T-LEVELS | IfATE Institute for Apprenticeships and Technical Education

T Level Technical Qualification in Maintenance, Installation and Repair for Engineering and Manufacturing

8730-12 Core Report (Autumn 2024)

Version 1.0

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Foreword

Autumn 2024 Results

The Technical Qualification is made up of two components (the Core and the Occupational Specialism), both of which need to be successfully achieved to attain the T Level Technical Qualification in Engineering and Manufacturing. This takes into account the best result for a specific component from the summer and autumn series. This document covers the Core component only.

We discussed the approach to standard setting/maintaining with Ofqual and the other awarding organisations before awarding this year. We have agreed to take account of the newness of qualifications in how we award this year to recognise that students and teachers are less familiar with the assessments, whilst also recognising the standards required for these qualifications.

Introduction

This document has been prepared to be used as a feedback tool for Providers in order to support and enhance teaching and preparation for assessment. It is advised that this document is referred to when planning delivery and when preparing candidates for the T Level Technical Qualification (TQ) in Engineering and Manufacturing **Core** assessments.

This report provides general commentary on candidate performance in both the examination papers and Employer-Set Project (ESP). It highlights common themes in relation to the technical aspects explored within the assessment, giving areas of strengths and weakness demonstrated by the cohort of candidates who sat assessments in the Autumn 2024 assessment series.

The grade boundaries (and notional boundaries where appropriate) that were used to determine candidates' final Autumn 2024 results are also provided.

More information regarding T Levels TQ grading, awarding, UMS and rules for retakes can be found in the T Levels Technical Qualifications Grading Guide available on the City & Guilds T Levels Resources and Support Hub.

8730-031 Paper 1

This exam paper covers the following elements of the Engineering & Manufacturing core content:

- Essential mathematics for engineering and manufacturing
- Essential science for engineering and manufacturing
- Materials and their properties
- Mechanical principles
- Electrical and electronic principles
- Mechatronics

This exam paper allowed for candidates to demonstrate a broad range of subject knowledge within the Engineering and Manufacturing core element.

The exam is split into **two** sections. Below details the types of questions and marks available for each section.

Section A is made up of **67** marks and includes **19** short answer questions.
Section B is made up of **33** marks and includes **3** extended response questions.

The exam is designed to provide sufficient sampling across the content and consists of a mixture of short answer questions (SAQs), some of which are structured, and extended response questions (ERQs). The exam assesses across assessment objectives (AOs) to allow for the appropriate assessment and differentiation of candidates to support the reliable setting of boundaries. The assessment objectives represent the following:

- **AO1 a** Demonstrate knowledge
- **AO1 b** Demonstrate understanding
- **AO2** Apply knowledge and understanding to different situations and context
- **AO3** Analyse and evaluate information and issues

This was the fourth series of this examination being sat. The paper is common to the three pathways of Engineering & Manufacturing; Design & Development (D&D), Maintenance, Installation and Repair (MIR) and Engineering, Manufacturing, Processing and Control (EMPC).

The examination paper is designed so that it gradually increases in challenge. Questions were ramped in terms of difficulty throughout section A starting with AO1a through to AO2, which allowed for the level of demand to be increased steadily throughout the paper. The extended response questions (ERQ) in section B were scenario based and ramped with AO2 and AO3 questions.

Areas of strength include:

- recalling the function of a thermistor (Q2). The majority of candidates demonstrated good recall of knowledge and scored full marks.
- identifying and recalling the function of a micrometer (Q3a). This saw a spread of marks with the majority of candidates scoring 1 or 2 marks out of 3 marks.
- recalling the definition of kinetic energy (Q5a). The majority of candidates demonstrated good recall of knowledge and scored full marks.

