



## Introduction to Further Learning

### Completing the Educational Base

#### 1.0 Introduction

- 1.1 The flowchart and supporting table on pages four and five of this document outline the routes open to graduates holding accredited or approved qualifications that are required to complete a period of Further Learning in order to meet the educational base for a Chartered or an Incorporated Engineer.
- 1.2 The formation of professional engineers in the UK has three stages:
- Attainment of appropriate knowledge and understanding (can be referred to as the appropriate educational base), followed by
  - A period of postgraduate development known as Initial Professional Development (IPD), culminating in a
  - Professional Review to assess and confirm that the required standards have been met.

This document outlines the routes to acquire the knowledge and understanding (i.e. meet the educational base) only.

#### 2.0 Educational Base for a Chartered Engineer

- 2.1 Under the UK Standard for Professional Competence (UK-SPEC) (2004), published by the Engineering Council UK (EC<sup>UK</sup>), the educational base for registration as a Chartered Engineer (CEng) is exemplified by:
- An integrated MEng degree, or
  - A BEng (Hons) degree with appropriate Further Learning to Masters level.
- 2.2 Further Learning comprises the additional knowledge and understanding necessary to bridge the gap between an accredited BEng(Hons), BSc (Hons) or BSc degree and an accredited MEng degree. Where appropriate, elements of Further Learning can be integrated with IPD but must be recorded and assessed separately.

### **3.0 Educational Base for an Incorporated Engineer**

**3.1** Under the UK Standard for Professional Competence (UK-SPEC) (2004), the educational base for registration as an Incorporated Engineer (IEng) is exemplified by:

- A bachelor degree in Engineering or Technology or
- A Higher National Certificate or Diploma or Foundation Degree with appropriate Further Learning to Bachelors level.

**3.2** Further Learning comprises the additional knowledge and understanding necessary to bridge the gap between an approved Higher Certificate, Higher Diploma or Foundation degree and an accredited IEng degree. Where appropriate, elements of Further Learning can be integrated with IPD but must be recorded and assessed separately.

### **4.0 Routes open to Graduates**

#### **4.1 Academic Route**

Graduates will follow an accredited academic programme of study. The list of accredited programmes is available to review on the JBM website [www.jbm.org.uk](http://www.jbm.org.uk).

Programmes of study not on the list will be assessed through the Individual Case Procedure route operated by the JBM member institutions.

#### **4.2 Employer Managed Work Based Route**

Graduates will join a scheme that has been accredited by the JBM on behalf of its member institutions. The list of employers offering accredited schemes and the detailed guidelines are available to review on the JBM website.

#### **4.3 Self Managed Route**

This is for individuals undertaking self-managed Further Learning which is not part of an accredited employer-managed work-based scheme. The same basic principles applied to the Employer Managed route also apply to these routes. The guidelines are available to review on the JBM website.

#### **4.4 Technical Report Route for demonstrating academic attainment**

The Technical Report Route option is available to all applicants wishing to gain registration as a Chartered or Incorporated Engineer but do not hold a qualification that meets the educational base requirements. The Technical Report Route may also be used as a bridge from IEng to CEng. See separate

guidance material produced by the ICE ([http://www.ice.org.uk/joining/joining\\_trr.asp](http://www.ice.org.uk/joining/joining_trr.asp)), IStructE (<http://www.istructe.org/Membership/DB/545.asp>), IHT and IHIE as appropriate.

## **5.0 Candidates that do not hold accredited or approved base qualifications**

**5.1** Graduates that do not hold an accredited bachelor degree or HNC/D qualification will need to apply for an assessment of their qualifications by one of the member institutions of the JBM using their individual case procedure route. Please see the Institutions' websites for more information.

## **6. Supporting Reading Material**

**6.1** This leaflet gives an introduction to the further learning process and other Guidelines are available on the JBM website: -

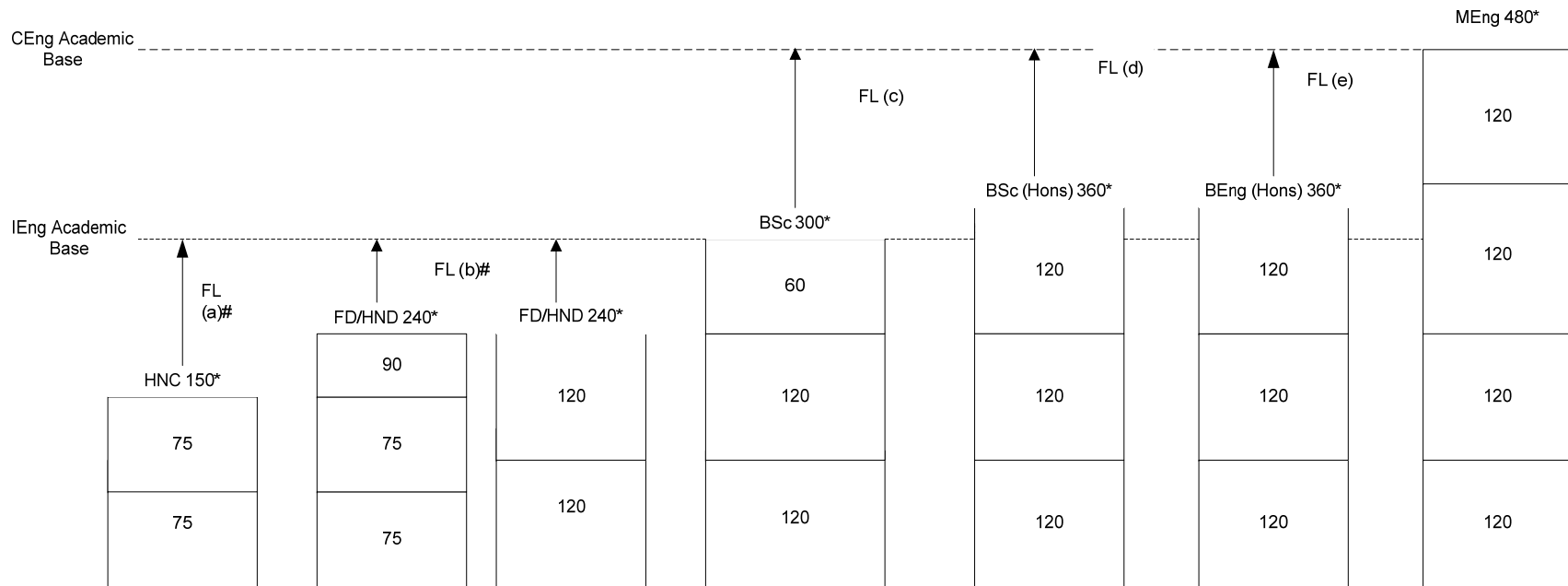
- Employer-Managed Work-Based Further Learning Programmes for Completion of the Education Base for a Chartered Engineer  
<http://www.jbm.org.uk/downloads.aspx>
- Employer-Managed Work-Based Further Learning Programmes for Completion of the Education Base for an Incorporated Engineer  
<http://www.jbm.org.uk/downloads.aspx>
- