

CIHT Individual Route Guidance

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Introduction

The Individual Route enables you to demonstrate that you have acquired the equivalent technical knowledge and understanding of scientific and engineering principles to the same level as those who fulfil the academic benchmark.

Upon successful completion of the Individual Route, you would then be eligible to proceed to compile a Portfolio of Evidence and apply for Professional Review once you have gained the required breadth and depth of practical experience to demonstrate competence to the level which you aspire.

Individual Route applications for CEng and IEng are assessed against the following five areas of learning, as outlined in the [Accreditation of Higher Education Programmes 4th edition](#) (AHEP)

- Science and mathematics
- Engineering analysis
- Design and innovation
- The Engineer and society
- Engineering practice

Your initial assessment outcome e-mail will confirm which of the below Individual Route options are available to you.

- A Technical Report
- A Further Learning Report
- The CIHT experiential route

The purpose of the Individual Route is to demonstrate that you possess an equivalent level of technical knowledge and understanding of scientific and engineering principles as those who hold accredited qualifications which fulfil the Engineering Council's academic benchmark for the level of registration being sought i.e. an integrated Master's degree for CEng. **It is not necessary for you to have carried out such work yourself; but it is crucially important that you display an understanding of the development of designs and the consequent design processes.**

CEng applicants should refer to the M1- M18 learning outcomes on pages 32-37 of [AHEP](#) for further guidance. IEng applicants should refer to the B1- B18 learning outcomes on pages 27-31 of [AHEP](#).

A summary of the key differences between the 'B' and 'M' learning outcomes is provided in **Appendix 1** below.

We highly recommended watching CIHT's [Individual Route webinar](#) prior to starting an application.

The Technical Report

The Technical Report option allows you to demonstrate your knowledge and understanding of engineering principles. It consists of a three-stage process.

Stage 1 – Synopsis

The synopsis is an outline of what you propose to discuss in your full Technical Report (Stage 2) and may be submitted at any time throughout the year. To help structure your synopsis to the relevant AHEP learning outcomes, you will need to complete the CEng/IEng Synopsis Evidence Forms which are available to download from our website.

The Synopsis Evidence Forms must demonstrate in no more than 1500 words how you propose to fulfil each of the AHEP learning outcomes within your full Technical Report.

You are encouraged to seek the support of a **mentor** to provide you with advice and guidance in preparation for your Technical Report application. As above, applicants are also encouraged to watch our [Individual Route webinar](#) for further guidance.

What do I need to submit?

The following documentation should be included in your Stage 1 application and sent to education@ciht.org.uk as one comprehensive PDF file.

- A completed Stage 1 Technical Report application form signed off by a sponsor who is an Engineering Council registrant at the level being sought, or above.
- A copy of your initial assessment outcome e-mail
- Your completed Synopsis Evidence Forms
- A copy of your CV. This should cover your relevant academic qualifications as well as your work experience to date.
- CPD record (a minimum of 25 hours per year for **each** of the two years prior to the date of your application). Please also include any CPD undertaken for the year in which you are applying, for information purposes.

What happens next?

Once you have submitted your Stage 1 application, the Education Team will complete an administrative check to ensure that no documentation is missing. If everything appears to be in order, you will be invited to make payment of the Stage 1 assessment fee online through your MyCIHT account. Once the payment has been processed, your application will be sent to two Individual Route assessors. Applicants are usually notified of their outcome within 4-6 weeks of the date of submission.

Result

If your synopsis is successful, you will be invited to proceed to the submission of a full Technical Report (Stage 2). The assessors may provide you with some helpful feedback to assist you with the next stage.

If your synopsis is unsuccessful, you will be provided with feedback to explain why you are unable to proceed to Stage 2. You will then have the option of re-submitting your application once you have had an opportunity to address the feedback.

Stage 2 – Technical Report

If your Technical Report synopsis is approved, you will have **12 months** to submit your full Technical Report which should not exceed 8,000 words. Similar to the synopsis stage, your Stage 2 Technical Report application will be structured and assessed against the AHEP requirements. For each area of AHEP, you need to provide examples of your understanding of engineering knowledge and theory, including a reflection of any lessons learned and highlighting any aspects which you would now approach differently.

What do I need to submit?

The following documentation should be included in your Stage 2 application and sent to education@ciht.org.uk as one comprehensive PDF file.