- explaining the purpose of microcontrollers and providing examples of where they are used (Q9). This saw a spread of marks across the mark range (up to 4 marks).
- determining the temperature of the drill after it is in use for a certain amount of time (Q17a), as well as calculating the maximum length of time the drill can be used for before it reaches a certain temperature (Q17b). This assessed candidates understanding of determining numbers in a sequence and saw the majority of candidates achieving full marks in this question.
- analysing data and calculating probabilities in an engineering context (Q18). Candidates performed well on part a) and b) of this question, with the majority of candidates achieving full marks, and on part c) almost half of the cohort achieved full marks.
- explaining the advantages of using tensile testing in relation to a scenario provided (Q19). This was an unconstrained question at the end of section A, and demonstrated a spread of marks, with candidates accessing all marks available (maximum of 6 marks).

Overall, candidates tended to perform better on questions requiring a written response rather than solutions requiring mathematical methods.

Areas of weakness include:

- recalling the measurement principles of uncertainty (Q3bii) and resolution (Q3biii). Candidates struggled with this recall of knowledge question, with many candidates providing incorrect descriptions.
- recalling what a diode is used for and providing an application (Q4). Here, candidates struggled to correctly recall the purpose of a diode.
- converting a hexadecimal number to decimal form (Q6). Unfortunately, a frequent point of confusion was interpreting "A" as 10. Few candidates arrived at the correct answer. Common errors included incorrect application of powers of 16.
- explaining the differences between magnetic field strength and magnetic flux density (Q8). This proved to be a challenging question, with only a few candidates earning full marks. Many had difficulty distinguishing between magnetic field strength and magnetic flux density or failed to provide adequate explanations.
- calculating the common velocity utilising the information provided within the scenario (Q10). The question was based on the principle of conservation of momentum. Some candidates understood the concept of the question but struggled with the fact that, in this case, one of the velocities was negative.
- understanding of cartesian coordinates and polar coordinates and the conversion of these (Q11). More than half the cohort achieved no marks with this question (Q11a, 11b). Candidates seemed to perform slightly better when converting polar coordinates to cartesian.
- demonstrating knowledge and understanding of differentiation (Q16) which required candidates to calculate the maximum area of a rectangle. Unfortunately, most candidates struggled to correctly use differentiation to answer the question.

The understanding of mathematics and scientific principles was noticeably poor, and candidates' overall responses were not as expected for Level 3. This was also noticed in the summer series. With some written responses candidate's responses often lacked the detail to demonstrate they had the knowledge required to achieve the available marks. Responses

were often generic and sometimes misunderstood. For example, in Q19, some candidates understood this question as the use of tensile tests for the design/testing of components of final products rather than testing the material prior to manufacturing. Similarly, in Q8, flux density and field strength definitions were interchanged or incorrect.

Responses to extended response questions (ERQs)

The majority of candidates attempted the ERQ's within Section B, with the high achieving candidates responding with more depth and detail in their responses, in comparison to the low achieving candidates. The ERQs saw most of the cohort placed in bands 1 and 2; however, they did show a spread of marks across the bands for all three questions. These questions had a higher discrimination value across the paper. In many responses, the candidates struggled to display their evaluation skills, with limited justifications or rationales for their choices.

It is noted that candidates' performance was weaker in Q20; it was observed that there was a general lack of understanding regarding electrolysis, with many candidates mistakenly linking it to galvanising or galvanic protection without grasping the process or its execution. Electroplating was often confused with painting, showing limited knowledge of surface finishing techniques. Most candidates scored in Band 1, with few reaching Band 2 or 3, highlighting a weak grasp of electrolysis in corrosion reduction. Recommendations for automotive parts were poorly addressed, and many candidates failed to apply electrolysis principles effectively in context.

Q21 assessed candidates' knowledge and understanding of material choice within the context of a drone body. The majority of responses were in mark band 2 (4-6 marks). Candidates mentioned a variety of materials, including some that were not relevant and/or a poor decision to use. Some candidates only discussed properties from the question stem; 'flight, resit impact and weather conditions'. Candidates that scored within the lower bands, lacked justification for their selection of material. A full range of marks was seen.

Q22 assessed candidates' knowledge and understanding of different power sources available in relation to the context of the question. The majority of responses were at the top of mark band 2 (5-6 marks) and the bottom of band 3 (7 marks). Candidates were able to demonstrate analysis of the different types of power sources and show evaluative skills with some reasoning as to which power source would be most suitable. Candidates that scored within the lower band, often did not relate their choices back to the context of the question and provided descriptive responses.

8730-032 Paper 2

This exam paper covers the following elements of the Engineering and Manufacturing core content:

- Working in the Engineering and Manufacturing sectors
- Engineering and manufacturing past, present, and future
- Engineering representations
- Engineering and manufacturing control systems
- Quality management
- Health and Safety principles and coverage
- Business, commercial, and financial awareness
- Professional responsibilities, attitudes, and behaviours
- Stock and asset management
- Continuous improvement
- Project and programme management

This exam paper allowed for candidates to demonstrate a broad range of subject knowledge within the Engineering and Manufacturing core element.

The exam is split into **two** sections. Below details the types of questions and marks available for each section.

Section A is made up of **67** marks and includes **13** short answer and medium answer questions.
Section B is made up of **33** marks and includes **3** extended response questions.

The exam is designed to provide sufficient sampling across the content and consists of a mixture of short answer questions (SAQs), some of which are structured, and extended response questions (ERQs). The exam assesses across assessment objectives (AOs) to allow for the appropriate assessment and differentiation of candidates to support the reliable setting of boundaries. The assessment objectives represent the following:

- **AO1 a** Demonstrate knowledge
- **AO1 b** Demonstrate understanding
- **AO2** Apply knowledge and understanding to different situations and context
- **AO3** Analyse and evaluate information and issues

This was the fourth series of this examination being sat. The paper is common to the three pathways of Engineering and Manufacturing; Design & Development (D&D), Maintenance, Installation and Repair (MIR) and Engineering, Manufacturing, Processing and Control (EMPC).

Questions were ramped in terms of difficulty throughout section A starting with AO1a through to AO2, this allowed for the level of demand to be increased steadily throughout the paper. The extended response questions ERQ in section B were scenario based and ramped with AO2 and AO3 questions.

Areas of strength include:

- defining the term ‘continuous professional development (Q1). Candidates performed well with this recall of knowledge question and saw a spread of marks for this question.
- understanding of the health and safety responsibilities of employees in an engineering workplace (Q2). Candidates performed well with this question, with the majority of candidates gaining full marks for this question.
- explaining the applications of CAD software in engineering (Q6). There was a spread of marks with the majority of candidates scoring 2 marks or more.
- understanding of how health and safety legislation affects the frequency of accidents (Q7). This was answered well by the majority of candidates.
- explaining the behaviours the engineer should display during a presentation (Q11c). The candidates’ responses provided a good spread of marks (up to a maximum of 4 marks).
- understanding of how a change to batch manufacturing would affect a company (Q11d). The majority of candidates were able to gain partial marks with this question achieving 2 marks out of 4. Some candidates did not expand upon their answers to gain full marks.

Areas of weakness include:

- recalling the term ‘comparator’ as used in control systems (Q3). Candidates struggled with this recall question, with two-thirds of the cohort scoring 0 marks.
- understanding of the advantages of manufacturing resource planning (Q8b). Half the candidates scored 0 marks. Manufacturing Resources Planning was misunderstood as some candidates focused on Materials Resources Planning.
- explain how cyber-physical systems could influence manufacturing (Q9). Unfortunately, candidates did not perform well, with some candidates struggling to secure one mark with lack of understanding and knowledge.
- explaining why commissioning activities are undertaken by engineers with specialist skills in maintenance (Q10). More than half the candidates got 0 marks as they were not able to articulate commissioning activities correctly.
- understanding environmental legislation that are relevant to a company’s activities (Q11a). Attempts were made by candidates to answer this question but candidates struggled to demonstrate application of knowledge and often incorrect legislation was evidenced.
- suggesting a type of input sensor on a control system that will measure the height of boxes moving along a conveyor belt (Q12a). More than half of the candidates got 0 marks. Many candidates did attempt this question, but examples of incorrect sensor-type were evidenced.
- explaining how the sensor identified in Q12a) would function (Q12b). Almost half of the cohort scored 0 marks. Most candidates did attempt this question, but many examples of incorrect sensor operation and function were evidenced for the scenario.
- explaining how actuators could be used in the scenario provided (Q12c). Less than half of the cohort scored 0 marks. Most candidates did attempt this question, but many examples of incorrect actuator operation were evidenced. Some candidates were able to describe an actuator but not how it functioned.

