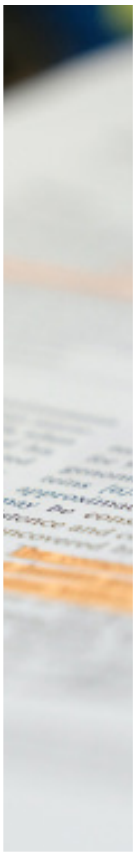
IChemE

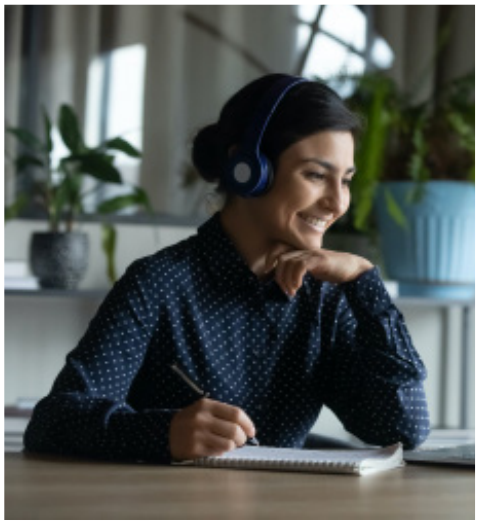
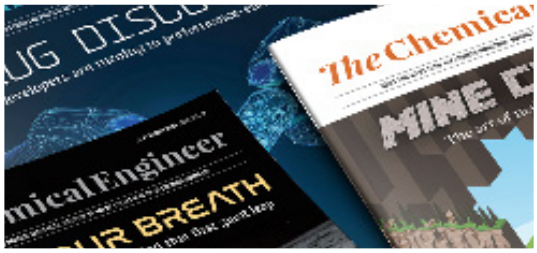
Chartered Member

Stage 2 - Initial Professional Development (IPD) guidance for applicants

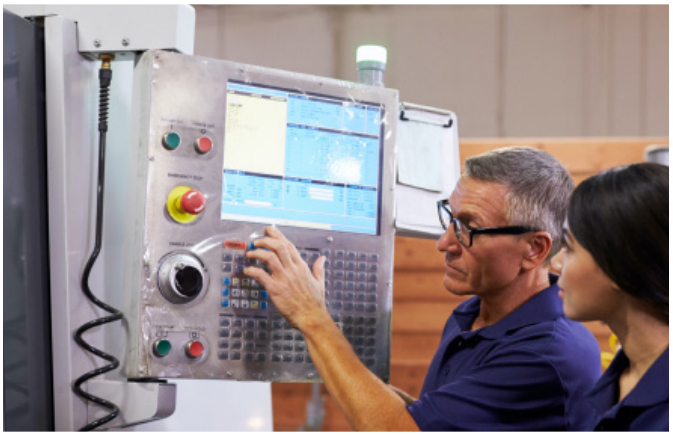







Document control

Version	Date issued	Changes
V4.0	January 2024	Removed all verification references
V3.0	January 2023	■ changes to application process. IPD Submission now completed online ■ changes to committee and subcommittee names
V2.0	January 2022	■ changes to section C1 to cover changes to Engineering Council UKSPEC4 ■ replaced **members@icheme.org** with **applications@icheme.org** ■ corrected a reference to two IPD assessors. Only one assessor is used for IPD assessments
V1.0	March 2021	New document

Content

Stage 2 - Initial Professional Development (IPD)

