

Improving the world through engineering

CEng FURTHER LEARNING GUIDANCE

These guidance notes are intended to complement the Further Learning Individual Assessment Form by providing information that you should consider before completing your form.

1. PERSONAL DETAILS:

Please list your current details. If you are a recent graduate or not a member of the IMechE, you can apply for [Associate Membership](#) by contacting the membership helpdesk on 0845 226 9191

2. ACADEMIC QUALIFICATIONS:

Please identify if your degree is accredited by completing the [Qualification Checker](#).

If your qualification is not accredited, or you have no formal qualifications the Academic Assessment Committee (AAC) can assess your academic achievements for either CEng or IEng registration. The AAC can either accept your qualifications as they are or recommend further steps to enable you to meet the criteria.

This assessment must be completed before completing a Further Learning application, as the outcome will determine whether further learning is necessary.

On receipt of the completed application form your proposal will be assessed against the appropriate benchmark:

- **Incorporated Engineer** – the benchmark is Bachelors level knowledge
- **Chartered Engineer** – the benchmark is Masters level knowledge

3, 4 & 6. ADVISOR/MENTOR DETAILS:

If claiming any work based learning: the Advisor/Mentor will authenticate and sign off your completed Further Learning Evidence once your plan has been fully completed and approved.

This Mentor or Advisor will typically be a registered engineer at the relevant level you are working towards, i.e. IEng or CEng, and be someone you work with or know well.

Additional Features: This section is useful to give an overview of your work and experiences and may assist the committee to get a better understanding of any work based knowledge you are claiming.

5A. ACQUISITION OF DEPTH OF KNOWLEDGE :

The two statements should be met/satisfied by highlighting subjects which show a deepening of knowledge in Engineering and Scientific topics to Masters level.

You should consider using a combination of high level general and specialist engineering knowledge and understanding, which enables you to optimise the application of existing and emerging technologies to demonstrate:

- A) a systematic understanding of knowledge, and a critical awareness of current problems and/or new insights much of which is at, or informed by, the forefront of your academic discipline, field of study or area of professional practice;*
- B) conceptual understanding that enables you to evaluate critically current research and advanced scholarship in your chosen area of discipline;*

This demonstration may be by knowledge gained in the work place or combined with academic study. However, if you are a recent graduate you may find demonstrating this quite a difficult task so the inclusion of academic modules may be advisable.

If selecting academic modules, consider the content to ensure they are of a pure engineering or science base and ensure the module descriptor clearly demonstrates the depth of knowledge; key descriptive words to look out for within the module descriptors are:

- an advanced understanding of...;
- an in depth coverage of... ;
- be able to critically analyse...;

the associated reading list should also show books and published paper/theories with current editions and recent publishing dates.

Summary: For each statement you need to summarise how you will fulfil this. You should give a summary of the knowledge clearly showing: how and what will be covered indicating a time frame, level of knowledge and where this will take place:

For each statement you may want to consider approx x1 15-20 credit modules or comparative learning time of approx 150-200 hours

- Associated Learning Outcomes: After the summary, you should list what knowledge gain will be undertaken. This will be in the form of statements which explicitly explain in detail, what will you will be learning

If claiming MSc modules – please attach full module descriptors ensuring the academic learning outcomes are detailed within them.

e.g 1.

Summary:

Complete a distance learning 20 credit masters module from the MSc xyz in 'Advanced Materials' from the university of xyz. The module will be taught over 4 weeks and requires 150 student effort hours. The module will focus areas such as: thermal, optical and magnetic material properties; evaluation of structure and properties of polymers; Composites such as matrices, strength and stress transfer, anisotropy,

laminates, structural foams and processing advances and comparative analysis of unconventional manufacturing processes and developments.

- Associated Learning Outcomes:
- Learn how to derive performance indices for selecting materials and manufacturing processes
- Understand how to critically evaluate the relationship between material attributes and modes of structural failure
- Have an understanding of properties of materials in terms of their constituents and structure at both macro and microscopic level
- Learn how to modify component design to ease orientation and assembly

Assessor Details:

Name: University of xyz, 1 week coursework and final 2 hour exam

Job Position: university set examination papers

Expertise in area: university set examination

5B. ACQUISITION OF BREADTH OF KNOWLEDGE:

The 3 statements should be met/satisfied, by highlighting subjects which show a broadening of knowledge through a combination of: general and specialist engineering knowledge; application of appropriate theoretical and practical methods to analyse and solve engineering problems; and, knowledge in technical and commercial leadership: typically giving a **minimum of two** examples for each statement, to demonstrate:

A) a comprehensive understanding of techniques applicable to your own research or advanced scholarship

B) originality in application of knowledge, together with a practical understanding of how established techniques of research and enquiry are used to create and interpret knowledge in your chosen discipline;

C) conceptual understanding that enables you to evaluate methodologies and develop critiques of them and, where appropriate, to propose new hypotheses

Summary: For each statement you need to summarise how you will fulfil this. You should give a summary of the knowledge clearly showing: how and what will be covered indicating a time frame, level of knowledge and where this will take place.