Within AO2 questions candidates frequently showed evidence of basic knowledge, but often did not expand their answers enough to show the context specific understanding required to access the higher marks.

Responses to extended response questions (ERQs)

The ERQ's in this paper, provided a mixture of responses from candidates. For the last two ERQ's, most candidates scored within mark band 2, however it is noted that ERQ 1 did not perform as well.

Q14 assessed candidates' knowledge and understanding of the roles and responsibilities of engineering bodies with regards to quality management in the manufacturing sector. Unfortunately, a notable proportion of candidates demonstrated a lack of understanding the role of engineering bodies, often focusing on product quality issues, rather than quality management.

Q15 required candidates to evaluate the benefits and limitations to the company of implementing a programme of SMED activities within their manufacturing operations. This question was answered well by some candidates, although a notable proportion of candidates only achieved marks within mark band 1 and 2. Some candidates provided generalised answers and did not link back to the context.

Q16 required candidates to discuss how the 6Rs of sustainability could influence the design and manufacture of plastic casing products. This synoptic extended response question was generally well answered by candidates, with a high proportion of candidates accessing marks in the middle mark bands. Some candidates gave generic responses that did not link back to the context; a small proportion gave responses that showed incomplete knowledge of the 6Rs.

8730 Sub-Component: Exam

Best practice and guidance to providers on potential areas for improving performance in assessment

It is recommended that providers utilise and deliver the sample examinations and past papers as formative assessment to support candidates in preparation for summative assessment.

Providers are advised to ensure that the full range of specification handbook content is covered to the required depth shown in the 'what learners need to learn' section of the content, and that sufficient time is given to each of these topic areas.

Candidates would benefit from understanding what different command words ask of them. Understanding distinctions, such as between 'Explain' and 'Describe,' helps tailor responses effectively. Encouraging careful reading of questions prevents misinterpretation and improves accuracy. Structured guidance and practice enhance candidates' ability to respond appropriately. For example, the type of response required by an 'Explain' question requires a higher level of response than a 'Describe' question. Candidates should be reminded to read and understand all questions fully before responding to avoid losing marks due to misinterpretation/understanding.

Candidates' performance in understanding mathematics and scientific principles was noticeably poor, and candidates' overall responses in this area were below expectations for Level 3. Providers may consider regular practice, real-world applications, and structured resources to enhance understanding.

Providers should support candidates in developing their skills in writing responses to questions that ask for demonstration of understanding, application of knowledge, analysis and evaluation. Providers could foster evaluation skills by prompting critical thinking and justification of arguments. Model answers, peer reviews, and targeted feedback could be used to refine candidate responses during formative activities.

Performance in ERQs could be improved by encouraging deeper explanations and thorough analysis of different scenarios and relating it back to the context. To achieve high scores, candidates typically require a more comprehensive exploration of scenarios within their context. Candidates should also provide well-supported conclusions and justified arguments.

Some of the papers had very unclear handwriting, making it difficult for the marker to read the response. Providers should encourage candidates to ensure their handwriting is legible. Writing in block capital letters is a possible solution if a candidate's handwriting is not legible.

A reminder to providers that if candidates choose to resit one or more exam papers, both papers must always be resat within the same assessment series. The best combined result from the exams sat in the same assessment series will be used to form the Core Examination subcomponent of the Core grade.

Support materials

Sample and Past Papers:
It is recommended that Providers utilise and deliver the **sample examinations** as well as **past papers** as formative assessment to support candidates in preparation for summative assessment.

Sample and past papers: T Level Technical Qualification in Engineering and Manufacturing (Core) qualifications and training courses | City & Guilds (cityandguilds.com)

Exam Guides:
It is also recommended that Providers utilise the **exam guides** which provides general tips for candidates taking these assessments, examples of different types of questions that will appear, example candidate responses with examiner commentary and examiner hints and tips.

Link: Exam Guide

Events and Webinars:
City & Guilds run free webinars and events throughout the year on preparing for and delivering the T Level exams. The below link provides details on upcoming in person events, live webinars, on-demand webinars and preparation for the core exams.

Link: Events and webinars - T Levels | City & Guilds (cityandguilds.com)

Grade boundaries

The table below shows the grade mark ranges for the Exam, along with the notional boundaries for Paper 1 and Paper 2 – **for the Autumn 2024 series.**

Grade	Mark range	Notional boundaries	
		Paper 1 (8730-031)	Paper 2 (8730-032)
A*	159-200	79-100	79-100
A	139-158	69-78	70-78
B	119-138	59-68	59-69
C	99-118	49-58	49-58
D	79-98	40-48	39-48
E	60-78	31-39	29-38
Unclassified (U)	0-59	0-30	0-28

8730-033 Sub-Component: Employer-Set Project

The Employer-Set Project (ESP) assessment is a project comprised of a number of tasks, based on a scenario comparable to a real-life project in the industry. The assessment is designed to allow candidates to show how they can perform on a project using the core knowledge and skills. This approach to assessment emphasises to candidates the importance and applicability of the full range of their learning to industry practice.

The project is made up of a number of tasks which all relate to the same employer-set project brief:

- Task 1: Research
- Task 2: Report
- Task 3: Plan
- Task 4: Present

The project draws on the content from the core knowledge that sits across all specialisms in Maintenance, Installation and Repair for Engineering and Manufacturing.

The ESP assesses across assessment objectives that will allow for the appropriate differentiation of candidates to support the reliable setting of boundaries. The assessment objectives represent the following:

- **AO1** Plan approach to meet the brief
- **AO2** Apply knowledge and skills to contexts
- **AO3** Select techniques and resources to meet brief
- **AO4** Use maths, English and digital skills
- **AO5** Release project outcome and evaluate

This was the fourth series for the Employer-Set Project. The project is based around a brief which provides information on a Maintenance, Installation and Repair project and specific relevant details and resources. Candidates have to draw on their Core knowledge and skills and independently select the correct processes and approaches to take to provide a solution and the evidence specified in the project brief. All tasks are completed under supervised/ controlled conditions.

Employer-Set Project tasks overview

Task	Task Type	Assessment Objectives covered	Max Mark	Task weighting
1	Research	AO1, AO2a, AO3 (Planning, core knowledge, selecting techniques and resources)	9	16.6%
		AO2b (Core skills)	6	
2	Report	AO1, AO3 (Planned approach, selecting techniques)	6	26.7%
		AO2a (Core knowledge)	6	
		AO2b (Core skills)	6	
		AO5a, AO5b (Realise outcome, review outcome)	6	
3	Plan	AO1, AO3 (Planned approach, selecting techniques)	6	20%
		AO2a (Core knowledge)	6	
		AO2b (Core skills)	6	
4	Present	AO1, AO3 (Planned approach, selecting techniques)	6	26.7%
		AO2a (Core knowledge)	6	
		AO2b (Core skills)	6	
		AO5a, AO5b (Realise outcome, review outcome)	6	
Maths, English and digital skills		AO4a (Maths)	3	10%
		AO4b (English)	3	
		AO4c (Digital skills)	3	

Task 1: Research

Candidates were required to conduct research into different types of sensors in line with the specifications provided by the client.

The majority of candidates planned out their research well, addressing the majority of considerations outlined within the task brief. Some candidates struggled to meet the brief's requirements, particularly in identifying suitable sensors and aligning their research with industry standards. While most identified multiple sensors, many overlooked calibration requirements, power supplies, and preventative maintenance details. Most candidates demonstrated some good technical knowledge; however, the depth and justifications were often superficial. Health and safety considerations were present, however at times these were lacking in detail or relevance to the project brief. Referencing was inconsistent, and supporting materials like images, schematics, or specifications were frequently omitted or underdeveloped. These gaps resulted in the majority of candidates achieving within Band 2, with very few reaching Band 3.