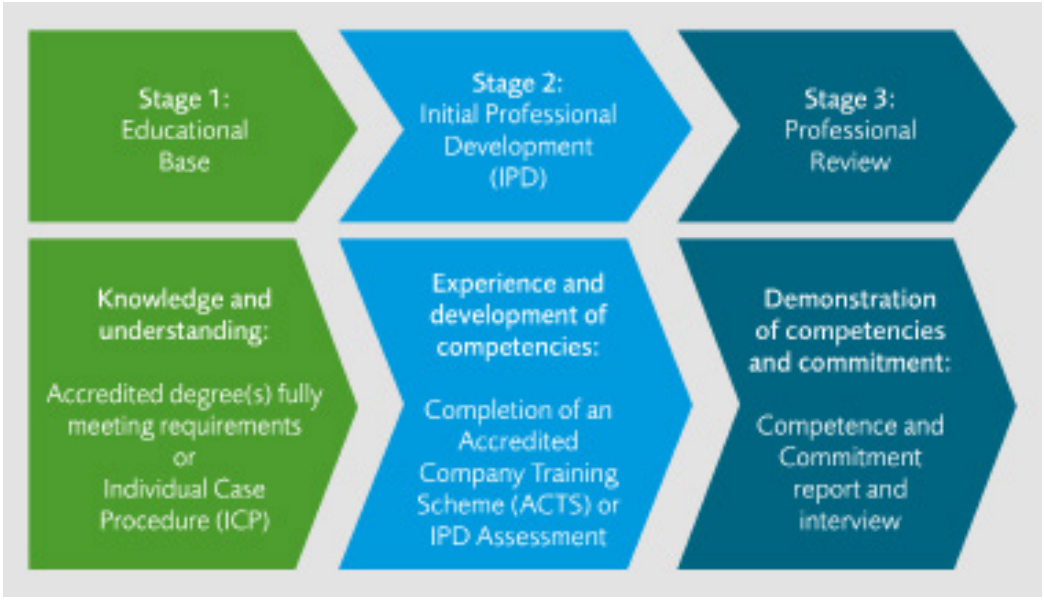
Introduction

This guide is for applicants looking to satisfy Stage 2 - Initial Professional Development (IPD) of the professional qualification process for IChemE Chartered membership.

There are separate documents covering IPD for applicants intending to apply for Engineering Technician (EngTech) or Incorporated Engineer (IEng).

The Engineering Council requires those seeking professional engineering registration to maintain a detailed record of their professional development, responsibilities and experience, and to provide evidence prior to the professional review.

There are three stages to achieving Chartered membership:



Stage 1 - Educational Base

Demonstration of knowledge and understanding. A degree accredited by IChemE at M-Standard fulfils this step. Otherwise, an applicant is assessed by the Individual Case Procedure (ICP).

Stage 2 - Initial Professional Development (IPD)

Development of competencies through training and on-the-job experience.

Stage 3 - Professional Review

Demonstration of competencies and commitment. Includes submitting a Competence and Commitment (C&C) Report and attending a Professional Review Interview.

When all three stages have been successfully completed, you become an IChemE Chartered Member and Chartered Chemical Engineer. You can also opt for Chartered Engineer (CEng) registration with the Engineering Council.

Please note that the assessment of each stage is completed separately and independently, and the successful completion of Stages 1 and 2 does not guarantee success in Stage 3. If in doubt, please contact applications@icheme.org, who will be able to tell you where you sit in the three-stage process. You do not need to complete Stage 1 before Stage 2, but no applications for Stage 3 can be accepted prior to the successful completion of Stages 1 and 2.

What is Initial Professional Development (IPD)?

Initial Professional Development is where you learn to apply your knowledge and understanding, develop the required competencies, and attain the experience to help you become professionally qualified.

What is the objective of the IPD assessment?

You will have to demonstrate your level of achievement across all IChemE competency areas. There are four possible levels of attainment for each competency topic:

Awareness
A topic has only been touched on by the applicant. Does not perform the activity.

Knowledge
There has been some training undertaken or experience gained in this area, but more is required. Performs only routine and predictable tasks.

Experience
Evidence of competence demonstrates good coverage, but the applicant needs either a little more experience or training, or the opportunity to operate at the required level. Little or no individual responsibility.

Ability/Skill
Evidence of competence demonstrates fully adequate coverage. Performs the activity in a range of contexts; supervision only required in more complex circumstances; some individual responsibility or autonomy.

The level of achievement which you have to demonstrate depends on the membership grade that you are applying for. When applying for Chartered membership, you need to develop all or nearly all your broad competencies to the 'Skill' level, and any others should be at the 'Experience' level.

Recording and updating your IPD will help you prepare and submit your Competence and Commitment (C&C) Report as part of the Professional Review. You will be able to choose the most appropriate examples which demonstrate that you have developed each competency at the required level. Also, by recording and mapping all of your training and work-based activities against the IChemE competencies, you will be able to identify any possible gaps. If you have a **mentor**, this mapping can also be reviewed by them in order to identify training and activities which will help you fill these gaps.

IPD routes to professional registration

■ Accredited Company Training Scheme (ACTS)

These are IChemE-accredited structured training programmes run by some employers. The scheme will provide the applicant with substantiated support and guidance to emerge as a competent chemical engineer and achieve professional registration.

