T-LEVELS | Institute for Apprenticeships & Technical Education

T Level Technical Qualification in Design and Development for Engineering and Manufacturing

8730-14 Core Report (Autumn 2023)

Version 1.0

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Foreword

Autumn 2023 Results

The Technical Qualification is made up of two components, 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/maintenance with Ofqual and the other awarding organisations to ensure a consistent approach is taken. We have agreed to maintain the standard from summer 2023 which took account of the newness of this qualification to recognise that students and teachers are less familiar with the assessments (Vocational and technical qualifications grading in 2023 – Ofqual blog), 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 2023 assessment series.

The grade boundaries (and notional boundaries where appropriate) that were used to determine candidates' final autumn 2023 results are also provided. **For autumn 2023, as per Ofqual guidance, the approach to grading continues to recognise that these are new qualifications and maintains the standard from summer 2023.**

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 has been 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 **16** 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 second 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, 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:

- recalling knowledge on geothermal energy. Candidates performed well on this question (Q1a/b) which required candidate4s to provide a definition and an advantage of geothermal energy.
- demonstrating understanding of a heat treatment process (Q5). The majority of candidates responded very well, by describing the process of quench hardening.
- application of knowledge and understanding on the effects of processing techniques on materials (Q14), with some candidates being able to explain how the forging process affects the properties of metals.
- understanding the risks involved when carrying out chemical reactions used in engineering (Q15a), here the majority of candidate were able to explain one risk when carrying out chemical etching.
- demonstrating some knowledge and understanding of the properties of aluminium alloys, with most candidates responding well to the choice of structural material for a hang glider (Q16).

Overall candidates tended to perform better on questions which required a written response rather than a solution that required mathematical methods to be used.

Unfortunately, similar to the summer series, it was noted during marking that there were a high proportion of scripts where candidates left questions within section A blank and did not attempt to provide a response. There was no pattern seen around such questions.

Areas of weakness include:

- recalling knowledge on physical and mechanical properties (Q2). Unfortunately, the majority of candidates were unable to provide a definition of these terms, and simply stated an example of a property.
- recalling how residual current devices (RCD) reduces the risk of serious harm (Q3). The majority of candidates scored 0 marks due to them describing how a fuse works.
- recalling the difference between toque and moment (Q4a) and calculating the maximum torque (Q4b). Unfortunately, both parts of this question were poorly answered. Despite the torque formula being provided to candidates, many candidates did not rearrange the formula correctly which lead to an inaccurate answer.
- solving an equation using logarithms (Q6), a spread of marks was shown with some candidates gaining full marks, however the majority of candidates did not correctly solve the equation.
- calculating the total energy required (Q8). Although a full spread of marks was observed from the cohort, the majority of candidates performed poorly and were not able to accurately calculate the energy required to heat aluminium until it is just melted.
- plotting a graph showing the relationship between 0 and π radians (Q9a) and calculating the velocity using differentiation (Q9b) in relation to the context of the question. For part a) there was a general lack of understanding of a time-based sine wave and for part b) the response by candidates on this question was poor as candidates did not differentiate the formula correctly.

- calculating reaction forces of a simply supported beam (Q10). A spread of marks was seen with the full range of marks being accessed; however errors were often seen in the early stages of the calculation, but the question allowed for follow-through errors which helped the candidates gain marks.
- demonstrating knowledge and understanding of a five-resistor network (Q11). This question was split into a) and b). For part a), candidates were required to calculate the total resistance, most candidates were able to correctly use the series calculation, however there was a lack of understanding of calculating the parallel branch of the network. For part b), candidates were required to calculate the current flowing at point B. The majority of candidates were only able to demonstrate the use of Ohm's law and did not use the value of resistance in kΩ when calculating current.
- using integration to calculate change in velocity in a given context (Q13). This question was answered poorly by the majority of candidates, with only a few candidates demonstrating appropriate skills for applying integration.

The understanding of mathematics and scientific principles was noticeably poor and candidates' overall responses were not as expected for Level 3. However, this was noticed in the summer series as well.

With some written responses candidate's responses often lacked the detail to demonstrate they had the knowledge required to award marks. Responses were often generic and lacked the use of technical terminology this was particularly evident when describing the reaction of metals in Q15, candidates focused on the health and safety issues only and not reasons for chemical reactions.

The last question within Section A, Q16, was a non-constrained question around the choice of materials for a hang glider. Candidates were able to identify more than one property of aluminium but struggled to discuss in depth using appropriate terminology. This showed a very basic understanding of the properties of materials.

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. It's important to emphasise the need to relate back to the context of the question to exemplify answers and demonstrate application of knowledge and understanding.

