



CIVIL ENGINEERING TECHNICIAN APPRENTICESHIP STANDARD LEVEL 3

Attract great talent, upskill your teams
and plan for your future.

Suitable for both new and existing employees.



PROGRAMME OVERVIEW

DURATION

The duration of this apprenticeship is typically 27 months (depending on experience)

STUDY MODE

- Online with tutor led sessions.
- Blended learning with online and face-to-face sessions and support (at the employers premises)
- There is an End-Point-Assessment for this apprenticeship. This is when the learner will demonstrate they have learnt the required knowledge, skills and behaviours.

QUALIFICATIONS TO BE AWARDED

- Level 3 Civil Engineering Technician Apprenticeship
- Functional Skills English and maths (if required)

PROGRESSION OPPORTUNITIES

On completion of the apprenticeship the apprentice will have satisfied the requirements for registration as an Engineering Technician by the relevant professional engineering institution in accordance with the requirements of the Engineering Council as the registration body.

ON-PROGRAMME LEARNING	EPA	
<p>OCCUPATION DUTIES</p> <ul style="list-style-type: none">• Duty 1: Contribute to civil engineering solutions by preparing, producing and modifying engineering diagrams, drawings or models, documents and engineering specifications, to industry codes of practice, regulations, standards, and procedures.• Duty 2: Assist in the development of civil engineering solutions, by collecting and interpreting technical information and data, carrying out calculations and analysing the outputs.• Duty 3: Utilise digital technologies and techniques, such as Computer Aided Design (CAD) or Building Information Modelling (BIM), to prepare, produce and present civil engineering designs and visualisations in accordance with approved design procedures and systems.• Duty 4: Ensure compliance with health, safety & welfare requirements, apply safe systems of work, such as Common Safety Methods (CSM), and identify hazards and mitigate risks in their own work.• Duty 5: Comply with relevant legislation, regulations, policies, strategies, and technical guidance, such as such as Construction Design and Management (CDM) or Design Manual for Roads and Bridges (DMRB), ensuring they are interpreted correctly and communicated appropriately.• Duty 6: Comply with environmental policies and practice sustainable principles, supporting the civil engineering projects they work on to assist in the achievement of United Nations Sustainable Development Goals and net-zero carbon emissions.• Duty 7: Use the quality management and assurance systems available to plan, manage, monitor and contribute to the delivery and implementation of civil engineering projects to specification, budget and agreed targets, respecting the need for the security of data and information.• Duty 8: Communicate and liaise effectively with own project team, customers, internal or external stakeholders.• Duty 9: Work reliably and effectively independently and as a member of a team, taking responsibility for their own work.• Duty 10: Ensure compliance with equality, diversity & inclusion (EDI) and ethical standards.• Duty 11: Maintain own learning and skills development by carrying out continuing professional development in line with professional codes of conduct and/or industry specifications and obligations.	EPA GATEWAY	END-POINT-ASSESSMENT
0-24 MONTHS		

KNOWLEDGE OVERVIEW

A CIVIL ENGINEERING TECHNICIAN WILL BE ABLE TO UNDERSTAND AND HAVE KNOWLEDGE OF:

K1

- Appropriate engineering principles, underpinned by appropriate mathematical, scientific and technical knowledge and understanding, relating to civil engineering and the construction process.

K2

- Appropriate civil engineering techniques and methods used to design, build and maintain infrastructure and buildings, the standards, contracts and specifications used, and their impact on the construction process.

K3

- Key principles, techniques and methods of data and technical information collection, analysis and evaluation used in delivering civil engineering models, designs, and technical solutions.

K4

- Technical drawings, modelling and designs, using computer-based software packages, such as Computer Aided Design (CAD) or Building Information Modelling (BIM), and their use in the sector.

K5

- Statutory health, safety and welfare policies, procedures, and regulations, including risk management, in relation to civil engineering project delivery.

K6

- Industry policies, standards, regulations and codes of practice, such as Common Safety Method (CSM), Construction Design and Management (CDM) or Design Manual for Roads and Bridges (DMRB), that must be adhered to in the civil engineering environment.

K7

- Environmental policies and the principles of sustainable development, including those relating to the United Nations Sustainable Development Goals (SDG) and net-zero carbon emissions, and their impact on the civil engineering projects.

K8

- Understanding of equality, diversity and inclusion, and its impact on civil engineering solutions.

K9

- Project management, quality management and assurance systems and continuous improvement as applied to civil engineering.