■ Self-managed training

If your company does not have an ACTS, you should use the **Framework for Effective Mentoring** to help you record and monitor your professional training and activities. You are responsible for managing your own training, although it is advisable to seek support from an IChemE trained mentor, who will assist you with career and professional development advice.

What is involved

In order to complete your IPD you need to monitor and record the development of your competencies and provide evidence that you have satisfied all of IChemE's areas of competency.

IChemE will assess your IPD to see whether it satisfies the requirements for Stage 2. If you meet our requirement, and have the required Stage 1 - Educational Base, you can then apply for the final Stage 3 and go through a Professional Review.

However, if you have satisfied the requirements of Stage 1 and completed the required training for IPD and have been certified under Stage 2, but do not yet have a position of professional responsibility, you can delay proceeding to the Professional Review (Stage 3).

Applicants from an ACTS

If you have successfully completed an ACTS you will automatically satisfy the IPD requirement and can proceed directly to the Professional Review stage. You will only have to submit an **ACTS IPD Completion Form**. The form has to be signed by:

- **a mentor, preferably the one who was assigned to you while on the scheme. The mentor will confirm that you have developed all the required competencies;**
- **the ACTS manager (who may delegate to another senior chemical engineer in the scheme), who will confirm that you have completed the scheme and have developed all the required competencies.**

Since completion of an ACTS satisfies the IPD requirements, no fee is applicable.

Applicants with self-managed training

If you have not completed training via an ACTS, you will have to submit:

- **an online IPD Submission. In your submission you will map your working experience and activities against the required IChemE competencies;**
- **an IPD focused CV, consisting of a brief chronological listing of your professional work experience and achievements (maximum two pages).**

Completing the IPD Submission

The IPD Submission is based on the Framework for Effective Mentoring. The Framework is an Excel spreadsheet, which you can use to record your training and working experience and map them against the IChemE competencies. If you have a mentor, you can work together to identify any missing gaps and possible activities to fill these gaps.

Entries in the IPD Submission should be concise, with at least one main example per subsection (to show depth) and two to four bullet points per subsection (to show breadth). You can then use these later as the basis for your C&C report, expanding one or two of the bullet points to give more detailed examples. The sections in the IPD Submission Form correspond to those in the C&C report that you will prepare for your Professional Review.

If you are an experienced chemical engineer you use the same form to record your past development, and you can include any relevant training and experience that you have gained at any time in your career.

See **Appendix B** for a link to the *Stage 2 - Initial Professional Development (IPD) example submissions from applicants* document which provides real examples that previous successful applicants have provided in their IPD submission form.

We do provide an **IPD Submission preparatory template** which you may use to compile your submission ahead of making your online application, although this is not compulsory. When you are ready to submit your IPD Submission, you will enter/copy your entries into the IPD Submission section of your online application and submit it for review.

Completing the IPD Completion Form (ACTS applicants)

ACTS applicants do not need to fill in the IPD Submission, but it is recommended that you use the Framework for Effective Mentoring to support your development. This will be particularly helpful if you move between companies with and without ACTS. You also need to ensure that the IPD Completion Form is signed off by both your assigned mentor and your ACTS manager. Only applicants who are registered in the scheme, together with their mentor, will be able to apply through this fast track route.

If you were on an ACTS but did not complete it in full, eg because you left the scheme or company early or because the scheme was terminated, you should submit a partially completed IPD Completion Form and get your mentor and scheme manager to approve the competencies that you have gained so far. You will then also need to submit the IPD Submission in order to provide evidence of the remaining competencies which had not been developed to the required level. Likewise, if you joined an ACTS company after some years of prior experience, you may fill in an IPD Completion Form for the competencies you have developed under ACTS, and an IPD Submission for competencies developed in your previous employment.

Outcome of the IPD assessment

Your IPD will be assessed by a trained assessor. Your IPD can be assessed either as 'satisfactory' or 'needs improvement'.

If your IPD is satisfactory and you also have the required Educational Base (Stage 1), you can then proceed to the Professional Review (Stage 3). The assessor may provide advice intended to help you in preparing your Competence and Commitment (C&C) Report.

If your IPD is currently requiring improvement, you will be provided with detailed feedback from the assessor by email which states which competencies have not been developed to the required level. You will be asked to log back in to the application portal and update the specific sections (highlighted in red), which will be made editable for you to update once you have advanced these competencies further.

There may be cases where the report is missing some information, and you will be asked to provide more details or submit additional documentation.