The ERQs saw most of the cohort placed in band 1 and 2, however they did show a spread of marks across the bands for all three questions. Questions 17 and 18 had the higher discrimination value across the paper, meaning candidates who score highly across the paper tended to score higher marks for these questions, hence the questions differentiated performance. Those who scored highly provided responses with more depth and detail in comparison to the low achieving candidates. In a lot of responses, the candidates struggled to display their evaluation skills, justifying their choices and providing rationales.

Question 17 focuses on the use of the scientific method to develop a product. The majority of candidates demonstrated a limited understanding of scientific methods in the context provided, and simply provided a basic description of the design process instead.

Question 18 explores the requirements of an animatronic display, focusing on control systems and mechanisms. This demonstrated a spread of marks, with the majority of candidates scoring marks at the top of band 1, going into band 2. Most candidates were able to gain some marks by discussing (in limited detail) options available when selecting the control systems and mechanisms for an animatronic display.

Q19 explores the material properties for an injection moulding mould. Most responses were awarded marks within band 1 and band 2. Some candidates did not read the question properly and suggested suitable materials for the screwdriver handle and not the mould. Most candidates showed knowledge of materials and their properties. Higher scoring candidates were able to demonstrate good evaluative skills within this question.

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 has been 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 **14** 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 second 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 questions in section B were scenario based and ramped with AO2 and AO3 questions.

Candidates generally performed better in section A compared to section B.

Areas of strength include:

- recalling three types of the 8 wastes (Q4). It was noted how some candidates made use of the memory aid mnemonic 'TIMWOODS' when responding to this question.
- explaining two reasons in relation to the scale of manufacture (Q6).
- understanding why different drawing types are used within engineering (Q7a). Most candidates answered this question well and gave responses gave responses about showing how the different parts of a product fit together. However, a significant minority of candidates did not score any marks on this question.
- understanding of environmental implications from waste products from manufacturing processes (Q8). Most candidates were able to give valid environmental implications and also gave at least one valid expansion point.
- understanding the reasons for inspections and testing within engineering (Q10b). The majority of candidates answered this question well, with responses generally focusing on points relating to functional testing and ensuring safety.
- explaining why a made to stock is used in a given scenario (Q11). Most candidates made points relating to storage space and customer demand, with some candidates mentioning improved dispatch times.
- understanding of building a customer base, trustworthiness and company reputation in relation to the question context (Q12a), although some responses lacked the depth required to achieve full marks.

Areas of weakness include:

- recalling stages of the risk assessment process (Q1). Whilst a good proportion of learners were able to state at least one or two correct stages of the risk assessment process, few stated all three and a significant number did not give any correct response at all. Some candidates gave very general health and safety points, which were not specific enough to the risk assessment process.
- identifying engineering symbols (Q2a/Q2b). There was a mixed response to this question, with most candidates being able to recall the symbol for part b) compared to a). Only a small proportion of candidates scored the mark available for part a) and was the least well answered of the two symbols recall questions.
- describing the operation of a summing point (Q3). Few candidates scored any marks on this question, and a significant number of candidates did not attempt it at all. Where candidates did score marks, it was usually due to points about adding signals together.
- identifying types of Continuous Professional Development (CPD) and how this improves performance (Q5). Most candidates were able to give at least one type of

CPD, with some also providing valid suggestions of how each would improve engineering performance. However, a number of candidates incorrectly focused on incentives and appraisal processes or gave vague or unspecific suggestions which were not sufficiently specific to the question asked.

- explaining the purpose of different drawing types (Q7b). Most candidates provided responses focused on showing the steps of a process. Often candidates were unable to expand sufficiently on the basic points made.
- understanding the benefits of using total productive maintenance (TPM) to an engineering company (Q9). Common responses from candidates included reducing downtime and boosting production efficiency, however often candidates responses were limited, and failed to explain more than one benefit, or were unable to expand sufficiently on any benefits given.
- comparing closed and open loop systems (Q13). There was a mixed response to this unconstrained question. Whilst most candidates showed at least some relevant knowledge and understanding, this was mostly limited to band 1 and band 2 level responses, with answers typically lacking the depth of understanding of open and closed loop systems required to achieve band 3. A number of candidates made general comments about the use of sensors without linking it to the use of open or closed loop systems.

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. Answers to AO1a and AO1b questions were very mixed.

Responses to extended questions (ERQs)

The ERQs in this paper were not answered well, with a number of candidates struggling to move out of bands 1 and 2 across multiple questions, and a significant number of candidates scoring zero marks due to leaving the questions blank.

Question 15 focuses on how developments in cloud computing have contributed to the social and economic development in the UK. Most candidates who scored marks were placed in band 1. Many candidates responded to the question in a general manner, discussing the internet or technology in general, and did not address the specific question context. Those who gained marks mainly focused on the sharing of data, gathering of customer data and social media.

