



# DIGITAL 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 Digital Engineering Technician Apprenticeship
- Level 3 BTEC Diploma in Construction and the Built Environment (Technical Certificate)
- Functional Skills English and maths (if required)

## PROGRESSION OPPORTUNITIES

This Apprenticeship will include the knowledge, skills and behaviours required to achieve Technician/Associate status through a number of professional institutions. The professional review process is included in the assessment process for this Apprenticeship.

| ON-PROGRAMME LEARNING                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                    | EPA                |                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------------------|
| <b>KNOWLEDGE &amp; SKILLS</b> <ul style="list-style-type: none"><li>• Health and safety</li><li>• Sustainability</li><li>• Engineering</li><li>• Commercial &amp; financial</li><li>• Design</li><li>• Technology &amp; innovation</li><li>• Planning</li><li>• Quality</li><li>• Construction industry and sectors</li><li>• Customer care</li><li>• Maintain and operate</li><li>• Knowledge sharing</li></ul> | <b>BEHAVIOURS</b> <ul style="list-style-type: none"><li>• Professional judgement</li><li>• Commitment to code of ethics</li><li>• Personal and continuing professional development</li><li>• Commitment to equality and diversity</li><li>• Effective communication</li><li>• Work in teams</li><li>• Innovation and commitment</li><li>• Collaboration</li><li>• Personal effectiveness</li></ul> | <b>EPA GATEWAY</b> | <b>END-POINT-ASSESSMENT</b> |
| 0-24 MONTHS                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                    | 3 MONTHS           |                             |

# KNOWLEDGE OVERVIEW

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

## HEALTH AND SAFETY

- Aware of Health and Safety (H&S) industry regulations and moral, legal and financial implications of poor H&S performance. Know how to identify basic H&S outputs digitally.

## SUSTAINABILITY

- Understand the sustainability issues in projects across economic, social, legal and environmental aspects.

## ENGINEERING

- Know how engineering principles, codes and standards work in the built environment and the purpose of them. Understand various management principles and the project management lifecycle – specifications, methods and materials

## COMMERCIAL & FINANCIAL

- Aware of principles of the commercial procedures and reporting on all stages of construction project and an appreciation of commercial risk. Aware of financial and legal obligations and constraints for all stakeholders in construction projects.
- Understanding of quantification and costing within a digital environment.

## DESIGN

- Understand how proposals for design briefs, recommendations, programmes and detailed designs are prepared. Aware of the purpose of the digital environment and its role in design management.
- Understanding of different disciplines and their role in coordination of design

## TECHNOLOGY & INNOVATION

- Aware of the appropriate application of technology and the human to technology interfaces. Understanding the impact of sensory networks and the internet of things.

## PLANNING

- Understand the importance of project planning and resourcing and be able to analyse different digital engineering (DE) techniques, such as simulation of construction logistics and progress.

## QUALITY

- Understand how to identify the level of quality required delivering a built asset throughout the lifecycle.

## CONSTRUCTION INDUSTRY AND SECTORS

- Aware of the structure of the construction industry and its respective sectors. Understanding of the institutions and how the construction industry serves the economy as a whole.

## CUSTOMER CARE

- Awareness of DE objectives set by Clients and Employers.

## MAINTAIN AND OPERATE

- Aware of the information interdependencies of delivering information throughout a product / asset lifecycle. Understanding the purpose of information standards and regulation.

## KNOWLEDGE SHARING

- Awareness of social networking and appropriate sources of information / knowledge sharing. Understanding basic research techniques to ensure integrity of knowledge discovery.

# SKILLS OVERVIEW

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

## HEALTH AND SAFETY

- Able to identify risk activities and encourage all employees to demonstrate safety-conscious behaviours. Able to extract reports and images for tool-box talks and site- inductions using models and simulations.

## SUSTAINABILITY

- Assess, identify and record the environmental impact of project. Using models to demonstrate the reduction of waste to stakeholders.

## ENGINEERING

- Assist in applying engineering principles by using established and emerging engineering technologies.

## COMMERCIAL & FINANCIAL

- Prepare simple commercial schedules and reports demonstrating digital workflows.

## DESIGN

- Prepare initial design briefs, recommendations, programmes and detailed designs via a digital workflow considering design risks and responsibilities

## TECHNOLOGY & INNOVATION

- Assist in the implementation of innovation, contributing to case studies that demonstrate value. Good general IT skills and their application

## PLANNING

- Create simple construction simulations and logistic planning using a digital workflow.

## QUALITY

- Assess and report on quality standards of the projects via the digital environment.

