IChemE

Institution of
Chemical Engineers

Incorporated Engineer (IEng) Registration through IChemE

Information and guidance for applicants

This document explains the standard required and the application process for IEng registration through IChemE

Contents

1 Introduction

1.1 Who is this information and guidance for?

This document contains information and guidance for people who either:

- consider that they are ready to apply for registration as an Incorporated Engineer (IEng) via IChemE; or
- are unsure whether they are ready to apply.

In both cases we strongly advise you to read this document as it explains:

- what it means to be professionally registered as an Incorporated Engineer;
- the standard that applicants must meet for their application to be successful;
- the application process;
- what you need to do and provide (including relevant examples); and
- what we will do.

After reading the guidance you should reach one of the following conclusions.

Your conclusion	What you should do
You think you are ready to apply	Please apply through our membership application portal and submit all required documents in one submission (see Section 2 and Section 3).
You have questions about the standard or the application process	Please contact us. Our membership helpdesk can be contacted by telephone on +44 (0)1788 578214 or by email at applications@icheme.org
You want help with deciding whether you are ready to apply	We strongly advise you to seek the help of a mentor. You can find a mentor through your employer, the local IChemE area network member-groups@icheme.org, or our Mentor Match service.

1.2 What it means to be professionally registered (IEng)

Registration as an Incorporated Engineer (IEng) demonstrates, through a peer-review process, that you can apply and maintain current and developing technology, and use sound engineering judgement to deliver safe, effective solutions in your area of practice. Registration is awarded by the Engineering Council, and IChemE is licensed to assess applicants against the Engineering Council standard.

Where you apply for IEng registration through IChemE, you will also be expected to uphold IChemE's Code of Professional Conduct and maintain Continuing Professional Development (CPD).

1.3 Our standard

To be successful, you must demonstrate the competence and commitment requirements for IEng as set out in the Engineering Council document UK-SPEC. For clarity, IChemE assesses the application under the following five areas:

A. Knowledge and understanding

B. Design, development and solving engineering problems

C. Responsibility, management and leadership

D. Communication and interpersonal skills

E. Professional commitment

For IEng applications, the evidence should be strongly grounded in how you apply practical and technical knowledge to deliver engineering work effectively (particularly area B), including appropriate consideration of safety, sustainability, quality, and constraints.

1.4 The application process (overview)

All assessments are carried out by IChemE volunteer professional reviewers who are trained for their roles. Applications are made currently offline.

You must submit your Competence and Commitment (C&C) report and supporting documents in the same submission as any required Technical Biography.

What happens if you submit the wrong combination?

- if a Technical Biography is required but you do not submit it, the application will be returned to you, so you also submit the required Technical Biography;
- if you submit a Technical Biography but it is not required: IChemE staff will provide feedback and your Technical Report won't be assessed.

In any case, if unsure, we would suggest contacting IChemE at applications@icheme.org in order to confirm whether a Technical Biography submission is necessary.

Application steps

1. Prepare your documents offline (Technical Biography if required; C&C; CV; verification; references; ID; qualification evidence).
2. Submit your application offline, including all documents on applications@icheme.org
3. IChemE staff check your submission is complete and confirm whether a Technical Biography is required.
4. If required, your Technical Biography is assessed. If reviewers identify any gaps, they will ask you to submit a Technical Report Questionnaire in order to provide evidence only in the specific questions. Then an interview is arranged.
5. Your C&C is peer-reviewed.
6. If your written evidence is satisfactory, you will attend a Professional Review Interview (PRI).
7. A decision is made and you are informed in writing.

2 Demonstrating underpinning knowledge and understanding (UKU)

2.1 How you can meet the UKU requirement

IChemE must be satisfied that you have the underpinning knowledge and understanding (UKU) on which professional competence can be built. UKU may be demonstrated through one of the following:

- a programme accredited by the IChemE on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as a Chartered Engineer (CEng);
- a programme accredited by the IChemE on behalf of the Engineering Council for the purposes of demonstrating in part the knowledge and understanding required for registration as a Chartered Engineer (CEng);
- a programme accredited by the IChemE on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as an Incorporated Engineer (IEng);
- a combination of qualifications and experience assessed by the IChemE to be equivalent to the above. This normally requires you to complete a Technical Biography (TB) to map your learning and experience against the required outcomes;
- a degree recognised by Engineers Europe or Sydney Accord.

2.2 Checking your qualifications

You can check whether your qualification is accredited or recognised using:

- the Engineering Council's Course Search database;
- the International Engineering Alliance (IEA) qualifications checker; or
- Engineers Europe's database.

Whether you check in advance or simply provide the details in your application, IChemE will confirm the outcome when your application is received.

2.3 Technical Biography (TB)

Where your qualifications do not clearly meet the UKU requirement, or where further evidence is needed, you must complete a Technical Biography (TB). The TB is designed so that you can provide a concise, structured summary of your qualifications and experience in chemical engineering.

The TB allows you to cross-reference the technical learning you have gained through study and workplace experience against specific statements of requirement. Taken together with your qualifications, this enables IChemE to assess whether you meet the UKU requirement.

You may use module evidence from your transcript as part of your TB mapping. For example, if you consider that a specific module meets a specific requirement, you can list these module and map them against these requirements.

Outcome of the Technical Biography assessment

We will send you an email to tell you the outcome of the TB assessment; you should keep the email for future use with any IChemE application process. The assessment of your TB assessment will result in one of the following outcomes.

Outcome	What happens next?
TB shows that you meet the UKU requirements.	We will start assessing your C&C report.
TB review has identified that more detailed evidence is needed to demonstrate educational base requirements.	We will ask you to submit a Technical Report Questionnaire, see below.

Technical Report Questionnaire

The Technical Report Questionnaire (TRQ) is a supplement to the TB which works to the same requirements. If, having reviewed your TB, our assessors require additional evidence to complete their evaluation of your UKU, then we will contact you to invite you to complete a TRQ. We will provide an outline of the specific TRQ sections that you are required to complete. Any sections of the TRQ which you are not specifically asked to complete are deemed to be 'met successfully' by the information you provided in your TB.

Scope of the TB for IEng applicants

For IEng applicants, the TB focuses on Part O and Part A outcomes of a Chartered Chemical Engineer application (see Appendix B).

Evidence you should provide

- certified copies of certificates for each qualification listed;
- official transcripts for each qualification listed (including module titles; module descriptors may be included where available);
- brief, specific evidence of work-based learning where this is needed to demonstrate outcomes not covered by formal study.

How to complete the TB or TRQ if required (practical tips)

- write in the first-person singular (eg 'I calculated...', 'I carried out...');
- focus on what you personally did and what you learned; avoid describing team activity without clarifying your contribution;
- keep the evidence concise: enough detail to demonstrate the learning outcome, but no unnecessary background;
- avoid unexplained acronyms and business jargon.

TB verification

If you include work-based learning evidence, it must be verified by someone who knows the work and can confirm it is a true account. IChemE may contact verifiers.

TB checklist

- have you checked whether your qualifications are accredited/recognised and included supporting evidence?
- have you provided certified certificates for each qualification listed?
- have you provided official transcripts for each qualification listed?
- have you provided concise work-based learning evidence where needed (and arranged verification where applicable)?
- have you kept within any word limits shown in the portal/templates?

3 Assessment of your competence and commitment

Your Competence and Commitment (C&C) report will be peer-reviewed by volunteer professional reviewers.

3.1 If further information is required

If the professional reviewers decide that your C&C requires clarification and/or expansion in one or more areas, IChemE will email you with detailed feedback explaining what changes are required. You will normally have one opportunity to revise the specified sections within a few of weeks.