Actions providers can take to support assessment preparation for future series:

Providers should focus on teaching adaptable research and technical skills applicable across various projects. This includes providing candidates with opportunities to interpret briefs, address technical, regulatory, and safety requirements, and structure their work effectively.
Providers are encouraged to use previous Employer-set projects as mock assessments to help candidates practice applying their skills in unfamiliar scenarios, with formative feedback to guide improvement.

Task 2: Report

Candidates were required to draft a report, outlining the requirements for the replacement of the sensors and preventative maintenance schedule. This had to include an annotated wiring diagram for the installation of the sensors.

Reports generally followed a structured format but demonstrated weaknesses in technical justifications. Most candidates showed good ability to organise their work effectively, with good understanding shown of preventative maintenance schedules. Some candidates produced detailed and justified reasoning. Resistance calculations for sensors were incomplete or incorrect for many candidates, showing a need for stronger emphasis on mathematical application. Annotated wiring diagrams often lacked clarity, but the majority of them utilised correct symbols, and alignment with industry standards. While some candidates effectively addressed health and safety considerations and preventative maintenance schedules, others omitted these areas entirely. Band 2 was the most common result, with higher-scoring candidates providing detailed, well-referenced technical justifications and more professional diagrams.

Actions providers can take to support assessment preparation for future series:

Providers should focus on developing candidates' skills in technical reporting and diagram creation. A focus should be made on the importance of aligning reports with the brief's requirements, including providing clear justifications, accurate calculations, and strong technical and commercial reasoning. Workshops on interpreting data, performing calculations, and presenting findings concisely would improve their ability to address technical challenges effectively. Providers should also offer hands-on sessions to help candidates practice creating annotated wiring diagrams and other drawings that meet industry standards. This includes

teaching the correct use of symbols, system layouts, and connections to ensure clarity and accuracy. Additionally, integrating opportunities for candidates to work with real-world case studies or mock projects can enhance their understanding of installation, preventative maintenance, and health and safety considerations. Lastly, providing feedback on draft reports and diagrams could help candidates refine their technical communication skills and ensure their outputs meet professional standards.

Task 3: Plan

Candidates were required to create a planning chart for the installation of the sensors. The task consisted of 2 parts; part A was a planning chart and part B was a supporting statement to justify the decisions made in part A.

Many candidates demonstrated a good understanding of sequencing and the planning principles and often used a Gantt chart to illustrate the plan. Planning charts were sometimes inconsistent, with many candidates failing to provide realistic or detailed timelines. Critical Path Analysis (CPA) was rarely included or poorly executed. Although candidates often included tooling and resources that were generally suitable, their justifications were often superficial. Costs were vaguely presented or missing key details, and durations for tasks were frequently unrealistic. Some of the supporting statements had detailed justifications when discussing resource requirements. However, they were often underdeveloped, failing to explain roles, responsibilities, or the rationale behind sequencing decisions. Despite these issues, Band 2 remained the majority outcome.

Actions providers can take to support assessment preparation for future series:

Providers should focus on developing project planning and organisational skills. A focus should be made on creating effective planning charts, such as Gantt charts or critical path analysis, and teaching candidates how to sequence tasks logically while accounting for resources, durations, and dependencies. Providers should also emphasise the importance of linking planning to real-world considerations, such as cost management, health and safety, and resource allocation. Workshops or practical exercises involving mock projects could allow candidates to practice creating comprehensive plans, incorporating realistic job roles, timelines, and tools. Additionally, providers are encouraged to emphasise to candidates the importance on how to write concise and well-justified supporting statements that explain the reasoning behind their plans.

Task 4: Present

Candidates were required to produce and deliver a presentation, addressing the brief requirements. The presentation was to be delivered to the managing director of the jewellery shop, and the attendees had a non-technical engineering background.