Questions 16 and 17 were answered very poorly. Most candidates provided general responses that did not sufficiently address the stated contexts or questions asked. These questions assessed the structure of the responses, and there was some evidence that candidates had considered the structure of their responses, however technical deficiencies and lack of understanding were shown within many responses given.

In question 16, which asked candidates to consider the impact different standards may have on manufacturing a product. Many candidates struggled to show either a breadth or depth of understanding of the different types of standards which impact engineering, instead candidates focused on health and safety principles or generic high-level statements, such as standards result in higher quality both of which achieved some marks, however would not

allow candidates to exceed band 1. The cohort struggled to demonstrate they could evaluate, or in many cases even consider, the relevant standards. The context of the question mentioned three types of manufacturing process to prompt what they might want to consider as part of their response. For example, the context referenced ‘assembly’, which should have guided candidates to consider drawing standards, and how they are used to encourage a universal system for communicating how to assemble products. Some candidates responded by explaining how the playground would be manufactured, without reference to standards.

Question 17 explored the benefits and limitations of introducing the Internet of Things (IoT) in relation to the different activities in the given context. Many candidates did not appear to have any understanding of the Internet of things (IoT), and instead discussed the internet in general or other unrelated technologies. Some appeared to confuse the IoT with technologies such as artificial intelligence (AI) or virtual reality (VR) and did not relate back to the context of the question.

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 as well as past papers (Summer 2023) as formative assessment to support candidates in preparation for summative assessment.

Candidates would benefit from understanding what different command verbs are asking of them. For example, the type of response required by an 'Explain' question requires a higher level of response (e.g. with a valid expansion point) than a 'Describe' question. Candidates should be reminded of the need to ensure they fully read and understand all questions before responding.

Providers should support candidates on developing their skills in writing responses to questions that ask for demonstrating of understanding, application of knowledge, analysis and evaluation.

ERQ performance could be further enhanced by preparing candidates to consider in-depth explanations and analysis (including secondary implications where appropriate) on different scenarios and relating it back to the context. To score the higher bands candidates needed to include more detailed conclusions and justifications in their responses.

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.

Candidates must be reminded of the need to ensure they fully read all questions before responding. In particular, the ERQ scenario-based questions and questions assessing the application of knowledge and understanding (AO2) must be related back to the context of the question.

Support materials

Sample and Past Papers:
It is recommended that Providers utilise and deliver the **sample examinations** as well as **past papers** (Summer 2023) 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: 8730 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 2023 series.**

Grade	Mark range	Notional boundaries	
		Paper 1 (8730-031)	Paper 2 (8730-032)
A*	159 - 200	78 – 100	80 - 100
A	138 – 158	68 – 77	70 – 79
B	117 – 137	57 – 67	59 – 69
C	96 – 116	46 – 56	49 – 58
D	75 – 95	35 – 45	39 – 48
E	54 – 74	25 - 34	29 – 38
Unclassified (U)	0 – 53	0	0

8730-035 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 and tender specification.

- Research
- Design
- Plan
- Present

The project draws on the content from the core knowledge that sits across all specialisms in Design and Development 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 first series for the Employer-Set Project. The project is based around a brief which provides information on a Design and Development 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 resource)	9	16.6%
		AO2b (Core Skills)	6	
2	Design	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 research bespoke lighting column and produce a technical brief. The general approach to research was good, with the majority of candidates awarded marks within band 2.

- It was noted that some candidates submitted work appeared incomplete or in some cases research was focused in one area and not all elements outlined in the research task were covered. This is similar to the last series.
- Most candidates used the internet for their research, this was sometimes copied and pasted directly from the website and utilisation of this research in the technical brief was weak.
- For some candidates, evaluations lacked breath and understanding making it unclear if candidates understood or could interpret the information they found during research.
- Many failed to provide references/sources from their research activities.
- For some candidates, research as a whole lacked structure and clarity.

Actions providers can take to support assessment preparation for future series:
Providers are advised to work with candidates to improve their skills in relation to research and correct referencing. Providers are advised to ensure candidates have the opportunity to develop their writing skills including providing justifications where required.

Task 2 – Design:

Candidates were required to develop designs and prepare drawings (sketches and CAD) for the bespoke lighting column (undertaking relevant calculations where appropriate).

- The use of CAD was often completed to a good standard and was much clearer than the supporting sketches submitted. When completing the CAD drawings, emphasis should be made on the importance of completing the title block to label parts and ensuring components are to scale.
- Not all candidates incorporated sufficient annotations to their designs, parts and components to understand what sketches/CAD drawings were conveying.
- Not all candidates produced design proposals but instead focused on one idea with insufficient engineering judgements and lacking clarity.
- With some candidates, the choice of materials did not convey clear understanding of sustainability and material properties. Design choices did not always refer to the design brief requirements.

