

Technical Biography guidance

Purpose of the Technical Biography

The Technical Biography form is designed to allow you to provide a concise, structured summary of your qualifications and experience in chemical engineering, for initial ICP assessment of:

- a) your technical qualifications, and
- b) your understanding of chemical engineering gained through experience

Please note that only an outline summary of the two areas above are required. The total word count for the technical experience section should not exceed a total of 1000 words. The information should be succinct but detailed enough to allow ICP Reviewers to identify areas where they need greater detail (via a Technical Report Questionnaire).

Your application

You must be in IChemE membership before you apply through Individual Case Procedure (ICP) and remain in membership throughout the process.

When entering the ICP you will be required to provide the following:

1. Personal and current employment details: name, address, current employer etc.
2. Academic details: degree certificate/s and transcripts etc.

Please attach the official course transcripts, which should include title of degree, dates taken, your name, and the subjects taken to verify the degree. Any documentation that summarises the learning outcomes from the course, if available, is extremely helpful.

For PhD: attach the thesis/abstract summary.

For EngD: attach the thesis summary plus course module list and learning outcomes.

3. Experience: complete a summary of examples in chronological order of technical experience gained in the workplace which cover gaps in the knowledge and understanding not covered by your academic qualifications.
4. Verifiers (see below): details of those who can verify aspects of your application, if required.
5. Data protection: provide your IChemE communication preferences.

Completing the Technical Biography

- list your academic qualifications clearly and with dates and institutions
- list your professional skills and background clearly and concisely
- avoid business jargon and acronyms. The ICP reviewers may not work in the same field as you
- only mention the work you have personally completed - don't include work done by others
- write in the first person singular: 'I wrote', 'I presented'
- explain what you have learnt from employment experience
- only include activities relevant to chemical engineering. Activities such as captain of your local football team or having a cycling hobby should not be included.

Note: the total word count for the technical experience section should not exceed 1000 words.

If you have an IChemE accredited degree at B-Standard (bachelor's level) or a FEANI or Washington Accord accredited degree, you do not need to provide any evidence for Part O or Part A (see table below) in the 'technical experience' section as you have already fully met the requirements for this section.

Also, if you have an IChemE accredited degree at F-Standard (master's level) you do not need to provide any evidence for Part B (see table below) in the 'technical experience' section as you have already fully met the requirements for this section.

All copies of certificates submitted as part of your application need to be certified. Also, any documents not written in English may need to be translated. Further information can be found at www.icheme.org/certificate-validation.

Verifiers

Verifiers are required to provide verification of any work-based learning. They should have sufficient knowledge of your work to verify your application evidence. Verifiers should ideally be a Chartered Engineer/Scientist and in a position of authority. A verification form will be provided for each of your verifiers to complete and send back to us directly.

Application and assessment process

Once you have uploaded the required information (outlined above) your application will follow the ICP assessment process. Your application will be peer-reviewed by ICP Reviewers who are members of IChemE. The Individual Case Procedure Panel (ICP Panel) oversees the reviewers and the review process to ensure that the standards are correctly and consistently applied.

Example	Employer and Job Title	Dates of experience (start-finish)	<p>Examples of technical experience gained in the workplace</p> <p>Please add a brief summary (could use bullet points) of examples of technical experience gained in the workplace to cover gaps from academic background/areas not covered by your degree. Use the notes section at the end of this form if you need to add any relevant details.</p>	<p>Cross-reference Technical Biography guidance numbers with experience covered</p> <p>(eg Part O, A1, A2, A3 or B)</p>	Office use: verified?
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The right-hand column in the Technical Experience section of the Technical Biography application form (above) requires you to cross reference your experience examples against the topics on the following pages:

Part O. Underpinning chemical and bio sciences

Understanding of science

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

1. Core chemical engineering

You need to provide evidence (eg formal qualification or experiential learning) of your understanding of core chemical engineering. Core chemical engineering comprises the main principles and applications of chemical engineering, namely:

- understanding of the principles of fluids and solids formation and processing
- proficiency in applying these principles to problems involving fluid flow, heat transfer, mass transfer and reaction engineering
- ability to apply principles to the analysis of complex systems within a structured approach to safety, health and sustainability.

You should give evidence of an understanding of the broad range of applications of the principles and your ability to analyse, model quantitatively and synthesise at the appropriate scale. The applications should include:

- different types of process, including continuous and batch, chemical processes and bioprocesses
- different time scales: short and long periods, steady and unsteady state
- different physical scales: from molecular level to large scale continuous operations.

You should demonstrate the knowledge and ability to handle broader implications of work as a chemical engineer. These include sustainability aspects, process safety, health, environmental and other professional issues including ethics, risk, commercial and economic considerations etc.

2. Core chemical engineering practice

Chemical engineering practice is the practical application of chemical engineering skills, combining theory and experience, together with the use of other relevant knowledge and skills. You are required to demonstrate the ways in which chemical engineering knowledge can be applied in practice, such as in: operations and management; projects; providing services or consultancy; developing new technology.

You should demonstrate high standards of appreciation and practice of Safety, Health and Environment (SH&E) in all aspects of your work.

Typical attainments include: possession of practical and laboratory skills relevant to chemical engineering; knowledge of the characteristics of particular equipment, processes or products; the ability to deal with technical uncertainty; appreciation of the sources and value of technical literature; awareness of the nature of intellectual property; facility in the use of appropriate codes of practice and industry standards.