You may make two resubmissions of your IPD Submission free of charge. If your IPD isn't deemed satisfactory after three submissions, or if more than three years have elapsed since your initial submission, you will need to reapply for the IPD assessment and pay a new fee.

Please note that the IPD assessment will only assess your training and work experience against the IChemE competencies. A satisfactory IPD does not necessarily mean that you are using your knowledge, training and experience at the required levels of professional responsibility and commitment. These will be assessed in the Professional Review (Stage 3) where you will have to submit your C&C report and undergo a Professional Review Interview.

Tips and supplementary guidance

This section of the document includes additional material to help applicants better understand the required information and level of detail for a good IPD Submission Form. Although this has been written for applicants, it is equally applicable to assessors.

Tips and suggestions

In each section of the IPD Submission you should include at least one main example which shows you have attained the 'Ability/Skill' or 'Experience' level for that activity, plus some bullet points of activities at the 'Knowledge' or 'Awareness' level. The main example shows depth of knowledge and bullet points demonstrate breadth. This is similar to the recommended layout for the Competence and Commitment (C&C) Report.

Skill/ability	Evidence of competence demonstrates adequate coverage and meets the standard required for a Chartered Chemical Engineer. Performs the activity in a range of contexts; supervision only required in more complex circumstances; some individual responsibility or autonomy.
Experience	Evidence of competence demonstrates good coverage, but the candidate needs either a little more experience or training, or the opportunity to operate at the required level. (The required experience, training or opportunities should be described). Little or no individual responsibility.
Knowledge	There has been some training undertaken or experience gained in the area, but more is required. Performs the activity with significant direction/supervision. Performs only routine and predictable tasks.
Awareness	The area has only been touched on by the mentee. Has not yet had the opportunity to perform the activity.

Avoid ambiguous terms such as 'responsible for'. Does this mean performing calculations yourself, checking other people's work or general supervision? Remember, for IPD you have to demonstrate training and hands-on experience, not professional responsibility (except in section C2) which is assessed during Stage 3 - Professional Review.

For the main example(s) in each section, provide sufficient detail to help the assessor to understand what you were doing and demonstrate that you have reached the 'Ability/Skill' or 'Experience' level - type of equipment, project title, type of calculations performed, etc. The bullet points do not need this level of detail, but should give sufficient explanation to show what you did personally. You should aim to be specific rather than generic.

Examples

Good main examples:

- provided process engineering input in multi-discipline engineering teams on various projects. For example, I combined my calculations of the mass balance for the new water treatment plant at QQQ with information from the mechanical engineer on available pump characteristics to produce process equipment specifications. (A2);
- developed and tested new digital design tools for water quality analysis, unit process sizing, process performance metrics and hydraulic calculations. (A3);

- I performed calculations for the feasibility, outline and detailed process design on project ZZZZ, including mass, heat and energy balances, process flow diagrams, P&IDs, hydraulic design, design risk assessments, control philosophies, commissioning strategies, plant and equipment specifications and carbon calculations. (A4);
- following an incident where oil was directed overboard from an offshore platform, I supported the immediate response, calculating the mass of oil released and likely environmental impact, and helping assess short term modifications to prevent recurrence. (B2);
- managed group of contractors on installation works for a new evaporator plant. Liaised with managing directors of suppliers, provided performance feedback and preventative actions. (C2).

Inadequate main examples:

- implementing, managing and monitoring water treatment programmes for commercial and industrial water systems. (A1). [Reads more like a job description than an activity, and does not clearly relate to problem or project definition. May belong better in C3.];
- I was responsible for the running of the trials line. That included the production samples, process development and scale up. (A5). [Was "responsibility" actually operating the line or directing others?];
- I worked with other disciplines in a project to compare different project options followed by the capital cost estimation of the chosen project. (B2). [Some description of the project is needed];
- as an interim in the development team, I was working within the team with a focus on delivering my own student projects, support the product development projects and playing a key role to support the other team members. (C1). [Too long and vague, no real explanation of how interpersonal relationships were managed];
- I advocated MoC being completed when the Process Engineer intended to change the pressure operating envelope for pressure liquefaction without including a MoC. (D2) [Potentially good, but need to explain MoC acronym, plus the implications and results].