Revised sections must be re-verified. If your original verifier is unavailable, you may use an alternative verifier provided they are suitable and familiar with the work being verified.

3.2 Professional Review Interview (PRI)

If the professional reviewers determine that your written submission provides sufficient evidence, you will be invited to a Professional Review Interview (PRI) which is a compulsory part of the application process.

Interviews are normally held virtually (eg Microsoft Teams). Guidance for virtual interviews is provided at Appendix D.

During the PRI, the professional reviewers will seek to confirm:

- that the contents of your C&C are an accurate reflection and true account of your training and experience;
- the extent and limits of your responsibility and professional judgement;
- your approach to CPD and maintaining competencies;
- that you will uphold the reputation and interests the engineering profession and the IChemE.

Preparation

- re-read your C&C and be ready to discuss all examples in more depth;
- you may refer to your C&C during the interview, but you must not use search engines or other applications during the interview;
- a mock interview with a mentor or trained reviewer can help you prepare (but does not guarantee the outcome).

3.3 Outcome

The final decision will result in one of the following outcomes:

Outcome	What happens next?
Registration recommended/successful outcome	IChemE will inform you in writing. Where applicable, your registration will be processed and you will receive confirmation of registration.

Unsuccessful outcome	IChemE will provide feedback. You may reapply at a later date once you have addressed the feedback; this will be treated as a new application.

3.4 Further information

If you have questions, please contact our membership team by email at **applications@icheme.org**

Appendix A: Appeal against a Professional Review decision

Appealing the decision

If you have been unsuccessful in your application for election or transfer or for registration, you may appeal on specific grounds. You must tell us that you wish to make an appeal by email at appeals@icheme.org so that we can send you an Appeal Form. You must then submit your appeal in writing using the IChemE Appeal Form and make payment, within two months of your being informed of the decision. Should you make an appeal but do not receive confirmation of receipt by the two-month deadline, please inform IChemE immediately, as appeals made after this cannot be considered.

Grounds for appeal

If your application is unsuccessful, you may make an appeal if, in your opinion:

- there were procedural errors in the handling of the application; and/or
- the Professional Review Interview was not conducted fairly.

The Appeals Panel will not consider any additional evidence you provide during the appeal, regarding your suitability for election or transfer. It is therefore vital that you read and follow the appropriate guidance and include all evidence you wish to be considered as part of your application.

Appeal process

It is imperative that you clearly state the ground(s) for appeal and provide written evidence to demonstrate how, in your opinion, the application was not fairly assessed. One ground is sufficient to make an appeal.

On receipt of the appeal, it will be circulated to the members of the Appeals Panel. The panel members will also have access to all documentation relevant to the application in question including the Competence and Commitment (C&C) Report, the professional reviewer's C&C assessment report(s) and interview report and your referees' statements.

Members of the Appeals Panel will consider the points raised in the appeal form and examine the evidence provided. If necessary, the Chair may seek additional advice and input from non-panel members with expertise appropriate to the matters being considered. The Appeals Panel will reach a conclusion as to the validity of the appeal and the Chair will prepare a written report. If the appeal is upheld, the report will also be passed to the Registration Subcommittee.

Who considers the appeal?

Members of the Appeals Panel consider each appeal. The Appeals Panel is drawn from experienced professional reviewers with detailed knowledge and experience of the membership and qualification process. They do not participate in Standards Panel and Virtual Election Panel meetings and are therefore independent of the election process.

How do I submit an appeal?

Please contact appeals@icheme.org. A member of IChemE staff will provide you with more information and arrange the appeal fee payment. Where the appeal is upheld, the appeal fee is refunded. Where the appeal is not upheld, the fee is not refunded.

How do I submit an appeal?

Please contact **appeals@icheme.org** . A member of IChemE staff will provide you with more information and arrange the appeal fee payment. Where the appeal is upheld, the appeal fee is refunded. Where the appeal is not upheld, the fee is not refunded.

Timeline for appeals

You will be informed in writing of the decision of the Appeals Panel within two months of receipt by IChemE of both the completed appeals form and the appeal fee (whichever is received last).

Appendix B: UKU areas covered in the TRQ (Part O and Part A)

Part O – Underpinning chemical and bio sciences

Your knowledge and understanding of molecular science (chemistry, biology) should be of appropriate depth and breadth to appreciate the scientific and engineering context of chemical engineering, and to support your understanding of future developments.

Part A – Fundamentals of chemical engineering

A1 – Core chemical engineering

Provide evidence of your understanding of core chemical engineering principles and applications, including:

- principles of fluids and solids formation and processing.
- applying these principles to fluid flow, heat transfer, mass transfer and reaction engineering; and analysis of complex systems within a structured approach to safety, health and sustainability.

Your evidence should also demonstrate that you can analyse and model processes at an appropriate scale, across different process types (continuous and batch), time scales (steady and unsteady), and physical scales (molecular to large scale operations).

A2 – Core chemical engineering practice

Provide evidence of practical application of chemical engineering skills (combining theory and experience), for example in operations, projects, consultancy/services, or technology development. Your evidence should demonstrate high standards of Safety, Health and Environment (SH&E) in all aspects of your work.

Typical evidence may include: practical and laboratory skills; knowledge of equipment/process/product characteristics; dealing with technical uncertainty; using technical literature; awareness of intellectual property; and use of appropriate codes of practice and industry standards.

A3 – Chemical engineering design and design practice

Provide evidence of competence in chemical engineering design (system/process/product/plant) including defining problems and constraints, applying creativity and innovation, team-working, and presenting technical information appropriately. Your evidence should demonstrate understanding of fit for purpose, delivery, and ethical/legal requirements to protect safety, health and the environment.

Generic bachelor's level engineering outcomes (Part A)

In addition to the chemical engineering topics above, your TRQ evidence should demonstrate generic engineering outcomes typically expected at this level, including design/innovation, the engineer and society, and engineering practice.

A1 – Design/innovation

Evidence of application of an integrated or systems approach to the solution of complex problems.

A2 – The engineer and society

- identification and analysis of ethical concerns and making reasoned ethical choices informed by professional codes of conduct.
- use of a risk management process to identify, evaluate and mitigate risks (the effects of uncertainty) associated with a project or activity.
- adoption of a holistic and proportionate approach to the mitigation of security risks.
- knowledge and application of an inclusive approach to engineering practice, recognising responsibilities and benefits of supporting equality, diversity and inclusion.

A3 – Engineering practice

- use of practical laboratory and/or workshop skills to investigate complex problems.
- selection and application of appropriate materials, equipment, engineering technologies and processes, recognising their limitations.
- understanding the role of quality management systems and continuous improvement in the context of complex problems.
- knowledge and application of engineering management principles, commercial context, project and change management, and relevant legal matters including intellectual property rights.
- ability to plan and record self-learning and development as the foundation for lifelong learning/CPD.

Appendix C: Complete your C&C report – section-by-section guidance

Completing your C&C: general advice

The C&C asks you to provide evidence of:

- how you apply your knowledge and understanding to practical situations.
- your ability to apply appropriate theoretical and practical methods to design, develop and solve chemical engineering problems.
- your responsibility and contribution to management and leadership.
- your communication and interpersonal skills.
- your personal and professional commitment.

You must:

- **keep to the word limit.** Applications that exceed the limit may be returned for revision. For the Chartered Chemical Engineer application, your C&C must be between 3500 and 4300 words, with each subsection roughly the same length;
- **emphasise your specific actions.** Focus on your responsibilities and contributions in each example. Make it clear what you did and your role in the task;
- **explain why you did what you did.** Use the Context, Action, and Result (CAR) or Situation, Target, Action, Result (STAR) approach to provide clarity. Focus on detailing your actions and their outcomes;
- **assign examples to the correct sections of the C&C.** Ensure your training and experience examples are placed appropriately to showcase your knowledge and competencies;
- **show how you applied chemical engineering or process safety principles.** In Section A for the Chartered application and Sections A and B for the Professional Process Safety Engineer application, demonstrate how you applied either chemical engineering or process safety principles. It is essential to explain why a chemical engineer or process safety expert was needed for the task;
- **provide one main in-depth example per subsection.** Supplement this with one or two brief examples to show breadth of experience while offering depth in your primary example;
- **be concise and clear. Use correct, clear English.** Keep your writing concise across all sections, ensuring your communication is both professional and effective;
- **use bullet points only when appropriate.** Bullet points are useful for clarifying sequences of events or listing related examples, but full sentences are required for other content;
- **minimise abbreviations and acronyms.** Either explain abbreviations/acronyms fully when they first appear or clarify them in your CV;
- **write in the first-person singular.** Clearly state your actions and contributions by writing in the first person ('I did', 'I designed', etc), avoiding passive voice ('it was decided', 'the results were reviewed'...etc);
- **check for consistency.** Ensure your report aligns with your CV and there are no discrepancies between the two (note that the CV is not assessed); and
- **use of Glossary.** You may include a glossary of terms; especially process safety has a range of technical terms which can have different meanings and applications from company to company and industry to industry. It is important that you and the assessors understand how specific terms are used in relation to your application. We would suggest using the whole If you decide to include a glossary of terms to aid understanding of the evidence in your C&C report, it is recommended to include this in your CV.

You must not:

- plagiarise the work of others. For example, from the internet, IChemE website examples, or a colleague's application. Plagiarism is taken seriously by IChemE. This policy applies to existing members of all grades and applicants for chartership. No part of your membership application to IChemE may be plagiarised (eg C&C report, referee reports, CV). Should there be concerns with any of the material you have presented in an application, IChemE will investigate and you will be contacted that may lead to your application being terminated;
- use more words than necessary. They system won't allow to submit applications exceeding the word count or they will be returned for revision;
- use AI to generate the entire report or entire examples. The work should be in your own words although it is reasonable to use AI to rephrase a sentence, for example in order to clarify the English grammar or to help you reduce the word count. Any unethical use of AI, such as generating generic or inaccurate evidence statements that do not detail (or directly relate to) your personal experiences, will be deemed inadmissible. All use of AI in membership/registration applications must be declared;
- write in the third person (singular or plural) or passive voice. This makes your specific role and actions unclear;
- use words like 'we' or 'they'. These can make your contribution unclear and less direct;
- exaggerate your role or its importance. Be honest and accurate about your contributions, as you'll need to support them in your interview;
- spend excessive time explaining the context. Focus more on the actions you performed. The context maybe found in your CV if necessary;
- talk in generalities. Avoid phrases like 'I've been involved in many projects...' or 'I have several examples...' Provide specific examples instead;
- expect the professional reviewer to 'read between the lines'. Be explicit about your experience and competence. Don't leave things to assumption;
- forget to spell-check. Proofread your application for spelling and grammatical errors before submission; or
- have a large imbalance in the length of each subsection. Ensure that each subsection is roughly the same length, maintaining balance throughout the report.

What happens if the professional reviewers request a revision to my C&C report?

The professional reviewers might decide that one or more sections of your C&C report are inadequate and require to be clarified or expanded, in which case you will be informed by email with feedback to explain what changes are required.

To accommodate the requested revision, the word limit can be extended to 5100.

Update the specified sections and resubmit your application

Sections deemed inadequate must be updated within two weeks of receipt of the email request for revision. Failure to do so will mean that we will not be able to progress your application along agreed timelines, and your application will be closed in which case you would need to submit a new application at a future date. In case of extenuating circumstances, please contact applications@icheme.org

If you are asked to update one or more sections of the report, the professional reviewers will provide detailed feedback by email on the clarifications required – please take careful note of this and ensure you address each of their points, as you will only have one opportunity to revise your report. If you do not fully understand the feedback, or need additional information on the changes asked for, please contact applications@icheme.org

You may be required to obtain re-verification of any revised sections. Where the original verifier is unavailable within the timeframe, you may approach an alternative verifier, providing they fulfil the criteria listed in the verification section of this guidance. If you are unable to obtain verification of the revised sections of your C&C report within the required timeframe, please inform IChemE immediately.

If any revised sections of your C&C report are still deemed inadequate, your application will be withdrawn and sent to the Registration Sub-committee who will determine the next step. The most likely outcome if a one or more sections of a revised C&C report are deemed inadequate is that your application will be terminated and you will need to re-apply at a later date. You will be provided with feedback on the reasons why your report was deemed inadequate.

Confidentiality

You must use the C&C report to demonstrate to IChemE that your individual competence meets the required level expected of a Chartered Chemical Engineer. The professional reviewers need to understand the technical aspects of your work and the engineering challenges involved, so while you should be specific about what you did, you should not disclose confidential information contrary to your employer's confidentiality policy. This also applies to the contents of your CV. It is therefore advisable for you to seek your employer's permission to use the examples in your report and CV before submission.

Note that professional reviewers are bound by the IChemE Code of Conduct and Ethics and the Data Protection Act 2018.

Section-by-section guidance and suggested examples

Note: The examples provided above are intended as suggestions to illustrate the type of activities and experiences that could demonstrate competence in sustainable development. Applicants are encouraged to provide their own examples of work or projects that they believe best reflect their experience and alignment with the relevant question. There is no requirement to use these exact examples, and evidence can come from any role, project, or activity that appropriately demonstrates understanding and application of sustainable development principles.

Section A – Evidence of using a combination of general and specialist chemical engineering knowledge to apply existing and emerging technology

A1 – Demonstrate you have maintained and extended a sound theoretical approach to the application of technology in chemical engineering practice

Maintain and continually develop your knowledge to ensure a sound understanding of the application of appropriate technology in the work you undertake in your role. This includes recognising the limits of your own knowledge and skills and taking steps to develop and extend them, particularly in relation to current and emerging technologies relevant to chemical engineering practice.

A key aspect of this process is how you record and evidence your Continuing Professional Development (CPD). Your CPD records should clearly demonstrate a structured approach to identifying development needs, acquiring relevant technical knowledge and skills, and applying newly gained knowledge effectively in your work. This should support the ongoing enhancement of your professional technical competence (note that competence in non-technical areas should be covered in section E4).

Examples of evidence could include the following types of CPD activity:

- formal training related to your role via in-house or external training courses (online or face-to-face);
- developing and maintaining knowledge of current and emerging technologies and best practice relevant to your area of chemical engineering practice, for example by attending or contributing to activities run by IChemE member groups or special interest groups;
- learning and applying new technical knowledge, methods, or tools in the workplace through on-the-job learning;
- reviewing existing procedures, processes, or technologies and identifying or implementing improvements to reflect best practice;
- developing the knowledge and understanding needed to work in a new industry sector, discipline, or role within chemical engineering practice.

If you are logging your CPD either in mycareerpath or your organisation's own development system, extracting the required information may be straightforward.

A2 – Use a sound evidence-based approach to problem-solving and contribute to continuous improvement

Clearly demonstrate how you use a structured, evidence-based approach to investigate and resolve problems encountered in chemical engineering practice, and how you contribute to continuous improvement within your area

of responsibility. This should show how you apply your chemical engineering knowledge and experience to analyse issues, establish priorities, and implement effective corrective or improvement actions.

Your examples should demonstrate how you gather and evaluate relevant information (such as operational data, observations, or established guidance), apply appropriate chemical engineering principles, and use recognised processes or procedures to reach practical solutions. While related disciplines may be involved, the emphasis must be on your own contribution and your application of chemical engineering knowledge in practice.

Awareness of methodologies, following procedures, or entering data into models, spreadsheets, or software tools without explaining how the evidence was interpreted and used to inform decisions is not sufficient. Where established tools or processes are used, you should explain why they were appropriate, how you used the outputs, and how they supported an evidence-based decision.

Provide no more than two examples to allow sufficient depth of explanation. Focus on how you identified the problem, the evidence you used, the steps you took to analyse it, and how you contributed to implementing improvements, keeping background and outcomes brief. You will have the opportunity to expand on context and results during the interview.

Examples must relate to the application of chemical engineering principles and may include, but are not limited to:

- laws of conservation (mass and energy balances)
- fluid flow and hydraulics
- heat and mass transfer
- thermodynamics
- process operation and control
- understanding of process technologies
- interpretation and analysis of operational data

Examples of evidence:

- Applying knowledge and experience to investigate and solve problems arising during engineering tasks and implementing corrective action
    - You may have experience of responding to engineering problems encountered during routine or non-routine work activities. Describe how you identified the problem, gathered and assessed relevant evidence (such as operational data, observations, or test results), and applied your chemical engineering knowledge and experience to determine and implement an appropriate corrective action.

      Focus on the steps you took to investigate the issue and how your actions contributed to resolving it. Emphasis should be placed on your use of established chemical engineering principles, methods, or procedures rather than on novel or highly complex analysis.

      You might consider examples such as:

        - investigating the cause of off-spec product and supporting operational adjustments to restore compliance
        - diagnosing poor equipment performance and contributing to corrective maintenance actions
        - resolving flow, pressure, or temperature deviations in a process system

- Identifying opportunities for improvements and how these have been (or could be) implemented
    - Describe how you identified opportunities for improvement within processes, systems, equipment, or ways of working, and how these improvements were implemented or proposed. This could include incremental improvements that enhance efficiency, reliability, safety, environmental performance, or consistency of operations.

      You should explain how evidence (such as performance data, trends, or observations) informed your recommendations, and what role you played in implementing or supporting the improvement.

      You might consider examples such as:

        - reviewing operating data to identify opportunities for process optimisation
        - proposing improvements to procedures or work instructions based on operational experience
        - contributing to initiatives that reduced downtime, waste, or variability in performance

- Using an established process to analyse issues and establish priorities
    - Describe how you used recognised engineering or organisational processes to analyse issues, assess their significance, and establish priorities for action. This may include the use of formal troubleshooting methods, management of change processes, risk assessments, or continuous improvement frameworks.

      Explain how you followed the process, how you prioritised actions based on evidence and risk, and how this supported effective decision-making and outcomes. If working as part of a team, clearly explain your own contribution, including how you applied your chemical engineering knowledge and worked with others to progress the task.

      You might consider examples such as:

        - using a structured troubleshooting approach to identify the root cause of a recurring process issue
        - contributing to a management of change process to support a process or equipment modification
        - participating in continuous improvement or problem-solving reviews to prioritise engineering actions

Section B – Evidence of your ability to apply appropriate theoretical and practical methods to design, develop, manufacture, construct, commission and recycle chemical engineering processes, systems, services and products

B1 – Identify, review and select techniques, procedures, and methods to undertake engineering tasks

Describe how you identify, review, and select appropriate engineering techniques, procedures, and methods to deliver chemical engineering tasks effectively and efficiently. You should demonstrate how you contribute to planning and defining the technical work required, using established processes, standards, and sound engineering judgement to support successful delivery.

Your submission should show how you apply chemical engineering knowledge and understanding to select suitable approaches, taking account of functional requirements, constraints, and practical considerations such as safety, cost, quality, time, and available resources. You may be working under supervision or as part of a wider team; however, the emphasis must be on your own technical contribution, decision-making, and responsibility for the work you describe.

You should explain how you planned and carried out your own tasks (potentially providing support within larger teams in the design/manufacturing/commissioning projects), how you selected appropriate methods or solutions, and how you ensured the work met technical, safety, and quality requirements. While you may reference project or task coordination activities, your examples must demonstrate the application of chemical engineering principles, techniques, or procedures. Submissions that focus solely on generic coordination or administration, without sufficient technical content, are unlikely to meet the requirements for this section.

Examples of evidence:

- Establishing the engineering steps needed to carry out a task efficiently
    - defining the steps required to validate or optimise a unit operation, such as setting test conditions, acceptance criteria, and data collection methods
    - planning the technical activities needed to implement a process or equipment modification, including preparation, installation, testing, and handover
    - establishing commissioning or verification activities for a process change, following company procedures or recognised standards
    - breaking down a laboratory, pilot-scale, or plant-based task into logical stages and sequencing the work to minimise disruption
    - identifying dependencies between activities and aligning tasks with existing work plans or maintenance schedules

- Identifying the available products or processes needed to undertake an engineering task and establishing a means of identifying the most suitable solution
    - comparing alternative equipment or process options against defined technical criteria such as performance, operating limits, and compatibility
    - evaluating materials of construction for suitability under specific process conditions (eg temperature, pressure, corrosion, or fouling)

- reviewing datasheets, technical literature, or supplier information to assess suitability for a specific application
- selecting an appropriate method, tool, or technique based on operational requirements and constraints
- contributing to option selection by providing technical input and evidence to support recommendations

- Preparing technical specifications
  - preparing duty or performance specifications for process equipment under guidance or using established templates
  - drafting functional specifications for control, monitoring, or automation systems
  - contributing to technical specifications for laboratory, pilot-scale, or production facilities
  - working on various operating conditions, performance requirements, and constraints to ensure equipment or systems are fit for purpose
  - ensuring specifications align with safety, quality, and operational requirements

- Reviewing and comparing responses to the technical aspects of tender invitations
  - reviewing supplier submissions to check compliance with technical and process requirements
  - comparing alternative technical solutions proposed by vendors against defined criteria
  - identifying technical gaps, deviations, or risks in tender responses
  - seeking clarification on technical aspects of supplier proposals where required
  - providing technical input to support selection decisions

- Establishing user requirements for improvements
  - working with operators, users, or stakeholders to capture operational needs and issues
  - translating user needs into clear technical or engineering requirements
  - contributing to the definition of requirements for process, equipment, or system improvements
  - ensuring requirements are practical, achievable, and aligned with operational constraints
  - supporting incremental improvements to safety, reliability, efficiency, or performance

B2 – Contribute to the design and development of engineering solutions

Describe how you contributed to the design and development of chemical engineering solutions, working within an agreed scope or under appropriate supervision. You should demonstrate how you supported the identification and specification of design and development requirements, applied chemical engineering knowledge to evaluate options, and contributed to testing, analysis, and refinement of solutions.

Your submission should show how you used established chemical engineering methods to analyse information, assess operational or technical risks, and support engineering decision-making. While you may not have been responsible for setting the overall design strategy, the emphasis must be on your own technical contribution, the quality of your analysis, and how your work informed or supported the final solution.

You should clearly explain how you ensured that the solutions you contributed to were safe, practical, and fit for purpose, taking account of constraints such as cost, quality, safety, reliability, accessibility, environmental impact, and – where relevant – security (including cyber security) and intellectual property considerations.

If you work in an academic or research environment, you should explain how you contributed to defining the scope, methods, or testing activities within a wider research or development programme.

