

FURTHER LEARNING TO MASTERS LEVEL

A Guide for Applicants

For applicants advised by IHIE as eligible to pursue this route to satisfy the educational requirements for Chartered Engineer.

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FURTHER LEARNING TO MASTERS LEVEL

Before you start

The benchmark academic qualification for CEng is an MEng or a BEng (Hons) plus a Masters degree. With this you follow the standard Professional Review.

If you have a BEng (Hons) or an engineering qualification assessed by IHIE as being equivalent to a BEng (Hons), or if you are an IEng with significant design experience you may look to top up to the benchmark Masters level by demonstrating that your subsequent further learning at work and/or other courses meets requirements.

You must contact IHIE first to ask if this route is the most appropriate for you.

What is the 'Further Learning' option?

Once you have clearance from IHIE, applicants able to follow the Further Learning option submit a **Further Learning and Training Report**. The report explains how you have developed a breadth and depth of knowledge and skills equivalent to an MEng or Masters degree.

IHIE's Academic Standards Panel reviews the Report and may call you for an interview to defend the submission.

If successful, you will receive a formal letter stating that you meet IHIE's academic requirements for chartered engineer. You can then proceed to the Standard Chartered Professional Review based on a report of your competence and commitment and an interview (*see Document CE2*)

What is "MEng/Masters" level?

All current UK qualifications are defined by "Learning Outcomes". The Engineering Council publishes the Learning Outcomes it expects of graduates at the different levels in UK SPEC.

In general, MEng or Masters level courses are characterised by greater depth and breadth as compared with BEng degrees. Masters Graduates should have a greater ability to apply their knowledge to solving, from first principles, complex problems not previously encountered. You will need to show new knowledge not part of your undergraduate degree.

The Learning Outcomes your Further Learning is seeking to achieve are listed in **Annex 1**.

What is Further Learning?

Further Learning can be conventional postgraduate qualifications or examinations or work experience which provides further depth and breadth of engineering delivered through your contribution to a substantive project. Possible examples are an innovative design or commissioning of a new process. These should be significant schemes requiring c1200 hours work of substantial scope and challenge and, ideally, should be cross-disciplinary. The purpose of the Further Learning report is to show that your underlying academic knowledge is at the right level.

The **Further Learning and Training Report** therefore needs to be cross matched to the Learning Outcomes in **Annex 1**.

Cognate Degrees

If you have a physical science or mathematics degree there is an additional engineering shortfall to be met. Your degree will not have covered engineering analysis and design. If it is not a numerate degree, you'll also need to demonstrate achievement of numerate competency.

You must provide evidence that you have masters level knowledge, skills and understanding applied to an engineering activity ie. design decisions have been taken and are based on sound engineering first principles.

Support and Authentication

You may find it helpful to engage a mentor, a more senior colleague, who can give a second opinion and general advice. IHIE Academic Standards Panel members may be able to assist.

Your report should be authenticated by a senior Chartered Engineer, usually your line manager.

He or she is also asked to satisfy themselves, to the best of their ability, that your report demonstrates achievement of the Learning Outcomes.

Further Learning Report Structure

The following advice on content and structure is intended to help; it is not mandatory.

1. Qualifications and career summary

List your formal academic qualifications and summarise your career to date (key posts and responsibilities) and describe your current position.

Attach certified copies of your certificates, list of units or modules and an abstract of any dissertation.

2. Post – graduation further learning

List any relevant formal training and provide details of or syllabuses for all formal qualifications and substantial short courses.

3. Further Learning

Explain your post-graduation work experience demonstrating how the Learning Outcomes have been achieved.

Summarise the technical nature of the work or learning, the technical objective of the scheme and support your explanation of your key project with relevant calculations, results, conclusions, recommendations.

Include, as Appendices, copies of drawings or reports or witness testimonials if necessary.

HOW TO APPLY

Ask IHIE for advice on whether your qualifications are degree equivalent.

Send:

- copies of your academic certificates and list of modules or units
- A brief description of any dissertation or final year project
- A career summary or CV
- A description of your current post and responsibilities.