Examples of good bullet points:

- worked with the instrument and programming engineers to install two instruments to detect liquid level in a surge tank. (A2);
- conducted evaluation to debottleneck existing water injection system to provide higher pressures. (A4);
- completed IChemE HAZOP training and in-house course, and 'IOSH Managing Safety' course. (B1);
- produced technical risk assessments for installation of laboratory filters/dryers and pilot plant operation. (B1);
- responsible for environmental monitoring. I maintained compliance, managed the relevant budget and delivered the environmental training. (B2) ['Responsible' is acceptable here because the second sentence clarifies what was done];
- I trained six shift teams on how to use the new packing unit and operation of our new reactor. (C2);
- I wrote and executed qualification and validation protocols on a wide range of equipment and processes including a new fluid bed dryer. (C3);
- represented the chemical engineering profession at a local school career event. (D1);
- in-house 'Code of Business Conduct and Ethics' and 'Anti-bribery and Corruption' training with annual refreshers. (D2).

See our *Stage 2 - Initial Professional Development (IPD) example submissions from applicants* document at www.icheme.org/chartered-stage2 to view real examples from previous successful applicants.

Expected content of subsections

These notes are stated in terms of the Competence and Commitment (C&C) Report (Stage 3), which implies a higher standard of responsibility than that required for IPD (Stage 2). Nevertheless, they provide valuable guidance for applicants and reviewers of the type of activities expected in each subsection of both the IPD Submission and C&C report. They should also help applicants to anticipate the level of submissions required in future for the C&C report.

Section A: Evidence of applying your knowledge and understanding to practical situations.

Provide evidence of your ability to apply knowledge and understanding of engineering or science to practical chemical engineering situations.

The examples provided must involve the use of chemical engineering principles and knowledge. Having an awareness of methodologies, the use of standard formulae or data entry into standard spreadsheets of other models, without an apparent understanding of the underlying chemical engineering principles, does not demonstrate adequate experience.

A1. Applying appropriate theoretical and practical methods to identify or define a problem, opportunity or project.

What the assessors look for:

Assessors look for application of chemical engineering principles and theory in identifying a problem and its solution or in identifying an opportunity or project.

A2. Combining ideas and contributions from different people and disciplines to arrive at appropriate engineering, technical or scientific solutions.

What the assessors look for:

Assessors look for reference to chemical engineering principles, the technical advice you sought from other disciplines and how you applied their advice in advancing your task. Alternatively, what reference to chemical engineering principles you made, and what did you contribute in conjunction with other disciplines' contributions to advance a team task.

A3. Displaying creativity and innovation: developing your own ideas to produce new engineering, technical or scientific solutions, new designs and new technological approaches.

What the assessors look for:

Assessors look for the creative approach you have taken to developing solutions in chemical engineering applications. Highlight the benefits that have been realised with reference to chemical engineering principles.

A4. Undertaking scientific or technical evaluation and optimisation (of product, process, equipment, method, project etc) against the requirements you identified, or the brief you were given.

What the assessors look for:

Assessors look for the remit or requirements of your task and how you conducted a technical evaluation with reference to chemical engineering principles.

A5. Planning and executing projects: organising or performing technical work to implement or validate solutions, designs etc.

What the assessors look for:

Assessors look for, within a chemical engineering application environment, how you plan and execute your tasks taking into consideration scheduling, resources, priorities, contingencies, budgets etc.

Section B: Evidence that you are able to handle the wider implications of your work as an engineer.

Demonstrate your awareness of the safety, environmental and commercial implications of your work. Developing awareness does not mean that you need expert experience working as a safety engineer, environmental consultant or project manager – these issues should be inherent in the work of any chemical engineer.

B1. Ability to handle health, hazard and safety aspects: to apply appropriate principles, good practice, meet legislative requirements etc.

What the assessors look for:

This section is a critical requirement for successful application for Chartered Chemical Engineer status. Assessors look for knowledge and breadth of experience, where you identify, evaluate and address process safety issues in research, design or operation, contribute as a chemical engineer in structured process hazard evaluation, show a clear understanding of the legislative requirements and the wider impact safety related issues can have.

B2. Ability to handle sustainability aspects: these could include environmental, public concern and other societal issues, recognition of risks etc.

What the assessors look for:

Assessors look for evidence that you recognise factors having environmental, public or societal impact and how as demonstration of ability to handle sustainability aspects, you use chemical engineering to manage (control or mitigate) these issues within research, design or operation.

B3. Ability to handle commercial and economic aspects.

What the assessors look for:

Assessors look for evidence of commercial and economic aspects through sales and business management tasks you may have undertaken or demonstration of commercial and economic considerations in conducting evaluations, managing tasks and projects and arriving at solutions.