Presentation skills varied significantly among candidates. Stronger candidates demonstrated a clear understanding of the brief and effectively linked their chosen sensors to the client's requirements. However, many presentations lacked confidence, and creativity. Candidates frequently read from the screen during their presentation, only making basic use of digital tools to enhance delivery. Some candidates effectively used visuals and aligned the slides with the key points. A proportion of candidates successfully highlighted how the solutions addressed the project outcome and how it met the clients' expectations. Responses to questions were hesitant, indicating a lack of preparation or technical understanding. Few candidates addressed future improvements or reflected on challenges overcome during the

project. These omissions kept most candidates in Band 2. A stronger focus on presentation skills, including audience engagement and addressing technical questions, is recommended.

Actions providers can take to support assessment preparation for future series:

Providers should focus on improving candidates' presentation and communication skills. Training should include creating clear, visually engaging slides and delivering concise, professional presentations tailored to non-technical audiences. Candidates should also practice justifying their decisions, addressing how their solutions meet project requirements, and responding confidently to client questions. Providers could simulate presentation scenarios with feedback sessions to build confidence and refine delivery. Incorporating digital tools and software workshops would help candidates enhance their presentations with better visuals, animations, and formatting. Additionally, teaching how to link presentations to key aspects of the project, such as budgets, safety, and future improvements, will ensure candidates convey a comprehensive understanding of their work.

Maths, English & digital skills:

Maths: Some candidates demonstrated a solid understanding of mathematical principles, providing accurate calculations with correct SI units. The inclusion of budget calculations was also evident within the report task. However, the performance in calculating sensor resistance, was a notable weakness. Some candidates failed to attempt calculations or made significant errors. A stronger emphasis on mathematical principles and practical applications is necessary.

English: Most candidates demonstrated a good command of grammar, structure, and coherence in their reports and presentations. However, technical terminology was lacking in many cases, which reduced the overall quality of their responses. The majority of candidates achieved band 2.

Digital: Digital tools were generally under-utilised in presentations, with most candidates relying on basic PowerPoint slides. Few used animations, diagrams, or software features to enhance their presentations, limiting their effectiveness. The majority of candidates achieved band 2.

Actions providers can take to support assessment preparation for future series:

Providers should integrate these competencies into project-based learning. For Maths, targeted workshops on applying calculations within technical contexts, such as resistance, tolerances, and budgeting, will help candidates build confidence and accuracy. Regular practice with project-relevant problems and immediate feedback would reinforce their understanding. For English, providers should focus on improving technical writing and communication. Workshops on structuring reports, using appropriate terminology, and maintaining clarity and conciseness would enable candidates to express their ideas effectively. Offering opportunities to draft and revise written work with guidance would also strengthen these skills. For Digital Skills, providers should introduce candidates to advanced software for creating professional diagrams, presentations, and project plans. Training should cover tools for wiring diagrams, Gantt charts, and data visualisation, emphasising their role in enhancing clarity and professionalism. Encouraging candidates to use digital tools creatively in presentations and reports will prepare them to meet industry standards.

Best practice and guidance to providers on potential areas for improving performance in assessment

Providers should integrate more opportunities for candidates to apply math skills in practical contexts within their tasks. Enhancing vocabulary and technical language instruction specific to engineering would be beneficial. Comprehensive training on digital tools and software relevant to planning and presentation tasks should be provided to ensure all candidates can competently use them. Including activities that require the use of digital tools for research, planning, and presentation could help build confidence and proficiency.

Providers should complete and submit the 'Evidence checklist' and must detail on this where evidence has not been submitted. This is designed to be a checklist of the minimum evidence that is expected for a candidate. This checklist must align back with the evidence uploaded. If there are any discrepancies with this, this may delay the marking of the candidates work and City and Guilds will be back in contact with the provider to clarify this.

Providers are encouraged to minimise the number of separate documents uploaded. E.g. ensure all relevant information for Task 1 is submitted in the same document with the correct filename. There was an issue with some file conventions for evidence making it difficult for markers to identify evidence. Providers are advised to ensure that candidate documents are uploaded correctly and contain the relevant content and labelled with the correct filename to ensure consistency and ease of access. For example: *Task_1_Research_[Registration numbers #]_[surname]_[first letter of first name].*

In some instances, providers uploaded evidence for the incorrect candidate. Providers should be aware that this could lead to a delay in results being issued. Providers are asked to check the evidence hasn't corrupted prior to upload and that any videos play and have sufficient sound. This should then be declared on the evidence checklist.

Providers are strongly encouraged to use evidence headers for each task, to allow for ease of identification of candidate evidence and efficiency in marking. All information within the task headers should be completed. Candidate evidence should be included within the header document and not as a separate file.

Providers are reminded that each task is marked in isolation and that each task has been weighted in relation to the assessment objectives covered. This information is detailed in the specification and sample assessments.

Providers are advised to ensure the tutor and candidate both sign and date Declarations of Authenticity once the assessment has been completed. This confirms that the assessment has been conducted in line with the stipulated conditions and guidance. Each candidate only requires one declaration each, declarations are not required for each task. Providers only have to upload the declaration as evidence of compliance to the assessment conditions, there is no need to upload further evidence such as records of the candidates search history. If City and Guilds have concerns relating to the conduct of the assessment and require further evidence, we will contact Providers for this.

Support materials

Sample and Past ESP Assessments:
It is recommended that Providers utilise and deliver the **sample ESP** as well as **past ESPs** as formative assessment to support candidates in preparation for summative assessment.

Sample and past ESPs: T Level Technical Qualification in Engineering and Manufacturing (Core) qualifications and training courses | City & Guilds (cityandguilds.com)

Exemplar ESP Assessments:
It is also recommended that Providers utilise the **exemplar ESP Assessments** to help understand the standard that was required in the Summer 2023 and Summer 2024 assessment series to achieve an A and E grade.

8730-033 ESP A grade exemplar:

- Example 1 (Summer 2024)
- Example 2 (Summer 2023)

8730-033 ESP E grade exemplar:

- Example 1 (Summer 2024)
- Example 2 (Summer 2023)

TQ Employer-Set Project Assessment Process Guide:
The guide gives support to Providers in preparing for and delivering T Level Employer-Set Projects.

Link: TQ Employer-Set Project Assessment process guide (cityandguilds.com)

Events and Webinars:
City & Guilds run free webinars and events throughout the year on preparing for and delivering the T Level Employer Set Projects. The below link provides details on upcoming in person events, live webinars, on-demand webinars and preparation for the ESP assessment.

Link: Events and webinars - T Levels | City & Guilds (cityandguilds.com)

Grade boundaries

The table below shows the grade mark ranges for the Employer-Set Project – **for the Autumn 2024 series.**

Grade	Mark range
A*	72-90
A	63-71
B	54-62
C	46-53
D	38-45
E	30-37
Unclassified (U)	0-29

8730-12 Maintenance, Installation and Repair for Engineering and Manufacturing Core

The T Levels Technical Qualification (TQ) in Engineering & Manufacturing core is made up of the below sub-components (and weightings).

- Exam (70%)
- Employer-Set Project (30%)

UMS grade boundaries

The table below shows the UMS values available for grades in the sub-components. It also shows the UMS values required to achieve each grade for the overall Core. This table will not vary across the series, the values are fixed for this TQ.

Grade boundary	Exam sub-component	ESP sub-component	Overall Core
A*	252-280	108-120	360-400
A	224-251	96-107	320-359
B	196-223	84-95	280-319
C	168-195	72-83	240-279
D	140-167	60-71	200-239
E	112-139	48-59	160-199
Unclassified (U)	0-111	0-47	0-159

Get in touch

The City & Guilds Quality team are here to answer any queries you may have regarding your T Level Technical Qualification delivery.

Should you require assistance, please contact us using the details below:

Monday - Friday | 08:30 - 17:00 GMT

T: 0300 303 53 52

E: **technicals.quality@cityandguilds.com**

W: **http://www.cityandguilds.com/tlevels**

Web chat available **here**.

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