If the information is not sufficient you may be asked for more information on the syllabus or for exam papers.

Your application will be considered by the Academic Standards Panel who may provide additional guidance.

Once you have clearance, compile your Further Learning Report which will be assessed by the Panel to verify achievement of the Learning Outcomes.

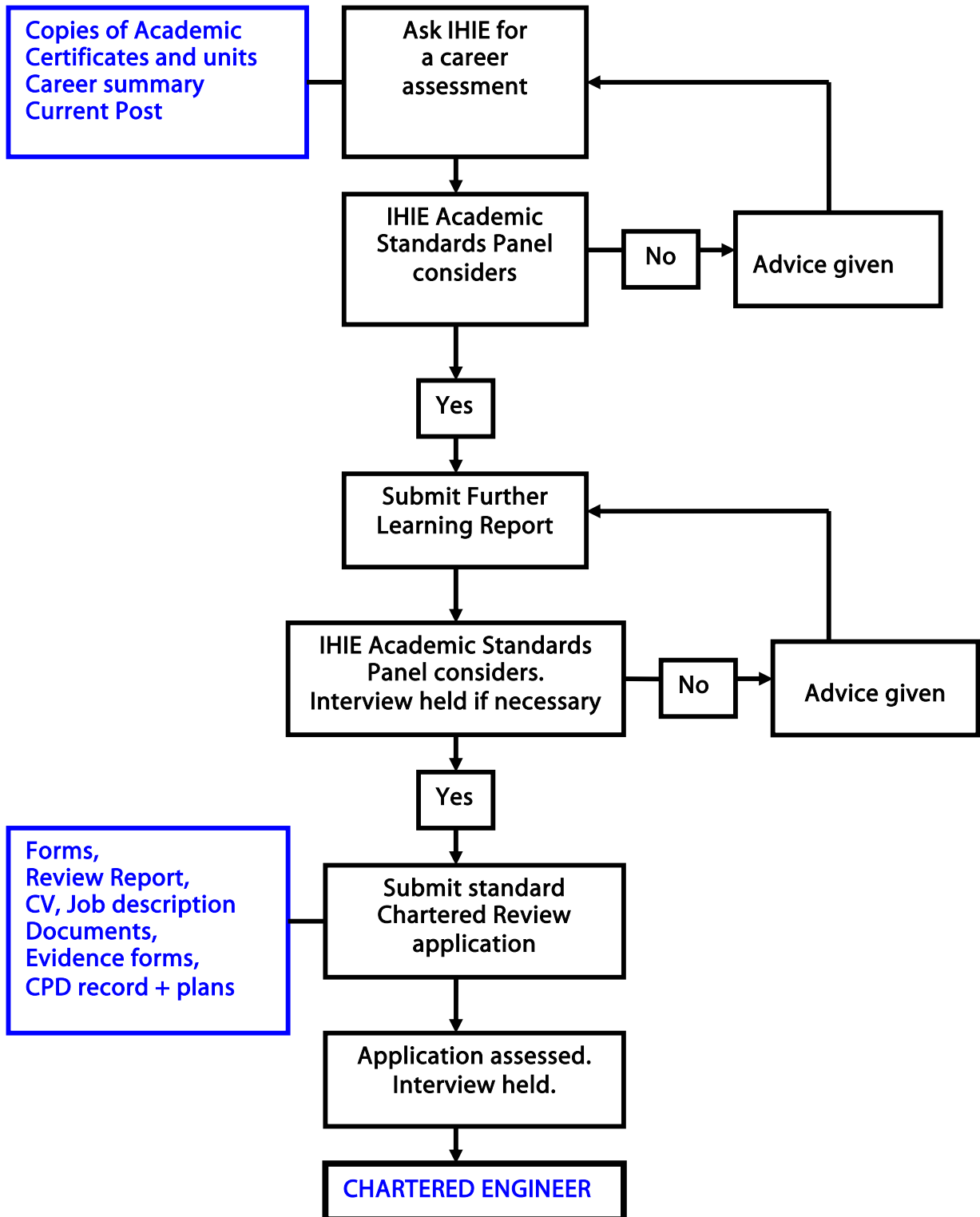
You may be asked to attend an interview to confirm your knowledge and understanding.