K10

- Methods of communication and when to use them, including how to write technical reports and using appropriate engineering terminology and conventions.

K11

- Ethical principles as applied to civil engineering and the security of data and information.

K12

- The values and standards by which they maintain their personal, professional and technical knowledge and skills through initial professional development (IPD) and continuing professional development (CPD)

SKILLS OVERVIEW

A CIVIL ENGINEERING TECHNICIAN WILL BE ABLE TO DEMONSTRATE THE FOLLOWING SKILLS WITHIN THE CONTEXT OF THE ORGANISATION:

S1

- Apply appropriate civil engineering principles, techniques, and methods, including mathematical, scientific, and technical know-how, to civil engineering and the construction process.

S2

- Apply key principles, techniques and methods of data and technical information collection, analysis, and evaluation to support the delivery of civil engineering models, designs, and technical solutions.

S3

- Operate appropriate software packages for data gathering and analysis, such as Computer Aided Design (CAD) or Building Information Modelling (BIM), to create technical drawings, models and designs using relevant conventions and engineering terminology.

S4

- Apply statutory health, safety and welfare policies, procedures, and regulations in the civil engineering environment, using risk management processes, procedures, and documentation.

S5

- Support and contribute to the production or modification of civil engineering technical solutions in accordance with relevant industry standards, regulations, and procedures and codes of practice.

S6

- Apply environmental policies and sustainable principles in civil engineering projects, recognising the need to reduce carbon use, lower emissions and plan for wider sustainability.

S7

- Plan, carry out and manage own work in line with quality assurance, recognising the wider implications to customer needs, and within cost and resource limitations.

S8

- Consider equality, diversity and inclusion in the delivery of civil engineering projects.

S9

- Apply document control processes and procedures using the approved processes, maintaining quality compliance when creating or amending engineering documentation.

S10

- Communicate using appropriate methods for the audience, and incorporate relevant and appropriate terms, standards, and data.

S11

- Apply ethical principles to civil engineering projects, including the secure use of data and information.

S12

- Plan, undertake and review their own professional competence, regularly updating and reviewing their CPD to improve performance.

BEHAVIOURS OVERVIEW

A CIVIL ENGINEERING TECHNICIAN WILL BE ABLE TO DEMONSTRATE THE FOLLOWING BEHAVIOURS:

BEHAVIOURS

- B1: Comply with health, safety and welfare requirements, industry standards, statutory regulations, policies and codes of practice
- B2: Work independently, operating in a systematic, proactive, and transparent way, using resources effectively to complete tasks, knowing their limitations and when to ask for support or escalate
- B3: Applies a structured approach to problem solving with attention to detail, accuracy, and diligence
- B4: Is motivated when collaborating in teams, offering sensible challenge, reflects on and provides constructive feedback and contributes to discussions
- B5: Maintains professional and ethical working relationships with internal, external, and connected stakeholders
- B6: Takes responsibility for their own professional development, seeking opportunities to enhance their knowledge, skills, and experience

EPA GATEWAY

END-POINT-ASSESSMENT GATEWAY READINESS

The EPA will be triggered by the following events:

- the minimum time duration allocated to the Standard has been met;
- judgement of readiness to go beyond the gateway is the decision of the Employer based on completion of all on-programme requirements.
- the apprentice believes they are ready to submit, to the EPAO, a selection of exemplary evidence, in their portfolio, which fulfil the knowledge, skills and behavioural practice in relation to the Standard.
- the employer to confirm that the portfolio is ready to submit to the EPAO
- the EPAO confirms that the portfolio has been received
- successful completion of English and maths: a minimum Level 2 qualification in English and mathematics are required for this apprenticeship and must be achieved prior to the End-point Assessment (EPA), and confirmed by the employer.
- apprentices must have achieved as a minimum the qualification mandated in the civil engineering technician occupational standard:
 - Pearson BTEC Level 3 Diploma in Civil Engineering

END-POINT-ASSESSMENT

END-POINT-ASSESSMENT METHODS

The end-point-assessment consists of two assessment methods:

1. Technical project report and presentation with questioning
2. Professional Discussion supported by portfolio of evidence

REPORT & PRESENTATION

The technical project report must be 2,500 words +/-10%.

The presentation with questioning will last for 30 minutes

Weighting: all assessment methods are weighted equally

PROFESSIONAL DISCUSSION

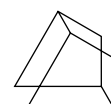
The PD session will last for 40 minutes.