- A completed Stage 2 Technical Report Application Form signed off by a sponsor who is an Engineering Council registrant at the level being sought, or above. The application form includes the Technical Report template i.e. there are no separate forms to record your Stage 2 evidence.
- A copy of your CV
- An updated CPD record, demonstrating a minimum of 25 hours per year for each of the previous two years. Please also include any CPD undertaken for the year in which you are applying, for information purposes.

Appendices: Your report should include evidence such as reference to designs, drawings, calculations, and any other types of activity or analysis which you have undertaken. Some of this evidence might be contained in appendices and each appendix should be clearly referenced within the relevant sections of the report.

Bibliography/References: Design data such as guidelines and standards, as well as any other relevant documentation which is generally available, should be cited and a full bibliography provided in a reference list at the end of the report.

You should avoid simply writing about a project that you have worked on. The formation of an engineer is usually through a variety of projects and experiences and the assessors will expect to see this variety reflected in your Technical Report.

Top Tips

- You should ensure that your Technical Report remains focussed on your approved synopsis and incorporates any feedback provided by your assessors.
- You should aim to write in the first person e.g. 'I decided...' and emphasise your own technical knowledge and the basis on which you made design and other decisions. Phrases such as 'we decided...' should be avoided, but where a decision was group based, you should clearly identify your contributions to the group decision.
- Any illustrative diagrams, tables, drawings, calculations and statistics should be included in an Appendix to the main report to support the development of a point. You must be able to demonstrate your understanding and interpretation of them.
- All appendices should be referenced at the appropriate place in the text within the main report. The appendices should be ordered according to the order in which they are introduced in the text. Each appendix should be clearly and separately titled (e.g. "Appendix A – highway pavement calculations"). Appendices should only include essential additional documentation which provide evidence to support an assertion you are making in the report. Submissions with an excessive bulk of appendices should be avoided and it is recommended that they should ideally consist of no more than 50 sides of A4.

What happens next?

Once you have submitted your Stage 2 application, the Education Team will complete an administrative check to ensure that no documentation is missing. If everything appears to be in order, you will be invited to make payment of the Technical Report assessment fee online through your MyCIHT account. Once payment has been made, your application will be sent to two Individual Route assessors (usually the same assessors who reviewed your synopsis).

Your assessors will carry out a pre-interview assessment to determine if your Stage 2 application is of a satisfactory quality to proceed to a Technical Report interview. The Education Team may agree a provisional interview date/time with you in advance of the pre-interview assessment outcome.

Pre-Interview Assessment Outcome

Following the pre-interview assessment stage, you may be invited to attend a Technical Report interview. If so, the Education Team will proceed with confirming your interview arrangements. In some cases, the assessors may provide you with some feedback to help you prepare for the interview. If the assessors consider that you should not be invited to proceed to an interview, feedback will be provided to explain this decision and you may be invited to re-apply at a later date.

Stage 3 – Technical Report Interview

Technical Report interviews usually last for approximately one hour. At the start of the interview, you will be invited to speak about your career to date for around 5 minutes, highlighting your significant **engineering** achievements. Your interview will be a structured discussion between you and two assessors, who will expect you to demonstrate your range and depth of knowledge and understanding of engineering principles, based on your Technical Report. Please note that interviews are usually held online and you will be expected to explain technical details remotely.

What do I need to submit?

You do not need to submit any further paperwork prior to your Technical Report interview (unless requested to do so by your assessors). However, you should have a copy of your Technical Report to hand to help facilitate the discussion.

What happens next?

Assessment outcomes are reviewed and ratified by CIHT's Individual Route Assessor Panel. The Education Team will inform you of the date of the IRAP meeting in which your recommendation will be considered.

Result

You will be notified of your Technical Report outcome within 6 weeks of your interview date. If you are successful, you will be eligible to apply for Professional Review once you have gained the required breadth and depth of practical experience to demonstrate competence to IEng/CEng level. You will also be eligible to apply for interim registration. Further information about the next steps will be provided to you by the Education Team.

Unsuccessful applicants will receive feedback to help them address the shortfalls in underpinning knowledge and understanding identified by the assessors and prepare for a Stage 2 resubmission.

The Further Learning Report (FLR)

The Further Learning Report (FLR) option may be available to you if you hold an academic qualification which is equivalent to the academic level required by the Engineering Council e.g. Masters-level for CEng) but has not been accredited for the purposes of professional registration.

As part of the FLR, you will need to complete the CEng/IEng **FLR Table** which lists the AHEP learning outcomes that your evidence must be aligned to. You will need to identify, with supporting evidence as an Appendix, how your learning meets each of the learning outcomes listed.

What do I need to submit?