3. Chemical engineering design & design practice

Chemical engineering design is the creation of a system, process, product or plant to meet an identified need. Chemical engineering design covers a wide range of applications including: process design, process troubleshooting/debottlenecking, equipment design, product design, product troubleshooting, system design.

You should provide evidence of competence in chemical engineering design, that demonstrates bringing together technical and other skills, the ability to define a problem and identify constraints, the employment of creativity and innovation, team-working and the ability to present technical information in ways appropriate to different audiences. You should demonstrate understanding of the concept of 'fit for purpose', the importance of delivery, and the need to meet ethical and legal requirements to protect safety, health and the environment.

Part B. Advanced chemical engineering

Advanced chemical engineering comprises knowledge and understanding developed to a higher level than the fundamentals of chemical engineering covered in Part A, such as what would be achieved in an accredited university master's programme. Understanding at this level is often specialised but is always characterised by the following:

- ability to handle uncertainty and complexity
- ability to familiarise yourself with the new and unknown
- ability to develop innovative approaches
- understanding of the limits of available technology and of the potential of new and emerging technology
- a broad understanding of related subjects.

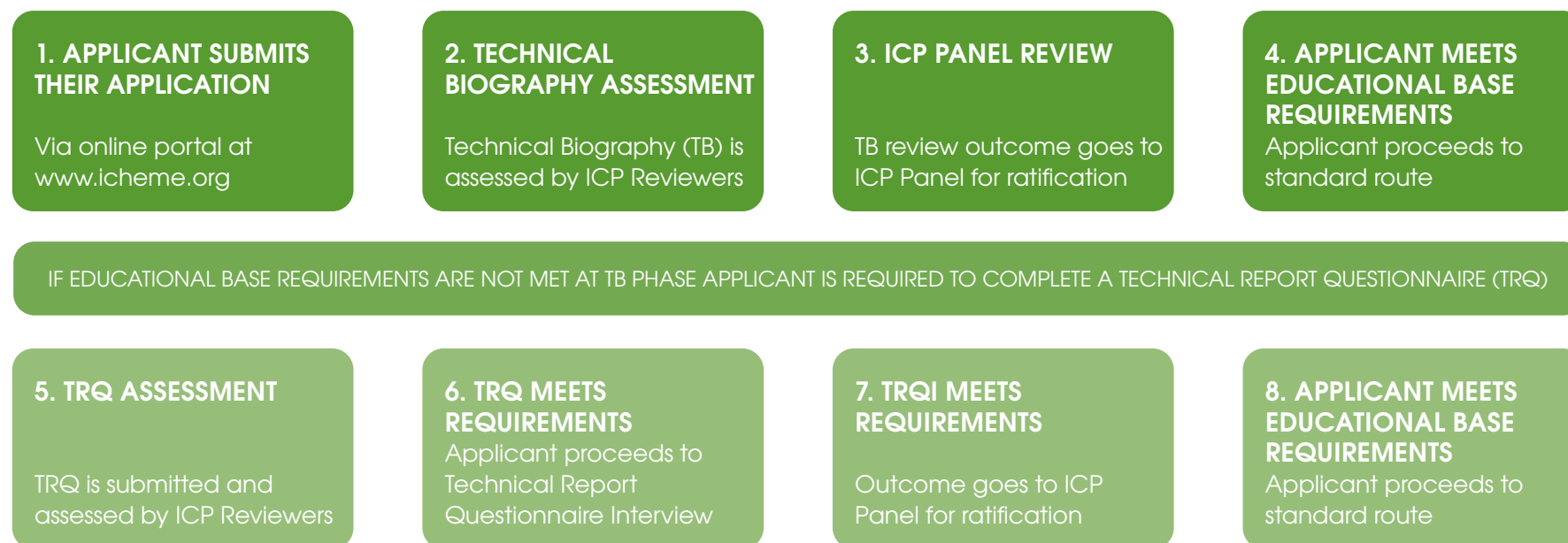
You should provide evidence of your attainment of these abilities and, in their application, your understanding and practice of:

- the principles of sustainability (environment, social and economic)
- the need for high ethical and professional standards and how they are applied to issues facing engineers.

Your evidence should include an in-depth understanding of some area of application, alongside some understanding of the broader application of chemical engineering.

You will also need to show evidence of your ability to work beyond current knowledge and practice, such as through research, development or equivalent investigations. Similarly, you should provide evidence of your application of the advanced concepts (above) applied to chemical engineering design.

ICP application assessment process



Outcome of the Technical Biography assessment

Once your Technical Biography has been assessed, your application will meet one of the following outcomes:

- Outcome 1 – Technical Biography **meets educational base requirements (exempt)**. Please proceed to the next stage of your application.
- Outcome 2 - Technical Biography has insufficient or incorrect information, **further information required**. Re-submit Technical Biography.
- Outcome 3 – Technical Biography review has identified that more detailed evidence is needed to demonstrate educational base requirements. You will be asked to **submit a Technical Report Questionnaire (TRQ)**. See steps 5–8 above. Further information on the information required will be provided.
- Outcome 4 – Technical Biography indicates other options to be considered.

Once your Technical Biography (TB) has been received there will be a maximum period of 12 months for the completion of this phase of the ICP process. If your application is not completed within this time or you have not supplied the required information, your application will be removed from the system and you will have to reapply and pay for this phase again.

You will receive your TB outcome as a letter which you should retain for future use with any IChemE application process.