Weighting: all assessment methods are weighted equally

GRADING & DETERMINATION

The gradings are Fail, Pass or Distinction, in each of the two methodologies.

The overall EPA grading will be determined by the grades achieved for both assessment methods.



TECHNICAL PROJECT REPORT

Apprentices will undertake a technical project after they have passed the gateway, which would typically take up to 30 hours over a period of 6 working weeks and produce a report that appropriately covers all the KSBs assigned to this method of assessment.

A technical project brief will be designed by the EPAO and agreed in consultation with the employer, to ensure that the apprentice's work will meet the real civil engineering challenges that readily occur in business. The technical project should be relevant to the apprentice's role and must allow the relevant KSBs to be assessed for the EPA. The EPAO will ensure it meets the requirements of the EPA, including suitable coverage of the KSBs assigned to this assessment method. The EPAO must refer to the grading descriptors to ensure that technical projects are pitched appropriately.

The EPAO will issue the technical project brief to the apprentice at gateway. The technical project brief will reflect a real work-based civil engineering challenge in a subject area, providing a focus on an area such as:

- bridges
- buildings and structures
- dams and reservoirs
- energy services
- environmental planning and engineering
- geology, geotechnical and ground engineering, and tunnelling
- offshore
- railway systems and infrastructure
- regeneration and development
- research
- river, coast, marine, docks and harbours
- transportation, traffic and highways
- water supply / sewage treatment / drainage and pipelines

This is not an exhaustive list, other projects that provide coverage of the KSBs are allowed.

The purpose of the technical project is to set the apprentice a project which will assess their ability to integrate the range of knowledge, skills and behaviours assigned to this assessment method, which they have acquired during their apprenticeship.

The technical project brief, designed and issued by the EPAO, will be typically 500 words in length. The EPAO will design and issue guidance with the technical project brief, stating that the completion of the technical project is designed to take up to 30 hours for the apprentice to complete over a maximum period of 6 working weeks.

PRESENTATION WITH QUESTIONING

Apprentices will prepare and deliver a presentation based on the technical project report that appropriately covers the KSBs assigned to assessment method 1.

The presentation will cover the following as a minimum:

- a summary of the technical project report
- explanation of how and why specific techniques and criteria have been selected and applied
- conclusions

The independent assessors will then draw out any further information using questions. EPAOs must develop a question bank of sufficient size to prevent predictability and review them regularly (at least once a year) to ensure the questions they contain are fit for purpose.

The presentation will be created and submitted alongside the technical project report, and will be presented to the independent assessors, either face-to-face or via online video conferencing. If using an online platform, EPAOs must ensure appropriate measures are in place to prevent misrepresentation and ensure the apprentice is not being aided in some way.

The presentation must be submitted at the same time as the technical project report to allow the independent assessors a maximum of 3 working weeks to review it, saving independent assessor time in reviewing multiple documents and will allow the generation and collation of questions from both the report and presentation.

PROFESSIONAL DISCUSSION

A professional discussion is a two-way discussion which involves both the independent assessors and the apprentice actively listening and participating in a formal conversation. It gives the apprentice the opportunity to make detailed and proactive contributions to confirm their competency across the KSBs mapped to this method.

The rationale for this assessment method is:

Civil engineering technician apprentices are expected to be able to discuss their portfolio, where evidence and results of work-based tasks or projects carried out as part of their apprenticeship are collated, in a formal setting where they will be able to explain in detail their work.

The professional discussion will be underpinned by the portfolio submitted at gateway. The independent assessors must have a minimum of 3 working weeks from the date of submission to review the portfolio in advance of the professional discussion in order to prepare appropriate questions.

GRADING AND DETERMINATION

The final judgement about whether the apprentice has passed, and with what grade, will be made by the assessment organisation taking into account recommendations by the independent assessor.

All assessment methods are weighted equally in their contribution to the overall EPA grade. Performance in the EPA will determine the apprenticeship grade of fail, pass or distinction.

In order to gain an overall EPA 'pass', apprentices must achieve a pass in both assessment methods. In order to achieve an overall EPA 'distinction', apprentices must achieve a distinction in both assessment methods.

COSTS

This programme costs £14,000 and is covered through a companies Apprenticeship Levy.

If the employer does not pay into the levy they will only pay £700 if they have more than 50 employees or if the apprentice is aged 19+. Employers with less than 50 employees receive full funding if the apprentice is aged 16-18.



MORE INFORMATION

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