Actions providers can take to support assessment preparation for future series:
Providers need to focus on developing candidates iterative design improvements and effective selection and evaluation of design choices. Clarity in sketching and writing should be key in professional practise and must be fully dimensioned that allows someone else to make the item. Providers are advised to ensure that candidates understand the importance of covering all elements of a product design specification in their solutions. Scanned images were often difficult to read, ensure an appropriate pencil is used for sketches. Request that candidates submit their sketches large and clear with a pencil able to provide a deep

scanned image so as examiners can see the design ideas and read the annotations and identify dimensions.

Task 3 – Plan:

Candidates were required to produce a programme of work plan detailing the stages and considerations required to complete the design, development and installation of their bespoke lighting column.

- For most candidates, the planning task was quite weak, Gantt charts were often basic and linear with some across multiple pages and hard to read. Critical paths were not submitted for most candidates and there were clear misunderstandings around what a critical path is from the ones that were submitted.
- Some students misunderstood the planning and critical path analysis by providing descriptions of stages as opposed to producing a programme of work plan.
- Some candidates produced a written statement, but it did not support or justify their programme of work plan, and factors of safety and risks were not always included within planning.

Actions providers can take to support delivery of the assessment for future series:
Providers are advised to ensure candidates have the opportunity to develop the skills required, to plan a project including the production of Gantt charts, programme of work plan, critical path and risk assessments.

Task 4 – Present:

Candidates were required to produce and deliver a presentation which addressed the task brief.

- The presentation was the best responded to and the strongest area for most candidates with very few reading off the screen.
- Some though did not ensure presentations were logical and structured missing key points or not emphasising them effectively.
- A number of candidates had information and details present in this task, which had been omitted from previous tasks. If this work had been included in the previous task documents, candidates would have achieved higher marks.
- Some PowerPoint presentations included more text than needed on each slide.
- Some candidate's presentation skills were weak with not all information being relayed effectively and the audience outlined in the task not considered.

Actions providers can take to support assessment preparation for future series:
Providers are advised to ensure candidates have the opportunity to develop their presentation skills including the production of presentations and presenting information to an audience. Providers are advised to remind candidates that their presentation must be to the audience stated in the task. It was also noted that the video evidence uploaded by some providers did not play or had poor sound. Providers are advised to check the quality of video evidence prior to submitting it and to ensure that microphones are used.

Maths, English & digital skills:

Evidence across all four tasks is taken into consideration when assessing English, maths and Digital Skills. Generally, the majority of candidates were within band 2 for English, Maths and Digital Skills.

- Maths skills was limited throughout this ESP. This was mainly due to the following:
    - Minimal to no calculations of
        - force to carry the maximum load of 50 kg
        - the light required over the area of 14000 m^2
    - Adding mathematical information that was not needed and then getting it incorrect.
    - No real scale on sketches/CAD images.
- Most candidates scored in the middle band for English skills. Language was mostly used correctly with technical language present in both written and video evidence. Where candidates scored maximum marks for English, it was noted that the candidates articulated information well in both their written report and verbal presentation with clarity and error free. Terminology was technical and consistent with the intended audience considered.
- Most candidates scored in the middle band for digital skills. Candidates utilised digital skills, when producing the CAD drawing, planning chart (usually in excel) and the presentation using PowerPoint. It became evident that some candidates struggled with basic digital skills such as formatting text and layout of word processed and spreadsheet evidence. This should be developed to add value and increase the effectiveness of evidence presented.

Actions providers can take to support delivery of the assessment for future series:
Providers are advised to highlight the importance of maths, English and digital skills throughout the entirety of the ESP. Candidates should be encouraged to use spell check and check the correct use of terminology. Providers are encouraged to ensure that units in calculations and some dimensional analysis are a mathematical skills focus. Applied mathematics in project related settings will prepare candidates for the ESP set up. Candidates could have considered further the text size and layout on their presentations and further thought could have been given to adding animation, exploded drawings, rendered final design to enhance their presentation as well as reducing text on crowded slides.

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

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.

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** (Summer 2023) 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 assessment series to achieve an A and E grade.

Link: 8730-035 ESP A grade exemplar

Link: 8730-035 ESP E grade exemplar

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 2023 series.**

Grade	Mark range
A*	70 – 90
A	61 – 69
B	52 – 60
C	44 - 51
D	36 – 43
E	28 – 35
Unclassified (U)	0 - 27

8730-14 Design and Development for Engineering and Manufacturing Core

The T Levels Technical Qualification (TQ) in Engineering and 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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