



HM Government

T-LEVELS

T Level Technical Qualification in Engineering, Manufacturing, Process and Control (Level 3)

Employer-Set Project (8730-034)

Candidate Pack
(Summer 2026)

Version 1.0

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Employer-Set Project introduction

The Employer-Set Project (ESP) is an assessment, made up of a number of tasks, which will assess the knowledge and skills you have learnt as part of the Core element of your T Level.

Each ESP is developed together with employers in the industry to reflect realistic types of developments, activities and challenges.

All the tasks relate to the same ESP brief in the following order:

Task		What will you be doing?	Timings	Marks
1	Research	You will plan and conduct research in relation to the project brief.	3 hours	15
2	Report	Using the results of your research from Task 1 you will draft a written report detailing your response to the project brief requirements.	4 hours	18
3	Design	Using the results of your research from Task 1, written report from Task 2 and the knowledge and skills you have been taught, you will produce orthographic and assembly drawings, supporting design calculations and reflective notes.	6 hours	24
4	Present	You will present the outcomes of Tasks 1, 2 and 3 to your assessor, as if they were the client.	2.5 hours	24
Totals			15.5 hours	81
Maths, English and digital skills				9
Total marks				90

Maths, English and digital skills

Throughout the completion of the tasks within the project, you will generate evidence towards your maths, English and digital skills. There are 9 marks allocated to maths, English and digital skills across all tasks like this:

Maths	3 marks available
English	3 marks available
Digital	3 marks available

General guidance for candidates

As all the tasks relate to the project brief, it is important that you read it carefully and fully **before you start the ESP**. You will be given 30 minutes reading time for this purpose at the start of the ESP.

The ESP is a formal assessment that you will be marked and graded on. You will be marked on the quality and accuracy of the written work you produce. It is therefore important that you carry out your work to the highest standard you can. How well you know and understand the subject, and how you have used your knowledge to complete the ESP must be clear to the marker. This means you should explain your thinking and how and why you have made your decisions within your written work e.g. as part of your planning, reflections, or evaluations.

Plagiarism

Plagiarism is the failure to acknowledge sources properly and/or the submission of work that is not your own. Plagiarism is **not** allowed in this ESP.

This ESP is an assessment of your abilities, so the work submitted **must** be all your own and carried out under the conditions stated. You will be asked to sign a declaration of authenticity that you have not had any help with the ESP. Your assessor is allowed to give you general advice, i.e. clarification of the task instructions. However, general advice will not:

- Include any specific advice on how to improve work to meet the required standard
- Provide feedback on anything missing from your work
- Intervene in any way that improves the standard or presentation of work.

If there is a need to provide more than general advice, your assessor will need to record the advice, as this will be taken into account during the marking of the submitted work.

Where research is allowed, it **must** be able to be clear which work you have done yourself and which you have found from other sources. It is therefore important to make sure you acknowledge sources used and clearly reference any information taken from them (eg providing as a minimum a list of web addresses / books / articles etc. used).

Use of Artificial Intelligence (AI)

AI may only be used as a source where the use of the Internet is allowed for a research task. Where you use AI, you **must** acknowledge its use and show clearly how you have used it. Please be aware that how you have decided to use it may impact on the overall mark you are allocated.

Guidance and feedback

There are some rules around how much guidance and feedback your assessor can provide as part of completing the ESP. Your assessor is allowed to give you some help in understanding the task instructions if necessary. However, if your assessor has to provide significant clarification and guidance, this will be recorded and considered as part of the marking process and may reduce your mark. Your assessor will make it clear if any guidance given may reduce your mark before it is given, so that you understand this when asking for guidance.

Timings and planning

Each task has an allocated duration. You will have to plan your work so you can complete the task within the time allowed. You should take care to make sure you have divided the time

available between parts of the task appropriately. If you are not sure how much time you have, check and clarify this with your assessor.

When working under supervised conditions for longer sessions, your assessor will advise you on how breaks can be facilitated.

At the end of the ESP, before submitting your work, you will be required to sign a declaration of authenticity. This document confirms the work submitted is your own and that the ESP tasks were completed within the set assessment times. The declaration of authenticity will also be signed by your assessor.

Presentation of work

Presentation of work must be neat, legible and appropriate to the task. You should make sure that each piece of evidence, including any forms, are clearly labelled with your name, ESP title and task number. Where there is a template to use this will be provided by your assessor.

All electronic files must be given a clear file name that allows your assessor to identify it as your work. You should consider using a consistent, clear file-naming convention across all the pieces of evidence you generate for submission.

Written work may be word processed or handwritten, unless stated otherwise. Any sketches should be neat and tidy, and annotated appropriately. Any technical drawings should be neat and tidy, drawn to an appropriate scale and annotated appropriately.

Any calculations should be set out clearly, with all working shown, and any assumptions made. You should use appropriate units of measurement at all times. Answers must be expressed to a degree of accuracy, consistent with the requirements of the ESP.

