



**T Level in Design and  
Development for Engineering and  
Manufacturing Occupational  
Specialism**

**8714-322 Electrical and Electronic  
Engineering  
Occupational Specialism Report  
(Summer 2025)**

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# Foreword

## Summer 2025 Results

The occupational specialism qualification is made up of one component, which need to be successfully achieved to attain the T Level in Design and Development for Engineering and Manufacturing - Electrical and Electronic Occupational Specialism.

We discussed the approach to standard setting/maintaining with Ofqual and the other awarding organisations before awarding this year. As in 2024, we have agreed to take account of the newness of T Level qualifications in how we award, to recognise that students and teachers are less familiar with the assessments in the first years of awards, whilst also recognising the standards required for these qualifications

<https://www.gov.uk/government/publications/ofqual-guide-for-schools-and-colleges-2025/ofqual-guide-for-schools-and-colleges-2025#grading>).

## 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 Design and Development for Engineering and Manufacturing – Electrical and Electronic **Occupational Specialisms**.

This report provides general commentary on candidates' performance in the occupational specialism assignment. 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 summer 2025 assessment series.

The grade boundaries that were used to determine candidate's final summer 2025 results are also provided. **For summer 2025, as per Ofqual guidance, the approach to grading recognises that these are new qualifications.**

# 8714-322 Electrical and Electronic Engineering

## Occupational Specialism

### Task 1 Design

Candidates are required to produce a design specification outlining the design for the circuitry (by referring to the design criteria). Research of control mechanisms, sensors and visual/aural outputs should be evidenced. Appropriate configurations should be included, for example circuit diagrams and Printed Circuit Board (PCB) layouts. Calculations should be evident e.g. timings, Light Emitting Diode (LEDs)/resistors, power etc. A bill of materials (BoM) should be included where components are listed with part numbers/suppliers and costs.

Virtual modelling should be evidenced to show function and operation of circuit elements. A prototype/model should be built using stripboard/breadboard to demonstrate the functionality of the design before production and all necessary tests should be carried out e.g. continuity and voltage drop.

High-performing candidates approached the assessment using engineering methodologies. Rigorous research was evident with solid justifications throughout. Detailed analysis and evaluation of selected components were made, which included calculations being used in the decision making.

Engineering drawings and sketches were detailed and showed the function of each component of the design criteria. This was then used during virtual modelling to evidence functionality of each part, for example, sensors, LEDs, and buzzers. Strong evidence of a functioning-built model e.g. breadboard was included showing LED function. Health and safety was covered in detail and made relevant to the design specification.

Low-performing candidates had selected components with very little analysis or justification, sometimes just producing images with a brief overview of operation and basic operating parameters. Minimal or no calculations were used with no relevance to the design selected.

Only a few diagrams or drawings were included showing minimal operation of the circuit and/or components.

Virtual modelling was not evident or minimal showing very little functionality. Generally, no prototype/model on breadboard or testing was evident. Health and safety was mentioned briefly, with very little relevance to the design criteria, for example, Health and Safety at Works Act (HASAWA) overview.

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

- candidates must be able to read a design brief, analyse, interpret the brief, and use rigorous research to produce a detailed design specification with justifications, considerations, and comparisons
- virtual modelling must be used to effectively evidence functionality and testing to demonstrate higher analysis skills  
an initial functional model on a breadboard or stripboard, should be provided, demonstrating initial circuit diagram functionality and selection of components.

### **Task 2 Manufacture and Test**

Candidates are required to produce a detailed risk assessment that considers all stages of the manufacturing and testing process in a logical order, outlining all hazards, risks, mitigations, and probabilities before commencement of manufacture of the PCB model and testing.

A range of test methods should be shown using both functionality testing and use of measuring equipment, for example multimeters, which should be evidenced in test records as part of the report.

High-performing candidates produced very detailed risk assessments with all possible hazards, mitigations and probabilities outlined that may be encountered during the task.

Manufacturing and developing, for example. soldering and construction was of a very high standard.

Test reports were detailed, showing both quantitative and qualitative results, which included the use of meters to measure values.

Low-performing candidates produced weaker risk assessments with very little detail and no probabilities. Testing was very poorly evidenced with limited evidence of test method/records included in the report.

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

- detailed risk assessments ensuring all hazards and mitigations with probabilities included, ensuring that these are relevant to the task and not generic to any workshop activity
- testing needs to be both qualitative and quantitative, for example showing functionality and using measuring equipment to attain readings, such as continuity values
- test records should be detailed and evidence all tests, expected outputs, resultants, and actions.

### **Task 3 Peer Review**

Candidates are required to present designs to their peers verbally using annotated sketches and diagrams, explaining their design. They are then required to collaborate with peers to inform their own design, and peer review designs providing feedback. Although peer reviews are not credited, they are used towards the completion of Task 4.

High-performing candidates provided more detailed feedback forms to support evidence of peer discussions and presentations to help support and inform modifications to their design proposals.

Low-performing candidates did not provide constructive feedback to enable peers to modify their design proposals, lacking sufficient information to support improvements.