Examples of evidence:

- Contributing to the identification and specification of design and development requirements for engineering products, processes, systems, or services
  - contributing to the definition of operating envelopes or performance requirements for a process or item of equipment

- supporting the preparation of functional, technical, or process specifications
- assisting in translating operational needs or regulatory requirements into engineering design criteria
- contributing to the definition of testing, validation, or acceptance criteria for new or modified systems
- supporting design teams by clarifying technical constraints or assumptions

- Identifying operational risks and evaluating possible engineering solutions
  - evaluating alternative process or equipment options and identifying associated technical or operational risks
  - contributing to risk assessments for process changes, equipment modifications, or new installations
  - assessing the impact of design choices on safety, reliability, operability, or maintainability
  - comparing options using defined criteria such as performance, cost, environmental impact, or ease of implementation
  - supporting recommendations by presenting technical evidence and analysis

- Collecting and analysing results
  - analysing operating or process data to assess performance against design or operational requirements
  - interpreting laboratory, pilot-scale, or plant trial results to inform design refinement
  - reviewing test data to identify trends, deviations, or areas for improvement
  - comparing predicted and actual performance to validate design assumptions
  - summarising findings clearly to support engineering decisions or next steps

- Carrying out necessary tests
  - supporting laboratory, bench-scale, or pilot-scale testing of process or equipment changes
  - contributing to commissioning, performance testing, or acceptance testing activities
  - carrying out simulations, calculations, or structured evaluations to assess design behaviour
  - assisting with test planning, including defining objectives, methods, and success criteria
  - feeding test results back into the design or development process to support refinement

B3 – Contribute to the Implementation of design solutions for equipment or processes and their safety evaluation

In this section, focus on demonstrating your experience in implementing or supported engineering design solutions for chemical engineering equipment or processes, and your contribution to evaluating and maintaining their safety and sustainability. Your examples should primarily relate to process safety, environmental protection, and sustainable operation within chemical engineering activities. Examples focused solely on occupational health and safety should be avoided, as these are covered under section E2.

You should show awareness of safety, environmental, and sustainability considerations and explain how these influenced the way you implemented or supported design solutions. This includes identifying hazards, recognising constraints, and contributing to risk control or mitigation measures during implementation.

Provide clear examples of how you contributed to the safe implementation of new or modified equipment or processes at laboratory, pilot, or operational scale. You should explain your role in ensuring that safety, environmental, and operational requirements were met, and how you applied chemical engineering principles, company procedures, and relevant legislation, codes, or standards.

If you work across different sites or jurisdictions, you may also describe how you applied consistent engineering judgement while working within differing regulatory or compliance frameworks.

Examples of evidence:

- Identifying the resources required for implementation
  - identifying equipment, materials, or services required to implement a process or equipment modification

- contributing to implementation or commissioning plans by identifying technical resource or capability requirements
- supporting preparation for installation or commissioning activities by ensuring required documentation or procedures were in place
- identifying training or competency needs related to new or modified equipment or processes
- supporting access to specialist technical or safety support where required

- Implementing design solutions, taking account of critical constraints, including due concern for safety and sustainability
  - implementing or supporting process changes to ensure emissions, discharges, or waste streams met required standards
  - supporting the installation or modification of equipment in safety-critical or environmentally sensitive environments
  - applying operating procedures, permit systems, or controls to manage safety risks during implementation
  - ensuring implementation activities complied with site-specific, regulatory, or environmental requirements
  - contributing to sustainable implementation by minimising waste, energy use, or environmental impact

- Identifying problems during implementation and taking corrective action
  - identifying installation, commissioning, or start-up issues and contributing to corrective actions
  - responding to unexpected process behaviour during initial operation or trials
  - identifying deviations from design intent and supporting resolution to restore safe operation
  - contributing to investigations of safety, operability, or environmental issues arising during implementation
  - supporting the modification of procedures or controls to address identified problems

- Contributing to recommendations for improvement and actively learning from feedback on results
  - contributing to post-implementation, post-commissioning, or operational reviews
  - helping to capture lessons learned related to safety, operability, or environmental performance
  - supporting updates to procedures, specifications, or design documentation based on feedback
  - sharing learning with colleagues to improve future implementations or designs
  - applying lessons learned to subsequent tasks, projects, or operational improvements

Section C – Evidence of your ability to support technical and commercial management

C1 – Plan the work and resources needed to enable effective implementation of engineering tasks and projects

While this topic is related to B1, the focus here is on planning engineering tasks or projects and identifying the resources needed to deliver them effectively, rather than on detailed technical execution. You should demonstrate how you planned or supported a specific engineering task or project, taking account of priorities, constraints, risks, budgets, and resource availability to achieve the required outcome.

Your examples should show how you applied structured planning, coordination, and organisational skills within a chemical engineering context. You may have worked under supervision or as part of a wider team; however, the emphasis should be on your contribution to planning, risk management, and resource coordination, rather than solely on carrying out technical tasks.

Examples of evidence:

- Identifying factors affecting the project implementation
  - identifying factors affecting commissioning or implementation of a plant modification

- considering safety and operational constraints when planning a process change
- evaluating sustainability or environmental considerations during project planning
- assessing regulatory and site-specific requirements to inform planning
- identifying constraints related to budget, schedule, or resource availability

- Carrying out holistic and systematic risk identification, assessment, and management
  - contributing to risk assessments for plant modifications or equipment replacement
  - identifying hazards and mitigation measures for implementation activities
  - supporting risk reviews for projects involving process or operational change
  - evaluating technical, operational, and safety risks to inform project planning
  - reviewing risk control measures to ensure they are feasible and effective

- Preparing and agreeing implementation plans and method statements
  - preparing or reviewing method statements for installation or commissioning activities
  - contributing to implementation plans for process or equipment upgrades
  - supporting preparation of project plans in response to internal or external requirements
  - sequencing activities and defining responsibilities to ensure safe and efficient execution
  - aligning plans with company procedures, standards, or regulatory requirements

- Securing the necessary resources and confirming roles in a project team
  - supporting resource planning for an engineering task or project
  - confirming roles and responsibilities within a project team
  - identifying training or competency requirements for implementation
  - ensuring availability of specialist support or equipment needed for the project
  - coordinating resource allocation to meet project timelines

- Applying the necessary contractual arrangements with other stakeholders
  - supporting procurement or vendor engagement activities
  - liaising with contractors or suppliers to clarify technical requirements
  - coordinating with regulatory bodies to support approvals or permits
  - ensuring technical arrangements comply with project and regulatory requirements
  - contributing to agreements with clients or stakeholders to facilitate delivery

C2 – Manage (organise, direct, control or contribute to), programme or schedule, budget and resource elements of engineering tasks or projects including commercial considerations

In this section, demonstrate how you have supported, managed or controlled engineering tasks or projects, ensuring delivery to agreed quality standards, programme, and budget, and in compliance with relevant legal and statutory requirements. You should show how you applied appropriate management systems, coordinated activities, monitored performance, and took corrective action where required.

Your examples should include consideration of commercial factors, such as cost control, procurement, efficient use of resources, and contractual or supplier arrangements. While you may not have held overall commercial responsibility, the emphasis should be on your contribution to managing cost, quality, time, and resources within an agreed framework.

Examples of evidence:

- Operating appropriate management systems
  - using risk registers, action trackers, or issue logs to manage project risks

- contributing to environmental, safety, or quality management systems
- supporting the implementation or maintenance of project control systems
- applying management procedures to monitor progress and resources
- using reporting tools to support decision-making and performance tracking

- Working to agreed quality standards, programme, and budget, within legal and statutory requirements
  - delivering engineering work to agreed specifications and schedules
  - supporting procurement or installation activities while controlling costs
  - ensuring compliance with regulatory or quality requirements during execution
  - balancing competing demands such as time, cost, and quality
  - monitoring work progress to identify potential issues early

- Managing or contributing to various work teams and coordinating project activities
  - coordinating activities between engineering, operations, and contractors
  - supervising or supporting junior staff
  - contributing to team meetings to plan and track work
  - allocating or managing work and responsibilities effectively to meet deadlines
  - facilitating communication between stakeholders to ensure alignment

- Identifying variations from quality standards, programme, or budgets, and taking corrective action
  - operating with schedule slippage and supporting re-planning activities
  - recognising quality issues and contributing to corrective measures
  - identifying cost pressures and supporting actions to control expenditure
  - monitoring performance against agreed KPIs and reporting deviations
  - implementing corrective measures to maintain project objectives

- Evaluating performance and recommending improvements
  - contributing to post-task or post-project reviews
  - supporting improvements to processes, controls, or ways of working
  - recommending changes to improve efficiency, quality, or cost control
  - working with outcomes to identify lessons learned for future projects
  - sharing feedback with colleagues to enhance team performance

C3 – Manage the input of others, combining ideas and contributions of different people and disciplines into your own work and assisting others to meet changing technical and management needs

Your examples should demonstrate how you agreed objectives, organised your work, and combined contributions from different people or disciplines to achieve successful outcomes.

You should show how you supported others in meeting technical and management needs by providing direction, guidance, and feedback. While formal line management is not required, the emphasis should be on your role in coordinating work, supporting team effectiveness, and applying good people-management practices within an engineering context.

Examples of evidence:

- Agreeing objectives and work plans with teams and individuals
  - supporting, organising and coordinating work activities for a small engineering team

- agreeing task objectives and timelines with colleagues or contractors
- planning work programmes for defined engineering tasks
- clarifying priorities and expectations to ensure alignment with project requirements
- defining or operating with responsibilities within a multi-disciplinary team

- Reinforcing team commitment to professional standards
  - contributing to the adherence to safety, quality, or technical standards within a team
  - supporting compliance with procedures during engineering or operational activities
  - helping colleagues understand and apply relevant standards or best practices
  - monitoring work to identify deviations and supporting corrective actions
  - promoting safe working practices and professional conduct

- Leading and supporting team and individual development
  - providing guidance or mentoring junior engineers or technical staff
  - supporting colleagues in learning new tools, systems, or processes
  - contributing to training or knowledge-sharing activities
  - coaching team members to improve technical or operational skills
  - facilitating professional development aligned with project needs

- Assessing team and individual performance and providing feedback
  - providing feedback following engineering or operational activities
  - contributing to post-task or post-project reviews
  - supporting performance discussions to improve future outcomes
  - evaluating strengths and areas for improvement to guide development
  - recognising achievements and promoting positive team behaviours

- Seeking input from other teams or specialists where needed and managing the relationship
  - coordinating with other engineering disciplines to resolve technical issues
  - seeking specialist advice to inform engineering decisions
  - working with interfaces between teams to support task delivery
  - facilitating collaboration with operations, maintenance, quality, or external partners
  - ensuring clear communication and alignment across stakeholders

C4 – Take an active role in continuous quality improvement

Demonstrate how you actively apply quality management principles and contribute to improving processes, practices, or outputs in your engineering work. You should show how you ensure that work – both your own and that of colleagues – is completed to a recognised standard, and how you contribute to identifying opportunities for improvement.

Provide examples that highlight your practical application of quality standards, monitoring of operations, evaluation of outcomes, and sharing of lessons learned to support continuous improvement in your team or organisation. Focus on specific instances, not general statements, and emphasise how your actions improve quality, efficiency, or compliance.

Examples of evidence:

- Ensuring the application of quality management principles by team members and colleagues
  - explaining the company's quality management system to new starters or colleagues

- reviewing work outputs to ensure they meet documented procedures and quality standards
- supporting team members in following operational or project-specific quality procedures
- helping colleagues understand and apply safety, environmental, or technical standards
- mentoring or guiding others to maintain consistency and compliance

- Managing operations to maintain quality standards (eg, ISO 9000, EQFM)
  - implementing structured checks to ensure calculations, designs, or reports comply with procedures
  - monitoring compliance with ISO 9001 or other relevant standards in project tasks
  - assisting in internal audits or reviews to maintain operational quality
  - supporting colleagues in maintaining competence and adhering to quality expectations

- Applying process controls to maintain output consistency and reliability
  - operating within or evaluating projects and making recommendations for improvement
  - operating or evaluating a process modification and suggesting improvements
  - working on project delivery against quality, time, or cost targets and proposing corrective actions
  - conducting analysis of an operational issue and recommending process improvements
  - participating in post-task reviews to identify lessons learned
  - suggesting actionable recommendations to enhance efficiency or performance

- Implementing and sharing the results of lessons learned
  - sharing feedback from a completed task to prevent recurrence of errors
  - documenting lessons learned from equipment testing or commissioning activities and communicating them to the team
  - applying lessons from previous projects to improve the quality or efficiency of ongoing tasks
  - supporting colleagues in implementing process improvements based on past experience
  - helping embed continuous improvement practices within the team or department

Section D – Evidence of your effective communication and interpersonal skills

D1 – Communicate effectively with others, at all levels, in English

Give evidence of how you communicate clearly and appropriately in English to build, manage, and sustain professional relationships. Your examples should demonstrate effective interpersonal and leadership skills, including delegation, training, and team coordination.

You should explain why the communication techniques used were appropriate to the situation and how they contributed to achieving successful outcomes. Consider interactions with colleagues, managers, clients, suppliers, or other stakeholders.

Examples of evidence:

- Preparing communications, documents, and reports on technical matters
  - preparing or supporting the development of written reports, process descriptions, or technical proposals for project teams or clients
  - developing or modifying process flow diagrams (PFDs) or P&IDs for a process system.
  - writing any specifications or guidance documents that ensured compliance with operational or regulatory requirements
  - drafting internal technical memos or summaries to support decision-making and project coordination

- Contributing to, chairing, and recording meetings and discussions
  - leading or a significant contributing member of a safety or technical review meeting
  - chairing or actively partaking in a cross-functional project meeting to resolve integration challenges
  - recording discussions and follow-up actions during workshops or project meetings
  - facilitating team meetings to ensure clarity, accountability, and alignment of objectives

- Exchanging information and providing advice to technical and non-technical colleagues
  - explaining process changes to production personnel or non-engineering staff to ensure smooth implementation
  - providing input to management on technical matters to support investment or operational decisions
  - providing direction or clarifications to peers or junior staff to enable effective task completion
  - sharing knowledge to support problem-solving and task efficiency across the team

- Engaging or interacting with professional networks
  - being active member of the IChemE or similar professional body
  - participating in STEM outreach activities to promote science or chemical engineering in schools or universities
  - presenting within work or at conferences/networking events to share insights and build professional relationships
  - contributing to webinars, online forums, or industry discussion groups to exchange knowledge

D2 – Clearly present and discuss , technical, production and design issues with justifications, and conclusions both orally and in writing

Give evidence of how you communicate ideas, plans, facts, and technical data to professional and non-professional audiences. Your examples should demonstrate adapting the style, content, and format to suit the audience and purpose.

You should explain how your communication enabled informed decision-making, alignment of objectives, or stakeholder engagement.

