and assessor decisions for the occupational sector
- the provision of support, advice and guidance towards the achievement of National Occupational Standards.

Centres are required to declare their commitment to ensuring quality and appropriate opportunities for learners that lead to valid and accurate assessment outcomes. In addition, centres will commit to undertaking defined training and online standardisation activities.

In relation to application for professional membership as an Engineering Technician (EngTech), Centres are strongly advised to appoint a professionally qualified engineer as an assessor/verifier, and to contact the ICE Regional Support Team to arrange for professional review. Link: <https://www.ice.org.uk/near-you?region=uk>

Annexe B: Centre certification and registration

Pearson Standards Verifiers will provide support, advice and guidance to centres to achieve Direct Claims Status (DCS). Pearson will maintain the integrity of Pearson qualifications through ensuring that the awarding of these qualifications is secure. Where there are quality issues identified in the delivery of programmes, Pearson will exercise the right to:

- direct centres to take actions
- limit or suspend certification
- suspend registration.

The approach of Pearson in such circumstances is to work with the centre to overcome the problems identified. If additional training is required, Pearson will aim to secure the appropriate expertise to provide this.

What are the access arrangements and special considerations for the qualification in this specification?

Centres are required to recruit learners to Pearson qualifications with integrity.

Appropriate steps should be taken to assess each applicant's potential and a professional judgement made about their ability to successfully complete the programme of study and achieve the qualification. This assessment will need to take account of the support available to the learner within the centre during their programme of study and any specific support that might be necessary to allow the learner to access the assessment for the qualification. Centres should consult Pearson's policy on learners with particular requirements.

Pearson's policy on access arrangements and special considerations for Pearson qualifications aims to enhance access to the qualifications for learners with disabilities and other difficulties (as defined by the 2010 Equality Act) without compromising the assessment of skills, knowledge, understanding or competence. Please refer to *Access Arrangements and Special Considerations for BTEC and Pearson NVQ Qualifications* for further details at qualifications.pearson.com.

Annexe C: Assessment

The work setting:

The assessment requirements for this qualification have been developed by the Institution of Civil Engineers in partnership with employers, training providers, the sector skills council, the awarding organisation and the regulatory authorities.

The qualification may be part of a work-based apprenticeship scheme or ICE training scheme. As such, the company providing the work setting for the apprenticeship or training programme would benefit from having an ICE Approved Training Scheme:

<https://www.ice.org.uk/my-ice/membership-documents/ice-training-scheme>

The approval of an ICE Approved Training Scheme ensures that the working environment enables the learner to achieve the qualification substantively in a real work context.

Employing Companies should contact ICE on 0207 665 2014 if they do not have an ICE Approved Training Scheme.

Educational Institutions providing day/evening/block release will normally have been approved to offer Pearson's BTEC Construction and Built Environment qualifications.

Criteria for defining realistic working environments:

A realistic working environment or simulation may be used when learners are unable to obtain direct evidence from the workplace. This may be because:

- some safety issues may not arise in the course of the training period
- some activities may be hazardous
- certain work situations may occur infrequently or not at all within a particular organisation.

Realistic working environments should follow the ConstructionSkills guidelines in the National Occupational Standards and may include the following:

- equipment such as tools, instruments, materials and ICT including software; types of contingencies; standards and quality specifications; timescales; physical conditions; quantity of work; relationships with people; information and data.

The use of simulation and/or a realistic working environment should be agreed between the assessor and the learner and be agreed with the internal verifier.

Roles and occupational competence of assessors, expert witnesses, mentors, internal verifiers and standards verifiers

- Assessors and verifiers will either have or be working towards the relevant Assessor and Quality Assurance qualifications.

- Assessors and verifiers should have recent and relevant industrial experience and up-to- date knowledge at or above Level 3. This may be demonstrated through:
 - cv and references
 - possession of a relevant qualification
 - membership of a relevant professional institution
 - CPD records
 - Companies will appoint mentors and expert witnesses in the work place setting. Where an ICE Approved Training Schemes in place, these are likely to be Supervising Civil Engineers or Delegated Engineers.

Annexe D: Achieving EngTech TMICE status

This qualification prepares learners for Technician Membership of the Institution of Civil Engineers and for professional registration as an Engineering Technician (EngTech) with the Engineering Council.

If learners are registered for an ICE training scheme with their employers, this will run in parallel with the qualification. Details can be found here:

<https://www.ice.org.uk/my-ice/my-membership/training-scheme>

As part of the ICE training scheme learners will be allocated a mentor who will be a Supervising Civil Engineer (SCE), registered with the Institution of Civil Engineers (ICE), or a Delegated Engineer (DE), depending on the company's scheme. The SCE and/or DE will be aware of the processes and procedures that would be required in relation to the running of a traditional ICE training scheme. For companies without a training scheme, contact the ICE's Regional Support Team for advice
<https://www.ice.org.uk/near-you?region=uk>

The trainee will gather a portfolio of evidence to match the learning outcomes and assessment criteria. The portfolio should reference supporting documentation for the trainee's attainment. It should cover what the trainee has done and what has been learned.

Where a company uses development reports as part of its training scheme, the report might focus on a particular topic. They also provide valuable practice in writing about achievements and technical matters and as such are among the professional competences and behaviours expected of a civil engineer. These may be cross-referenced to the portfolio.

A regular report can also be used by the trainee in planning for the short or medium-term future in conjunction with the mentor, SCE or DE. It is part of the dialogue through which what the trainee wants to do, and what help is needed is explored. If the trainee is part of an ICE training scheme there will also be an annual appraisal meeting with the Supervising Civil Engineer (SCE).

The portfolio record tables (see examples above pp 11-19) should use the key provided in the section Guidance for Tutors (p 10 and below) to indicate the type of evidence that has been gathered for each unit, using the following headers as an indicator for the type of evidence claimed.

O	Observation
Q&A	Questions and answers
P	Learner products
RA	Reflective accounts/ personal statements
S	Simulation
PD	Professional discussion
A	Assignment, project/case studies
WT	Witness testimony
EPW	Expert witness evidence
RPL	Recognition of Prior Learning

The mentor, Delegated Engineer or upervising Civil Engineer undertakes the initial discussion with the trainee to ensure that the evidence claimed matches with the experience of the trainee and that the statements are appropriate and relevant. The Assessor is then be responsible for signing off the Units, based on the evidence of the trainee provided within the portfolio, and/or cross-referenced to the relevant Development Report, plus any further discussions, further evidence or witness support from the SCE/DE.

On completion, the employer should put the trainee forward for professional review Guidance can be found in the Technician Professional Review Guidance <https://www.ice.org.uk/my-ice/membership-documents/technician-professional-review-guidance>

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