- A FLR application should consist of:
- A completed FLR application form, signed off by a sponsor who is an Engineering Council registrant at the level being sought, or above.
- A copy of your initial assessment outcome e-mail confirming that a FLR may be submitted
- A copy of your CV
- Authenticated copies of your qualifications (including English translations where necessary)
- A completed FLR Table
- Your CPD record demonstrating a minimum of 25 hours per year for each of the previous two calendar years. Please also include any CPD undertaken for the year in which you are applying, for information purposes.
- Appendix of supporting evidence.

What happens next?

Once you have submitted your FLR application, the Education Team will complete an administrative check to ensure that no documentation is missing. If everything appears to be in order, you will be invited to make payment of the FLR assessment fee online through your MyCIHT account. Once payment has been made, your application will be sent to two assessors.

Result

Applicants are usually informed of their outcome within 6 weeks of the date of submission. There is usually no requirement for an interview, but you will be notified if this is considered necessary. Upon successful completion of the FLR, you will be eligible to apply for Professional Review once you have

gained the required breadth and depth of practical experience to demonstrate competence to IEng/CEng level.

The Experiential route

The CIHT Experiential Learning option provides members who hold an engineering degree that is partially accredited for **CEng**, or who are registered with the Engineering Council as an Incorporated Engineer (IEng), with the opportunity to demonstrate Master's level learning as specified in the [QAA Engineering Benchmark Statement](#) and AHEP.

Applicants will require significant technical and managerial experience in their highways/transportation engineering discipline.

Eligibility

Applicants for the CEng Experiential Learning option must:

- be a Member (MCIHT) or Fellow (FCIHT) of CIHT **and**
- hold a BEng(Hons) degree in Civil Engineering which is accredited as partially meeting the academic requirement for CEng registration (confirmed by CIHT at the Initial Assessment stage)

or

- hold Incorporated Engineer (IEng) status via CIHT or another relevant professional engineering institution.

In addition, applicants must:

- be able to demonstrate extensive engineering experience at a senior level.
- have made a recognisable contribution to transport infrastructure projects during their career to date.
- have responsibility for managing projects, leading and developing teams, and ensuring the safety and well-being of others.

The Education Team will confirm if you may be eligible to apply via the experiential route. A separate experiential route guidance document will be sent to you at this stage.

What do I need to submit?

Experiential Learning applicants should apply to CIHT for assessment using the appropriate application form. The Experiential Learning assessment is based on the written evidence provided in the application. Applicants may be required to attend an interview to expand on the examples provided in the application. The interview gives the assessors the opportunity to clarify and/or confirm information provided in the written application and to help them assess the range and depth of your knowledge and your understanding of engineering principles against the relevant learning outcomes. Interviews usually last up to 45 minutes and are normally conducted by two CIHT assessors who reviewed the written application.

What happens next?

Once you have submitted your application, the Education Team will complete an administrative check to ensure that no documentation is missing. If everything appears to be in order, you will be invited to make payment of the experiential learning assessment fee online through your MyCIHT account. Once payment has been made, your application will be sent to two assessors.

Result

Applicants are usually informed of their outcome within 6 weeks of the date of submission, or the interview date if an interview has taken place. There is usually no requirement for an interview. Unsuccessful applicants will receive feedback to help them address the shortfalls in underpinning

knowledge and understanding identified by the assessors and prepare for a resubmission. Assessment outcomes are reviewed and ratified by CIHT's Individual Route Assessor Panel.

Experiential Learning applicants whose level of underpinning knowledge and understanding is deemed to have satisfied the CEng learning outcomes will be invited to apply for professional review which requires the submission of a Portfolio of Evidence and attendance at a Professional Review interview.

Appendix 1

IEng: Broadly-defined problems involve a variety of factors which may impose conflicting constraints, but can be solved by the application of engineering science and well-proven analysis techniques.

CEng: Complex problems have no obvious solution and may involve wide-ranging or conflicting technical issues and/or user needs that can be addressed through creativity and the resourceful application of engineering science.