Examples of evidence:

- Preparing and contributing to technical papers or publications
  - writing or providing any input to a technical paper for a seminar or conference
  - preparing collaborative reports on sustainable process design or plant optimisation
  - documenting project or research outcomes to support technical or operational decision-making

- Preparing and delivering presentations on strategic or technical matters
  - communicating project milestones, risk mitigation strategies, or alternative design options to stakeholders
  - communicating technical briefings to management to inform decision-making
  - actively participating in discussions during project review meetings or industry workshops
  - adapting presentations to suit audiences such as peers, clients, or regulators

- Preparing bids, proposals, or feasibility studies
  - partaking or preparing a scope of work for a plant upgrade or process modification
  - supporting a sales presentation by detailing potential technical solutions

- preparing a feasibility study that considers technical, financial, and environmental factors
- contributing to evaluation of technical, operational, and commercial options for projects

- Identifying, agreeing, and leading work towards collective goals
  - partaking in a cross-functional team to develop a new process scheme or operational strategy
  - facilitating collaboration between R&D and production teams for process scale-up
  - working with internal and external stakeholders to achieve project milestones or implement energy-saving initiatives
  - ensuring communication aligns with objectives and supports successful project delivery

D3 – Demonstrate personal and social skills and awareness of diversity and inclusion issues

Give evidence of how you apply personal and social skills when interacting with others in your day-to-day work. Your examples should demonstrate how you manage team challenges, resolve conflicts, adapt your communication style, and build positive working relationships.

You should also show awareness of diversity and inclusion, including adapting your approach with people from different cultures, backgrounds, or experiences. While formal line management is not required, the emphasis is on your personal and social effectiveness in professional contexts and how this supports collective goals.

Examples of evidence:

- Knowing and managing own emotions, strengths, and weaknesses
  - seeking advice from a senior staff (engineer) when facing an unfamiliar technology
  - managing stress during a high-pressure project while keeping the team informed
  - raising a safety concern even when others disagreed, showing confidence and professional integrity
  - reflecting on personal strengths and limits to allocate tasks effectively

- Being confident and flexible in dealing with new and changing interpersonal situations
  - facilitating a discussion to ensure all team members contribute, managing dominant voices
  - adjusting communication during cross-cultural collaboration to improve understanding and respect
  - adapting to shifting roles within a project team without loss of performance or motivation
  - modifying approaches to resolve conflicts or challenges as they arise

- Identifying, agreeing, and working towards collective goals
  - preparing or contributing to a project plan that accounts for all team interfaces and dependencies
  - leading or partaking in brainstorming sessions to define deliverables and responsibilities
  - development of strategies across departments to achieve aligned business or project objectives
  - clarifying expectations and roles to ensure the team works effectively towards common goals

- Creating, maintaining, and enhancing productive working relationships, and resolving conflicts
  - mediating conflicts between colleagues to reach mutually acceptable solutions
  - establishing productive relationships with teams in other offices or regions
  - encouraging open communication to prevent misunderstandings and strengthen cohesion
  - supporting collaboration between individuals with differing priorities or perspectives

- Being supportive of the needs and concerns of others, especially where this relates to diversity and inclusion
  - planning meetings or team-building activities considerate of cultural or personal preferences

- actively seeking input from all team members during important decisions
- supporting team members from diverse backgrounds to share ideas in a safe and respectful environment
- promoting inclusion by considering accessibility and individual needs when assigning tasks

Section E – Evidence of your personal commitment to professional standards, recognising obligations to society, the profession and the environment

E1 – Understand and comply with relevant codes of conduct

Give evidence of how you understand and apply professional standards and codes of conduct in your work. Your examples should demonstrate that you follow organisational, technical, and professional rules, and that you act responsibly, ethically, and in line with regulations.

You should show how you ensure that your own work – and the work you contribute to – is compliant with recognised standards.

Examples of evidence:

- Demonstrating compliance with your Licensee's or organisation's Code of Professional Conduct
  - following company procedures and quality standards in daily engineering tasks
  - reporting unsafe practices or breaches of company policy to a supervisor
  - acting honestly and transparently in technical reporting and data collection
  - adhering to organisational ethics when making operational or technical decisions

- Identifying aspects of the Code particularly relevant to your role
  - ensuring compliance with environmental, health, or safety regulations relevant to your tasks
  - checking that laboratory or plant procedures align with company and regulatory requirements
  - applying guidance from ISO, REACH, or other technical standards in operational work
  - recognising which organisational or professional rules apply to specific engineering activities

- Managing work within all relevant legislative and regulatory frameworks, including social and employment legislation
  - following health and safety regulations during routine plant operations
  - applying company HR policies when supporting junior colleagues or contractors
  - ensuring that equipment or process modifications comply with environmental or safety legislation
  - keeping up to date with statutory requirements and integrating them into engineering practice

E2 – Understand in depth the safety implications of your role and manage, apply, and improve safe systems of work

Give evidence of how you apply health and safety principles in your engineering role. Your examples should show practical knowledge of occupational safety, risk assessment, and safe systems of work.

You should explain how you help maintain a safe environment, follow regulations, and contribute to improving safety practices within your area of responsibility.

Examples of evidence:

- Identifying and taking responsibility for your own obligations for health, safety, and welfare issues
  - conducting daily safety checks on equipment or work areas
  - reporting hazards or unsafe conditions to the relevant staff
  - ensuring that you and others follow and on a continuous basis review and update all safe operating procedures
  - promoting a culture of personal accountability for safety within the team

- Managing systems that satisfy health, safety, and welfare requirements
  - following company safety management systems during laboratory or plant work
  - using relevant permit-to-work procedures during maintenance or shutdown activities
  - monitoring and supporting compliance with all safety procedures
  - ensuring the implementation of operational controls to maintain safe working conditions

- Developing and implementing appropriate hazard identification and risk management systems and culture
  - participating in risk assessments for routine tasks or minor process changes
  - identifying potential hazards and suggesting practical controls
  - documenting safety observations and recommending improvements to procedures
  - contributing to a proactive safety culture by sharing lessons learned

- Managing, evaluating, and improving these systems
  - reviewing and updating standard operating procedures for safe operation of equipment
  - supporting improvements in safety signage or safety checks
  - reporting near-misses and lessons learned to relevant staff , promoting continuous improvement
  - monitoring effectiveness of safety practices and suggesting enhancements

- Applying a sound knowledge of health and safety legislation
  - following HASAWA, CDM regulations, or company safety policies in daily work
  - ensuring laboratory or process operations comply with COSHH, environmental, or local safety regulations
  - checking that contractors and colleagues follow legal and procedural safety requirements
  - integrating legal and regulatory requirements into daily engineering decisions

E3 – Understand the principles of sustainable development and apply them in your work

Give evidence of how you apply sustainability principles in your engineering role. Your examples should show practical awareness of environmental, social, and economic impacts, and how you apply chemical engineering knowledge to minimise waste, reduce energy use, or mitigate environmental risks in operational or project work.

You should explain how you consider sustainability in day-to-day engineering tasks and contribute to meeting regulatory and organisational requirements.