## CONSTRUCTION INDUSTRY AND SECTORS

- To identify where the current role ties in to the construction industry. Articulating the respective position in the construction sector and highlighting how it integrates with other sectors/ disciplines

## CUSTOMER CARE

- Support the development of stakeholder engagement and carry out a stakeholder presentation, demonstrating the appropriate presentation skills.

## MAINTAIN AND OPERATE

- Demonstrate the ability to move information from project delivery into commissioning and operation through involvement in the handover of digital assets.

# BEHAVIOURS OVERVIEW

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

## BEHAVIOURS

### Professional Judgement

- Be able to work within own level of competence and know when to seek advice from others and work on own initiative.

### Commitment to code of ethics

- Work within rules and regulations of professional competence and conduct. Gain the trust of both team members and the management team.

### Personal and Continuing Professional Development

- Identify own development needs and acts to meet those needs. Use own knowledge and expertise to help others when requested. Understands role in the team, constantly seek opportunities to improve own work and maximize efficiency.

### Commitment to Equality and Diversity

- Understand the importance of equality and diversity and demonstrate these attributes so as to meet the requirements of fairness at work.

### Effective Communication

- Contribute to effective meetings and present information in a variety of ways including oral and written.
- Adaptable with the confidence to facilitate meetings with stakeholders.

### Work in Teams

- Work with others and demonstrating collaborative behaviours.

### Innovation and commitment

- Focus on areas for process improvement and learn from innovative solutions. Challenge current practice and be open minded about how to improve and implement a new way of working.

### Collaboration

- Understand the existence of team dynamics and application of personal strengths and weaknesses in group situations. Awareness of collaborative frameworks and contract / organisational level of collaboration.

### Personal Effectiveness

- Understand personal strengths and weaknesses and show development of personal effectiveness.

## 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 is for this apprenticeship and a Level 3 BTEC Diploma in Construction and the Built Environment Design must be achieved prior to the End-point Assessment (EPA), and confirmed by the employer.

## END-POINT-ASSESSMENT

### END-POINT-ASSESSMENT METHODS

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

1. Synoptic Project
2. Interview

## SYNOPTIC PROJECT

This extended task will simulate aspects of the Digital Engineering Technician role with scenarios and problems that require input and action from the candidate. The synoptic project will assess the candidate in context, testing application of knowledge and understanding. This will create an opportunity to observe the practical skills of the candidate in real-time.

The synoptic project is based on real life project scenarios that the candidate is likely to be exposed to over the lifespan of a construction project. It will test the application of a selection of the knowledge, skills and behaviours defined in the Digital Engineering Apprenticeship Standard. The project will require candidates to work within a BIM environment to solve routine problems, providing an opportunity to demonstrate the core skills and related knowledge, and behaviours required by a BIM related job role.

The synoptic project will take place in an observed, controlled environment and will test the candidate's ability to work within a BIM environment and demonstrate:

- The application of knowledge and skills to meet the project outcomes, including demonstrating an understanding of current BIM practices (including PAS1192-2:2013)
- Working knowledge of BIM tools
- Practical problem solving within a BIM environment
- Ability to review and interpret technical information in the form of an Employers Information Requirements (EIR) & BIM Execution Plan (BEP)
- Ability to identify inaccuracies or discrepancies in the technical information received
- Ability to validate information at key points during the BIM workflow
- An understanding of the enablers to collaborative team working
- An understanding of how BIM supports the efficient production of accurate and reliable information that builds over the lifespan of a project
- The application of the relevant behaviours

## INTERVIEW

The interview is the final EPA stage that will consolidate the results of each stage of the EPA and form an overall impression of the level of competence demonstrated by the candidate. The assessor will consider the range of evidence provided by the candidate in response to interview questions as well as from the EPA Portfolio, and Synoptic Project. The focus will be to probe for further detail and evidence of understanding against a range of criteria based on the competence defined by the Digital Engineering Apprenticeship Standard.



This will be a competence based interview with structured questions to determine the candidate's level of competence at the end of their apprenticeship. It can take place at training provider or employer premises, appropriate assessment conditions will be set by the Independent Assessment Organisation. The interview will take three and a half hours in order to ensure sufficient time is attributed to cover the evidence provided and final deliberation. The assessor will receive a pack prior to the interview that will consist of:

- Candidate EPA Portfolio
- Submitted Synoptic Project
- Assessor notes and suggested areas for further questioning (Synoptic Project) Structured Interview questions and guidance
- Assessment criteria

The Independent Assessment Organisation will be responsible for setting out the assessment criteria and structured questions.

## COSTS

This programme costs £21,000 and is covered through a companies Apprenticeship Levy.

If an employer does not pay into the levy they will only pay £1,050 if they have more than 50 employees or if the apprentice is aged 19+. Employers with less than 50 staff receive full funding if the apprentice is aged 16-18.





# MORE INFORMATION

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