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

- ensure peer review feedback is checked prior to sharing with the candidate, to ensure it is appropriate and contains sufficient detail to inform design. Feedback should be realistic and meaningful to help inform the candidates for the final designs in Task 4.

### **Task 4 Evaluation and Implementation**

The candidate is required to consider revisions to the original virtual model, demonstrating how they have considered the peer feedback they received in order to improve the design of the circuitry, providing justifications for amending/not amending their designs.

High-performing candidates produced detailed reports with realistic and achievable changes made, using peer feedback as guidance. Analysis and justification were used to show a deeper understanding of these changes.

Diagrams and virtual modelling were included to evidence the changes to be made to the circuits, demonstrating a comprehensive and thorough understanding of what needed to be achieved.

Low-performing candidates produced superficial reports with very little changes identified. Evaluation was weak and sometimes very superficial and read more like a conclusion to the assessment repeating the design brief wording.

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

- ensure candidates produce evaluative reports with justifications and reasoning, taking into account all evidence from Task 3
- virtual modelling and circuit diagram changes should be included to illustrate these changes.

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

It is recommended that providers utilise and deliver the published assessments as formative assessment to support candidates in preparation for summative assessment. This will not only help to prepare candidates but will be an ideal opportunity for marker training and standardisation. It is also recommended that providers share the Guide Standard Exemplification Materials (GSEM) and Grade Standard Exemplification Materials (GrSEMs) with candidates, to support with exemplification of the assessments and evidence outputs.

The assessor and candidates must thoroughly read the assessment to ensure the work is carried out to the design criteria required. Moderators will be working to the assessment brief and marking grids and making judgments accordingly.

Appropriate Personal Protective Equipment (PPE) should be worn at all times and assessors should ensure that candidates are working safely and should not come to harm or risks to health from the materials, tools or equipment used in the assessment.

Where photographic evidence is requested ensure stages of production and the final prototypes are included.

A large number of photographs are not required, but they do need to show everything a moderator would require to be able to perform the remote moderation work. Photos need to be of sufficient resolution to enable “zooming in” to determine quality. Photographs should be collated into one document, and well labelled, and with commentary if possible.

Videos will need to show specific and important points of the assessment, for instance the candidate completing prototype testing/functionality.

Utilisation of the Photographic Evidence Guidance Document would support providers to capture relevant and valuable information for marking and moderation purposes to support practical observation feedback.

Providers should ensure that practical observation forms are detailed, covering all aspects of the activity being observed. The practical observation records should contain accurate information, specific to the candidate being observed and offer differentiating commentary between individual candidate’s performance utilising the marking grid terminology. They should also identify areas of strength and weakness to distinguish between the different qualities of performance and to facilitate accurate allocation of marks once all evidence has been submitted.

## Support materials

### **Sample and Past Occupational Specialism (OS) Assessments:**

It is recommended that Providers utilise and deliver the **sample OS** as well as **past OS** (if available) as formative assessment to support candidates in preparation for summative assessment.

Sample and past OS (if available): [8714-322 D&D Electrical and Electronic Engineering OS SAMPLE](#)

[8714-322 D&D Electrical and Electronic Engineering OS Summer 2024](#)

### **Guide Standard Exemplification Material (GSEM) Assessments:**

It is also recommended that Providers utilise the **GSEMs** to help understand the standard required to achieve a Distinction and Pass grade.

8714-322 OS Distinction GSEM: [T Level Technical Qualification in Design and Development for Engineering and Manufacturing – Electrical and Electronic Engineering Guide Standard Exemplification Material – Distinction](#)

8714-322 OS Pass GSEM: [T Level Technical Qualification in Design and Development for Engineering and Manufacturing – Electrical and Electronic Engineering Guide Standard Exemplification Material – Pass](#)

### **Grade Standard Exemplification Material (Grade SEM) Assessments:**

It is also recommended that Providers utilise the **Grade SEMs** to help understand the standard that was required in the summer 2024 assessment series to achieve a Distinction and Pass grade.

8714-322 OS Pass Grade SEM: [T Level Technical Qualification in Design and Development for Engineering and Manufacturing - Electrical and Electronic Engineering Grade Standard Exemplification Material - Pass](#)

### **TQ Occupational Specialism Assessment Process Guide:**

The guide gives support to Providers in preparing for and delivering T Level Occupational Specialism assessments.

Link: [TQ Occupational Specialism 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 Occupational Specialisms. The below link provides details on upcoming in person events, live webinars, on-demand webinars and preparation for the occupational specialism assessment.

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

## Grade boundaries

The table below shows the grade mark ranges for the Occupational Specialism **for the summer 2025 series**.

<b>Grade</b>	<b>Mark range</b>
Distinction	69-90
Merit	54-68
Pass	39-53
Unclassified (U)	0-38

**T-LEVELS**



## 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

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E: [technicals.quality@cityandguilds.com](mailto:technicals.quality@cityandguilds.com)

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Web chat available [here](#).

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