Examples of evidence:

- Operating and acting responsibly, taking account of the need to progress environmental, social, and economic outcomes simultaneously
  - providing input and supporting manufacturing changes which implement progressive reductions in the carbon footprint and energy consumption
  - supporting a manufacturing culture which prioritises process conditions which reduce energy or water use
  - promoting improvements to processes or practices that reduce environmental impact while maintaining production efficiency
  - prioritising environmental and social production factors within the constraints of financial factors in operational decision-making

- Providing products and services which maintain and enhance the quality of the environment and community, and meet financial objectives
  - implementing waste segregation or recycling procedures within a plant

- promoting in energy efficiency improvements for equipment or processes
- implementing operational instructions that advance compliance with environmental permits
- advocating initiatives that benefit both operational performance and environmental outcomes

- Recognising how sustainability principles can be applied in your day-to-day work
  - analysing energy and resource consumption trends to identify inefficiencies and implementing targeted improvements, delivering measurable reductions in energy, water usage, or carbon emissions
  - optimising process parameters and material usage through data-driven evaluation, balancing operational performance with minimisation of waste, emissions, and environmental impact
  - establishing and verifying robust systems for the safe handling, storage, and lifecycle management of hazardous materials, reducing environmental risk and ensuring alignment with best practice and regulatory expectations
  - integrating sustainability considerations into routine engineering and operational decision-making, evaluating trade-offs between environmental, technical, and commercial factors to support more sustainable outcomes

- Understanding and securing stakeholder involvement in sustainable development
  - proactively identifying environmental risks and leading the development of corrective and preventative action plans, engaging relevant stakeholders to ensure timely implementation and long-term compliance
  - planning, coordinating, and facilitating environmental audits or inspections, working with cross-functional teams to address findings, drive continuous improvement, and embed best practice across operations
  - leading or contributing to the development and assurance of environmental compliance documentation, ensuring accuracy, completeness, and alignment with regulatory requirements while liaising with internal and external stakeholders
  - influencing and coordinating colleagues, contractors, and suppliers to meet and exceed environmental obligations, establishing clear expectations, monitoring performance, and driving accountability for sustainable outcomes

- Using resources efficiently and effectively in all activities
  - developing and refining operational procedures to optimise energy and resource efficiency, using performance data to drive continuous improvement beyond standard operating practices
  - implementing condition-based and predictive maintenance strategies to minimise resource losses, improving equipment reliability while reducing leaks, waste, and unplanned downtime
  - analysing material utilisation and process capability to reduce scrap and off-spec production, introducing process improvements that enhance yield and lower environmental impact
  - driving resource efficiency initiatives that balance operational performance, cost, and environmental outcomes, embedding sustainable resource management into day-to-day engineering decisions

- Taking action to minimise environmental impact in your area of responsibility
  - implementing and continuously improving environmental management controls to proactively prevent spills, emissions, and environmental incidents, using risk assessments and performance data to strengthen mitigation measures
  - managing waste streams through analysis, segregation strategies, and optimisation of disposal routes, reducing environmental impact while ensuring full regulatory compliance and cost efficiency
  - identifying, justifying, and delivering targeted process improvements to reduce emissions, noise, and environmental impact, ensuring solutions are technically robust and operationally sustainable
  - taking responsibility for compliance with environmental permits and standards, interpreting requirements, coordinating actions across teams, and implementing systems to ensure ongoing adherence and audit readiness

E4 – Carry out and record the Continuing Professional Development (CPD) necessary to maintain and enhance competence in your own area of practice

Give evidence of your ongoing commitment to CPD. Your examples should demonstrate how you identify your development needs, plan appropriate activities, carry them out, and evaluate their impact on your professional competence.

You should show that your CPD is structured, relevant, and contributes to maintaining and enhancing your technical, practical, and personal skills.

Examples of evidence:

- Undertaking reviews of your own development needs
  - using self-assessment or reflective practice to identify areas for improvement in process operation, plant safety, or technical software skills
  - discussing development needs with a line manager or mentor during regular appraisals
  - reviewing past projects or tasks to identify technical or professional skills that could be strengthened
  - recognising gaps in knowledge or practical experience relevant to current or future responsibilities

- Planning how to meet personal objectives
  - creating a personal CPD plan that includes attending workshops, online courses, or training sessions relevant to your role
  - scheduling time to complete technical reading, software training, or laboratory practice to enhance skills
  - setting clear objectives, such as improving knowledge of process control systems or safety management procedures
  - prioritising objectives and organising resources to ensure CPD activities are achievable and relevant

- Carrying out and recording planned and unplanned CPD activities
  - completing a training course on a new chemical process software and recording the learning outcomes
  - attending a safety workshop or technical seminar outside of planned CPD, and reflecting on its applicability to your work
  - participating in short secondments or shadowing colleagues in other teams to gain practical experience
  - taking advantage of spontaneous learning opportunities that enhance knowledge or competence

- Maintaining evidence of competence development
  - using a CPD log or online platform to document courses, workshops, on-the-job training, and reflective notes
  - keeping records of skills acquired, technical reports completed, or lessons learned during projects
  - linking CPD activities to personal learning objectives to show relevance to your professional role
  - ensuring documentation demonstrates ongoing competence and readiness to practise safely and effectively

- Evaluating CPD outcomes against plans made
  - comparing achieved skills and knowledge with the original objectives in your CPD plan
  - reflecting on whether new skills have improved work performance or efficiency
  - adjusting future CPD objectives based on lessons learned from completed activities
  - using evaluation to inform continuous improvement in personal and professional development

- Assisting others with their own CPD
  - mentoring a junior engineer on technical skills, safety practices, or software use
  - providing advice on relevant training courses or workshops for colleagues

- sharing practical lessons learned from projects to help others improve their skills
- supporting colleagues in identifying and planning development activities to maintain competence

E5 – Understand the ethical issues that may arise in their role and carry out their responsibilities in an ethical manner

Provide evidence of your awareness of ethical issues in engineering practice and how you respond to them appropriately. Your examples should show that you act with honesty, integrity, and professionalism while applying ethical principles in day-to-day work situations.

You should demonstrate understanding of both the Engineering Council's Statement of Ethical Principles and any relevant organisational or company standards.

Examples of evidence:

- Understanding the ethical issues that you may encounter in your role
  - identifying potential safety or compliance risks and reporting them, even if it may delay a project
  - recognising situations involving commercial or personal confidentiality and handling information responsibly
  - being aware of potential conflicts of interest when reviewing bids, supplier proposals, or operational decisions
  - considering environmental, social, or community impacts of routine engineering activities

- Giving an example of where you have applied ethical principles as described in the Statement of Ethical Principles
  - stopping unsafe work on a laboratory or plant operation and raising the issue with supervisors, following safety procedures
  - reporting a near-miss incident or potential hazard that others may have overlooked, ensuring accurate documentation
  - ensuring accurate measurements, calculations, or records in laboratory or operational reports, demonstrating accuracy and rigour
  - communicating safety or operational concerns clearly to colleagues or managers, ensuring the public and workforce are protected

- Giving an example of where you have applied or upheld ethical principles as defined by your organisation or company
  - declaring a conflict of interest when asked to review or approve work from a related party
  - refusing to approve an expense or request that does not comply with company policy, and explaining the rationale professionally
  - supporting inclusion, diversity, and respectful behaviour within your team, ensuring equitable treatment of colleagues and collaborators
  - reporting environmental or regulatory concerns in line with organisational procedures, even if it requires challenging routine practices

Appendix D: Virtual interviews

Before the interview

- check hardware, browser/app compatibility and bandwidth well in advance.
- if concerned about bandwidth or firewalls, request a test session via applications@icheme.org
- choose a quiet location with no distractions and allow contingency time in your diary.

Joining the interview

- switch off/silence mobile phones and place out of reach.
- close all applications not required. Use of search engines or other applications during the interview is not permitted.
- use a headset with an inbuilt microphone where possible.
- log in at the allotted time (not earlier).

During the interview

- video and audio are expected throughout. You must be visible on video for identity and integrity checks.
- if audio/video issues arise, they should be declared and agreed before starting. The interview may be paused or rescheduled if necessary.
- speak slowly and clearly; allow for minor time lapses and indicate clearly when you have finished a response.

After the interview

- once the interview is complete, please leave the meeting promptly to allow the professional reviewers to conduct their post-interview discussion.

Contact us for further information

UK

+44 (0)1788 578214

membersupport@icheme.org

Australia

+61 (0)3 9642 4494

austmembers@icheme.org

Malaysia

malaysianmembers@icheme.org

New Zealand

+64 (0)4 473 4398

nzmembers@icheme.org

www.icheme.org

LC 0113_26