Area of learning	IEng	CEng
Science and mathematics The study of engineering requires a substantial grounding in engineering principles, science and mathematics commensurate with the level of study.		
Science, mathematics and engineering principles	Apply knowledge of mathematics, statistics, natural science and engineering principles to broadly-defined problems. Some of the knowledge will be informed by current developments in the subject of study.	Apply a comprehensive knowledge of mathematics, statistics, natural science and engineering principles to the solution of complex problems. Much of the knowledge will be at the forefront of the particular subject of study and informed by a critical awareness of new developments and the wider context of engineering .
Engineering analysis Engineering analysis involves the application of engineering concepts and tools to analyse, model and solve problems. At higher levels of study engineers will work with information that may be uncertain or incomplete.		
Problem analysis	Analyse broadly-defined problems reaching substantiated conclusions using first principles of mathematics, statistics, natural science and engineering principles.	Formulate and analyse complex problems to reach substantiated conclusions. This will involve evaluating available data using first principles of mathematics, statistics, natural science and engineering principles, and using engineering judgement to work with information that may be uncertain or incomplete, discussing the limitations of the techniques employed.
Analytical tools and techniques	Select and apply appropriate computational and analytical techniques to model broadly-defined problems, recognising the limitations of the techniques employed.	Select and apply appropriate computational and analytical techniques to model complex problems, discussing the limitations of the techniques employed.
Technical literature	Select and evaluate technical literature and other sources of information to address complex problems.	Select and critically evaluate technical literature and other sources of information to solve complex problems.
Design Design is the creation and development of an economically viable product, process or system to meet a defined need. It involves significant technical and intellectual challenges commensurate with the level of study.		

Design	Design solutions for complex problems that meet a combination of societal, user, business and customer needs as appropriate. This will involve consideration of applicable health and safety, diversity, inclusion, cultural, societal, environmental and commercial matters, codes of practice and industry standards.	Design solutions for complex problems that evidence some originality and meet a combination of societal, user, business and customer needs as appropriate. This will involve consideration of applicable health and safety, diversity, inclusion, cultural, societal, environmental and commercial matters, codes of practice and industry standards.
Integrated/systems approach	Apply an integrated or systems approach to the solution of broadly-defined problems.	Apply an integrated or systems approach to the solution of complex problems.
The engineer and society Engineering activity can have a significant societal impact and Engineers must operate in a responsible and ethical manner, recognise the importance of diversity, and help ensure that the benefits of innovation and progress are shared equitably and do not compromise the natural environment or deplete natural resources to the detriment of future generations.		
Sustainability	Evaluate the environmental and societal impact of solutions to broadly-defined problems.	Evaluate the environmental and societal impact of solutions to complex problems (to include the entire life-cycle of a product or process) and minimise adverse impacts.
Ethics	Identify and analyse ethical concerns and make reasoned ethical choices informed by professional codes of conduct.	Identify and analyse ethical concerns and make reasoned ethical choices informed by professional codes of conduct.
Risk	Use a risk management process to identify, evaluate and mitigate risks (the effects of uncertainty) associated with a particular project or activity.	Use a risk management process to identify, evaluate and mitigate risks (the effects of uncertainty) associated with a particular project or activity.
Security	Adopt a holistic and proportionate approach to the mitigation of security risks.	Adopt a holistic and proportionate approach to the mitigation of security risks.
Equality, diversity and inclusion	Recognise the responsibilities, benefits and importance of supporting equality, diversity and inclusion.	Adopt an inclusive approach to engineering practice and recognise the responsibilities, benefits and importance of supporting equality, diversity and inclusion.
Engineering practice The practical application of engineering concepts and tools, engineering and project management, teamwork and communication skills. Engineers also require a sound grasp of the commercial context of their work, specifically the ways an organisation creates, delivers and captures value in economic, social, cultural or other contexts.		
Practical and workshop skills	Use practical laboratory and workshop skills to investigate broadly-defined problems.	Use practical laboratory and workshop skills to investigate complex problems.
Materials, equipment, technologies and processes	Select and apply appropriate materials, equipment, engineering technologies and processes.	Select and apply appropriate materials, equipment, engineering technologies and processes, recognising their limitations.

Quality management	Recognise the need for quality management systems and continuous improvement in the context of broadly-defined problems.	Discuss the role of quality management systems and continuous improvement in the context of complex problems.
Engineering and project management	Apply knowledge of engineering management principles, commercial context, project management and relevant legal matters.	Apply knowledge of engineering management principles, commercial context, project and change management, and relevant legal matters including intellectual property rights.
Teamwork	Function effectively as an individual, and as a member or leader of a team.	Function effectively as an individual, and as a member or leader of a team. Evaluate effectiveness of own and team performance.
Communication	Communicate effectively on complex engineering matters with technical and non-technical audiences.	Communicate effectively on complex engineering matters with technical and non-technical audiences, evaluating the effectiveness of the methods used.
Lifelong learning	Plan and record self-learning and development as the foundation for lifelong learning/CPD.	Plan and record self-learning and development as the foundation for lifelong learning/CPD.