Word counts

Typical word counts or numbers of pages of evidence are provided within the requirements of each task. Where word counts have been provided, these are given as an indicative guide only to support you to understand the type of response that is expected from you. You will not be penalised as part of the marking if your response is below or above the indicative word count provided, however you should consider the clarity and succinctness of your response if it goes above the word count.

Submission of evidence

Your work will be submitted as final at the end of each assessment session. You will **not** have an opportunity to rework any of your evidence once the assessment session ends. However, if through other tasks within the ESP, you develop your ideas or build on earlier tasks, then you should continue to build on these and should use your evaluation to outline the reasons why this happened.

Project Brief

The employer

GTL Water Solutions Limited is a UK-based manufacturer of advanced water systems. The company specialises in large-scale production of technologies designed to reduce household reliance on freshwater supplies.

Their systems collect and store wastewater for non-drinking uses through a process known as 'greywater harvesting.' This involves capturing water from non-toilet sources such as showers, sinks and washing machines and reusing it for applications like toilet flushing and garden irrigation, thereby easing demand on mains water.

GTL Water Solutions Limited has recently secured a new contract to produce a system specifically designed to capture wastewater from handwash basins for use in toilet flushing.

The project

You are an engineer reporting to the Engineering Project Manager.

Your task is to design a handwash basin that can be mounted onto an existing standard toilet cistern, allowing the wastewater from handwashing to be collected directly into the cistern. This handwash basin must integrate with an existing toilet system; however you are not required to design the toilet cistern itself.

You will also need to research suitable materials and manufacturing methods that support efficient batch production.

Project tasks

As an engineer, you have been tasked with:

- researching design and manufacturing options for a handwash basin, considering both specific and general requirements
- producing a report in response to the project brief, detailing your proposed solution for the design of a handwash basin
- producing a detailed design of a handwash basin, including any relevant design calculations
- delivering a presentation to present the findings from your report, and your designs, to the Engineering Project Manager.

Specific issues

The finished solution must take into consideration the following points:

- The handwash basin and wastewater system will need to be installed onto a typical-sized toilet cistern.
- The handwash basin must be manufactured from suitable non-ceramic material(s).
- There must be a suitable bought-in filter to protect the cistern against blockage from solid contaminants.
- The handwash basin must include a bought-in method of attaching it to a water supply.
- The manufacturing methods for the handwash basin need to be designed to support production in batch quantities of 200 units.

General issues

The handwash basin must be cost effective to manufacture in batches as specified.

Consideration will need to be given to how the handwash basin and wastewater system can be safely installed and maintained effectively.

Task 1 – Research

To respond to the problem outlined in the Brief, the Engineering Project Manager has asked you to review the project brief and research the specific and general issues which have to be overcome.

You are to conduct research to determine:

- the dimensions of a typical-sized toilet cisterns used in domestic properties
- handwash basin designs that can be fitted onto and drain into typical-sized toilet cisterns used in domestic properties
- a suitable bought-in filter system to remove solid particles
- suitable non-ceramic material(s) for the handwash basin
- any other material(s) and components that are needed to manufacture the system
- costs of the materials and components that will be used
- methods of assembly of the handwash basin and fittings
- suitable manufacturing methods for the handwash basin to enable it to be produced in batches of 200
- any relevant health and safety considerations and legislation.

Record notes on the findings of your research and initial analysis. Your notes must include:

- information from Original Equipment Manufacturers (OEM)
- information from other Internet sources
- rough diagrams and sketches
- costing calculations.

The research notes and analysis will typically be 1500 words. You must include a list of your references/sources alongside your research notes. References/sources are not included in the word count of 1500 words. How well you have planned your research will contribute to marks achieved for this task.

Timing of assessment

- You will have **three hours** to complete the research and record your findings.

Conditions of assessment

- Your research should be completed working alone under supervised conditions.
- You must **not** share or discuss your work with other candidates.
- You **will** have access to the Internet to conduct your research.
- Assessment evidence must be handed in at the end of each session for secure storage which cannot be accessed.

What you must submit on completion of this task

- **Research notes** (typically 1500 words) hard copy or file saved securely (eg on memory stick to be handed in)
- **List of references/sources** (not included in the word count of 1500 words).

Additional evidence of your performance that will be captured for marking

- N/A

Marks available

- 15

Task 2 – Report

You are required to produce a written report in response to the project brief outlining your proposed solution for the design of the handwash basin.

With reference to the project brief and your research notes, you need to produce a written report detailing your intended initial approach with consideration of:

- the appropriate materials used to manufacture the handwash basin, and why they were selected
- a suitable bought-in filter system
- a handwash basin design that can be fitted onto and drain into typical-sized toilet cisterns
- suitable methods of assembly of the handwash basin and fittings, and why they were selected
- suitable manufacturing methods for the handwash basin and how these will enable it to be produced in batches of 200
- calculations of the costs of the materials and components
- any health and safety considerations relating to the proposed approach.

The written report will typically be 2000 words.

You can include downloads from Original Equipment Manufacturers (OEM) catalogues showing tooling aids, components and materials. Basic design sketches can be included to support your intended approach as detailed in your report.

Timing of assessment

- You will have **four hours** to complete your report.

Conditions of assessment

- Your report should be completed working alone under supervised conditions.
- You must **not** share or discuss your work with other candidates.
- You will have access to a copy of your research notes (for review purposes only).
- You **will** have access to the Internet for the completion of this task.
- Assessment evidence must be handed in at the end of each session for secure storage which cannot be accessed.

What you must submit on completion of this task

- **Written report** (typically 2000 words) - hard copy or file saved securely (eg in a secure online location or on memory stick to be handed in).

Additional evidence of your performance that will be captured for marking

- N/A

Marks available

- 18

Task 3 – Design

You are to develop your initial approach in response to the project brief.

With reference to the project brief, and your response to previous tasks, you must produce a detailed design of a handwash basin that can be mounted onto a toilet cistern.

Part A

You must create an orthographic drawing for the handwash basin that addresses the brief, detailing:

- a Bill of Materials (BOM) identifying the parts, materials and components required to manufacture the handwash basin
- a suitable bought-in filter system.

As part of your design, you must also produce a detailed drawing:

- an assembly drawing detailing how the handwash basin will be mounted to the toilet cistern, including components, fixtures and fittings.

Drawings can either be produced using CAD or by hand as a paper-based drawing. Drawings must be produced in accordance with the drawing standard BS 8888. You must include draft iterations of your design to show how your design idea has developed.

The submission for this task will typically be **two** A3 drawings.

Part B

As part of your design, you **must** include any relevant design calculations related to your drawings:

- all calculations used to determine the overall costs of the final design solution
 - the overall dimensions (size) of the handwash basin
- the thickness of the handwash basin with respect to the material selected.

Alongside your calculations, you must include reflective notes on how well the design meets the requirements of the brief. This must include:

- justification/rationale for your final design option
- whether your design is fit for purpose
- how your design meets the requirements of the brief.

The submission for this task will typically be **two** A4 sides of supporting calculations and reflective notes.

Timing of assessment

- You will have **six hours** to complete your design and calculations.

Conditions of assessment

- Your design should be completed working alone under supervised conditions.
- You must **not** share or discuss your work with other candidates.
- You will have access to copies of your responses to the previous tasks (for review purposes only).
- You will **not** have access to the Internet for the completion of this task, with the exception of access to the CAD library.
- Assessment evidence must be handed in at the end of each session for secure storage which cannot be accessed.

What you must submit on completion of this task

- **Part A – Fully dimensioned orthographic drawing and assembly drawing** (typically two A3 drawings) including design iterations
- **Part B – Supporting design calculations and reflective notes** (typically two sides of A4) – hard copy or file saved securely (eg in a secure online location or on memory stick to be handed in).

Additional evidence of your performance that will be captured for marking

- N/A

Marks available

- 24

Task 4 – Present

You are to prepare and deliver a presentation to present the findings from your report, and your designs, to the Engineering Project Manager of GTL Water Solutions Limited.

You must cover a summary of your proposed design which outlines:

- consideration of how your design proposal has met both the specific and general issues identified in the project brief
- the appropriate materials used to manufacture the handwash basin, and why they were selected
- the bought-in filter system chosen
- the processes that will be used to manufacture the handwash basin
- the methods of assembly of the handwash basin and fittings, and why they were selected
- the challenges that were found when selecting and designing (eg materials, design ideas, components) and how these were overcome
- how well you think your design and proposal addresses the requirements of the brief
- any changes you would make if repeating the project.

You **must** use digital technology for your presentation.

Your assessor will take on the role of the Engineering Project Manager of GTL Water Solutions Limited. They will ask questions relating to your presentation from a technical perspective.

Timing of assessment

- You will have **two hours** to prepare your presentation.
- You will have **30 minutes** to present your findings and respond to questions (typically split with 20 minutes for presenting your findings and 10 minutes for responding to questions).

Conditions of assessment

- Your presentation must be developed and delivered working alone under supervised conditions.
- You must **not** share or discuss your work with other candidates.
- You will have access to copies of your responses to the previous tasks (for review purposes only) as well as any presentation materials or notes (eg PowerPoint slides).
- You will have access to digital technology for the presentation of your findings - you can choose the format or program you wish to use (eg PowerPoint).
- You will **not** have access to the Internet for the completion of this task.
- Assessment evidence must be handed in at the end of each session for secure storage which cannot be accessed.

What you must submit on completion of this task

- **Presentation materials** – eg slides, handouts etc. Hard copy or file saved securely (eg in a secure online location or on memory stick to be handed in).

Additional evidence of your performance that will be captured for marking

- **Video recording** of presentation.
- **Presentation Q&A record.**

Marks available

- 24

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Get in touch

City & Guilds Technicals Quality Team

We 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:

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