

## Improving the world through engineering

### IEng 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 initial qualification 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 demonstration of a deepened knowledge in Engineering Analysis and Design topics to Bachelors level understanding to show:

- A) *a systematic understanding of key aspects of your field of study, including acquisition of coherent and detailed knowledge, at least some of which is at or informed by, the forefront of defined aspects of your chosen discipline;*
- B) *conceptual understanding that enables you to describe and comment upon particular aspects of current research, or equivalent advanced scholarship, in your chosen discipline;*

This demonstration may be by knowledge gained in the work place or combined with academic study.

If selecting academic modules, consider the content to ensure they are Design, Engineering or Science based and ensure the module descriptor clearly demonstrates the depth of knowledge, this will typically be at FHEQ level 6, or NVQ4, SVQ4 or final year modules from a BSc or BEng degree; example wording to look out for within the module descriptors are:

- Recall the basic laws which must be applied and conditions identified to solve problems
- Explain the principles and application of xyz methods;
- be able to calculate...;
- Explain the use of laws and theories...

The knowledge gained at this level will enable you to: “critically review, consolidate and extend a systematic and coherent body of knowledge, utilising specialised skills across an area of study; critically evaluate concepts and evidence from a range of sources; transfer and apply diagnostic and creative skills and exercise significant judgement in a range of situations; and accept accountability for determining and achieving personal and/or group outcomes”. (Taken from Level 6: QAA Generic Credit Framework Level Descriptor).

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 credit module or comparative learning time of approx 150 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 BSc/BEng modules – please attach full module descriptors ensuring the academic learning outcomes are detailed within them.

e.g. Summary:

Complete a distance learning 15 credit final year module from the BSc xyz in 'Mechanical Engineering' from the university of xyz. The module will be taught over 4 weeks and requires 150 student effort hours. The module will focus on areas such as: evaluating the dynamic response requirements of a proposed machine design and create workable proposals for its safe and effective operation. Understanding the link between vibration and fatigue failure using knowledge gained on vibration of continuous systems, rotor dynamics, signal processing and control analysis.

Associated Learning Outcomes:

- Understand how to explain and solve simple problems involving active or passive control analytically;
- Understand how to explain and solve more complex control and signal analysis problems using MATLAB;
- Learn how to predict the vibration response of multi-DOF lumped mass systems and beams/shafts in bending and torsion;
- Be able to predict fatigue life of components by linking their vibration response to alternating stress and be able to evaluate fatigue calculations.
- Understand and be able to explain the difference between active and passive control and advantages of them;

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 four statements should be met/satisfied by highlighting subjects which show a demonstration of a broadened knowledge in a combination of: underpinning science, maths and engineering principles; knowledge that affects engineering practical application; management; and, economic/legal topics, typically giving examples for each statement, to demonstrate:

- B) an ability to deploy accurately established techniques of analysis and enquiry within your chosen discipline;*
- C) conceptual understanding that enables you to devise and sustain arguments, and/or to solve problems, using ideas and techniques, some of which are at the forefront of your chosen discipline:*
- D) an appreciation of the uncertainty, ambiguity and limits of knowledge;*
- E) the ability to manage your own learning, and to make use of scholarly reviews and primary sources (e.g. refereed research articles and/or original materials appropriate to your chosen discipline).*

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

e.g. Summary:

Suggested topic areas to demonstrate a broadened knowledge and understanding:

- Gain knowledge and understanding of mathematics necessary to support application of key engineering principles
- Understand how to use the results of analysis to solve engineering problems, apply technology and implement engineering processes.
- Understand how to apply a systems approach to engineering problems through know-how of the application of the relevant technologies
- Understand how to ensure fitness for purpose (including operation, maintenance, reliability etc)
- Knowledge and understanding of engineering workshop and laboratory practice
- Understand how to use and apply information from technical literature
- Understand appropriate codes of practice and industry standards and how to apply them
- Understand the principles of managing engineering processes
- Awareness of quality issues and their application to continuous improvement

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 bachelor's level for IEng, you will then be able to:*

- apply the methods and techniques that you have learnt to review, consolidate, extend and apply your knowledge and understanding, and to initiate and carry out projects;
- critically evaluate arguments, assumptions, abstract concepts and data (that may be incomplete), to make judgements, and to frame appropriate questions to achieve a solution – or identify a range of solutions – to a problem;
- communicate information, ideas, problems and solutions to both specialist and non-specialist audiences;

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 contexts; and
- the learning ability needed to undertake appropriate further training of a professional or equivalent nature.

## 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 emphasis 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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