Section C: Evidence of your interpersonal, leadership and communication skills.

Convey how you effectively communicate and work with professionals at all levels. How do you ensure your colleagues know what you are doing and how do you gather information on issues concerning you?

C1. Evidence of managing interpersonal communications and relationships including demonstrating an awareness of diversity and inclusion.

What the assessors look for:

Assessors look for evidence of the techniques you apply in building, managing and sustaining your interpersonal relationships within teams, with juniors, peers, managers, clients, vendors etc and how, for example, you may have managed a difficult situation within a work based scenario.

C2. Demonstrating leadership in a professional role.

What the assessors look for:

Assessors look for evidence of mature competence where, using your chemical engineering skills, you have demonstrated technical leadership in a professional capacity, including for example going beyond your remit by taking responsibility and following through on problems identified. Evidence of team leadership may be used as supplementary evidence.

C3. Communicating ideas and plans by report writing and oral presentation.

What the assessors look for:

Professional reviewers look for evidence of the ability to communicate with professionals and others at various levels by transfer of ideas, plans, facts and technical data through written reports and oral presentations.

Section D: Evidence to show that you are committed to high standards of professional and ethical conduct.

Demonstrate a personal commitment to professional standards, recognising obligations to society, the profession and the environment.

D1. Professional conduct.

What the assessors look for:

Assessors look for evidence of your knowledge and use of professional standards, your commitment to quality in ensuring that yours and others' work is to a recognised standard and that you seek to support and promote the profession.

D2. Ethical decision making.

What the assessors look for:

Assessors look for evidence of your integrity as an engineer in the decisions you make relating to the tasks you undertake and the application of ethical decision making within a work-related or professional scenario. Ethics based learning you undertake may be used as supplementary evidence.

Appendices

Appendix A – Plagiarism and Code of Conduct

Plagiarism and collusion are taken seriously by IChemE. Before submitting your application, you should read IChemE's **Plagiarism Policy**, which applies to existing members of all grades, and also to those in the process of applying to become members. It supports sections 3b(x) and 3b(xv) of the **Code of Professional Conduct** that require members to reject bribery and other corrupt practices, and to be mindful of the integrity expected of members of IChemE in their personal conduct.

Appendix B – Example submissions from applicants

The **Stage 2 - Initial Professional Development (IPD) example submissions from applicants** document provides real examples that previous successful applicants have provided in their IPD submissions. All examples within the document were assessed by IPD assessors as providing good evidence of experience for the specific section they relate to.

Appendix C – Data protection

By submitting an application to IChemE, you are agreeing to IChemE taking the appropriate steps to process your application in accordance with IChemE's processes and regulatory requirements. You are reminded of these points upon submission, and include:

- **the appropriate staff members will administer the application;**
- **where appropriate, the application will be peer reviewed by members of IChemE acting in the role of IPD assessor, and by committees that also comprise members. These are bound by IChemE's Code of Professional Conduct and IChemE policies;**
- **given that IChemE has a global membership and offices in other countries, your application information could be sent and processed in another country;**

You should not disclose confidential information that is contrary to your employer's confidentiality policy.

In a similar manner, IPD assessors understand that the reports that they submit may be reviewed by various member-led bodies within IChemE (Membership & Qualifications Committee, Professional Development Subcommittee and Registration Subcommittee) and that the Engineering Council and other appropriate licensing bodies may audit any aspect of an application that relates to the appropriate registration.

For more information on IChemE's Privacy Policy see **www.icheme.org/privacy**

Appendix D – Conflict of interest

IChemE's Code of Professional Conduct states that members must avoid real or perceived conflicts of interest and advise affected parties when such conflicts arise.

Where the IPD assessor indicates conflict of interest, IChemE membership staff will work to make alternative arrangements.

For more information you can find the Code of Professional Conduct at **www.icheme.org/codeofconduct**

Appendix E – Glossary of terms

ACTS	Accredited Company Training Scheme. A graduate training scheme accredited by IChemE.
C&C report	Competence and Commitment Report. Part of Stage 3 (Professional Review) of the application process, all applicants must complete this report in order to apply for Chartered membership.
CEng	Chartered Engineer. An Engineering Council professional registration.
CPD	Continuing Professional Development
IChemE	Institution of Chemical Engineers
ICP	Individual Case Procedure. Stage 1 (Educational Base) of IChemE's application process for professional membership.
IPD	Initial Professional Development

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