On successful completion you will receive formal notification from IHIE that you meet the academic entry requirements for chartered engineer. You can then submit your CEng Professional Review application (*Document CE2*)

FURTHER INFORMATION

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FURTHER LEARNING PROCEDURE



ANNEX 1: MASTERS LEVEL LEARNING OUTCOMES AND EXAMPLES OF LEARNING OPPORTUNITIES

	CEng Learning Outcomes	Indicative Learning Opportunities & Comments
1	The ability to integrate the knowledge and understanding across the whole degree programme.	Gathered during further learning and assessed at the end.
2	A greater degree of industrial involvement through project work.	A structured inter-disciplinary project or problem at work.
3	The ability to develop, monitor and update a plan of work to reflect a changing operating environment.	A design programme or a construction programme, accommodating real problems and variations as the work proceeds. This would involve planning, resourcing, costing, monitoring, re-planning and evaluating.
4	The ability to monitor and adjust a personal programme of work and to learn independently.	The first element could be based upon the ability to manage yourself and meet appropriate company objectives for a defined element of work. The second element could be demonstrated by the application of the CPD cycle as recommended by IHIE – identifying personal development needs, planning to meet them, carrying out the plan, recording the outcomes and evaluating the success of the exercise.
5	An understanding of team roles, and the ability to exercise leadership.	Application of the theory of management & team working in the context of real and demonstrable responsibility.
6	The ability to learn new theories, concepts, methods, etc, in unfamiliar situations.	Knowledge & application of theory, method/work study, etc. Method statements. Risk assessment. This could be part of the inter-disciplinary project.
7	Knowledge of new and emerging technologies.	Examples from the workplace of innovative solutions. Study of professional & trade journals and the internet. Private study.
8	Knowledge of mathematical and computer models.	Use of IT to manage workplace tasks and problems, eg. Design, estimating and project management software packages.
9	An understanding of a wide range of concepts, including some outside engineering.	SWOT and PESTLE analyses – strengths, weaknesses, opportunities and threats; and political, economic, social, technological, legal & environmental factors.
10	Application of innovative design processes in unfamiliar situations.	The successful exploitation of new ideas, and their application in the workplace.
11	Extensive knowledge and understanding of management and business practices.	Application of the theory of office/site administrative & management procedures, Business improvement models – eg. IIP, ISO, EFQM.
12	The ability to evaluate and balance commercial and safety risks.	This can link with 3. above. Design planning and site planning will involve financial and construction risk assessment. Budget preparation and control.
13	A thorough understanding of current engineering practice and its limitations.	Study of professional & trade journals and the internet. Private study. Critical use of standards and codes of practice.
14	Extensive knowledge and understanding of a wide range of engineering materials and components.	Graduates should keep a log of their experiences, and could prepare a report for assessment.
15	The application of engineering techniques in a range of commercial and industrial constraints.	An introduction to: different forms of contract and measurement; different sorts of site – small/big, urban/rural; different forms of funding and payment.

ANNEX 2

FURTHER LEARNING AND TRAINING REPORT

Important Advice

- Ensure your Report:
 - captures your involvement on a substantial engineering project or scheme
 - explains, not describes
 - provides analysis, not discussion
 - provides evaluation, not opinion
 - explicitly refers to engineering knowledge not in your initial degree.
- Ensure your Report is **not**:
 - a review of your experience or employment responsibilities
 - concerned with your managerial or organisational competency or experience
 - like a professional review report.
- If your work is confidential, please get clearance from your company and warn us. IHIE will make every effort to maintain confidentiality.
- Aim for 3,000 – 5,000 words: let quality not quantity be your guide.
- You could submit a report you authored with a covering explanation.
- Focus on demonstrating your academic knowledge and understanding of the principles that underpin your work.
- Include key calculations, engineering drawings, diagrams and appropriate references.
- Further Learning depends on achieving the Learning Outcomes and **not** adding up time spent on various activities.