For each statement you may want to consider approx x2 15-20 credit modules or comparative learning time of approx 300-400 hours

- Associated Learning Outcomes: After the summary, you should list what knowledge gain will be undertaken. This will be in the form of statements which explicitly explain in detail, what will you will be learning

If claiming MSc modules – please attach full module descriptors ensuring the academic learning outcomes are detailed within them.

e.g 1.

Summary:

Suggested topic areas to demonstrate a broadened knowledge and understanding:

- Engineering principles and ability to apply them to analyse key engineering processes

- Knowledge to apply quantitative methods and computer software relevant to your work in order to solve engineering problems
- Wide knowledge of design processes and methodologies and how to apply them and adapt to unfamiliar situations
- Knowledge to enable you to generate innovative designs for products, components to fulfil new needs
- Understand how to define and identify design constraints including environmental and sustainable limitations
- Extensive knowledge of management techniques and business practices to achieve engineering objectives
- Understand legal and ethical framework governing engineering activities at work

Assessor Details:

Name: Mr A Jones CEng FIMechE

Job Position: Senior Engineer of Company xyz, for the last 7 years.

Expertise in area: Published papers on subject/has been working as senior engineer in xyz topics, leading projects in area for 8 years etc.

Overall:

Typically, once FL has been completed to masters level for CEng, you will then be able to:

- deal with complex issues both systematically and creatively, make sound judgements in the absence of complete data, and communicate their conclusions clearly to specialist and non-specialist audiences
- demonstrate self-direction and originality in tackling and solving engineering problems, and act autonomously in planning and implementing tasks at a professional or equivalent level;
- continue to advance your knowledge and understanding, and to develop new skills to a high level.

and will have:

the qualities and transferable skills necessary for employment requiring

- the exercise of initiative and personal responsibility;
- decision-making in complex and unpredictable situations; and
- the independent learning ability required for continuing professional development.

5A & 5B. ASSESSMENT STYLE AND METHOD: (ASSESSOR DETAILS)

All work based learning must have written evidence of assessment against a set of defined assessment criteria. The 'criteria' are usually dictated by the Learning Outcomes identified in the plan. Hence these must be detailed and explicit on what learning should be undertaken. All assessment must be rigorous and robust

The Associated Learning outcomes will form the basis of a viva voce assessment for work where there is no formal examination process – the IMechE work based learning assessment form should be used to record this.

The form of assessment may vary as appropriate, but most often it will be done through: coursework, dissertation, formal examination and/or formal presentation; all followed by a viva voce (10-15 minute Q&A session), with your allocated assessor.

MPDS reports and Course Attendance Certificates will not be a form of recording Further Learning.

7. RECORD OF ACHIEVEMENT:

You must keep an accurate record of your achievements whilst undertaking your Further Learning.

When you have completed your Further Learning, you will need to submit authenticated evidence of assessment to the IMechE for review (i.e. authenticated certificates or work based learning assessment forms showing assessment/exam results.)

A professional person such as a Chartered Engineer, a Personnel Manager or Chief Executive (the person nominated in section 3 of this plan), should authenticate and sign off the final completed record.

Notes - Please read the Further Learning Guidelines that accompany this application form. The work based learning assessment form is electronic and the text boxes are expandable so that assessors should not be inhibited by the displayed size of the text box. We should emphasize that the entries should be clear and as extensive as necessary to convey the meaning unambiguously to a reader without knowledge of the context of the "study".

8. ENGAGEMENT:

The signature and date show your commitment to your plan and to confirm all the information is true to the best of your knowledge. Any revisions to your plan must be submitted as an entire new application for review.

9. SUPPORTING INFORMATION:

A list of accredited Company Schemes and University courses are listed at the following link:

<http://www.imeche.org/membership/academic/further/>

If you are completing your Further Learning through one of these companies or courses then you **do not** need to complete this form. Instead, inform us which route you are undertaking and the year that you start and intend to finish.

Assessment of Individual Further Learning Applications

An IMechE Committee that comprises experienced and knowledgeable Chartered Engineers representing industry and academia will assess your proposed Further Learning. It is important that you clearly define the content of your proposed Further Learning and supply any additional supporting information. There is currently no fee for submitting a Further Learning Plan.

X1 complete copy of the form (including relevant supporting information) should be sent to: Further Learning, Membership, Accreditation & Professional Development Department, Institution of Mechanical Engineers, Birdcage Walk, London SW1H 9JJ

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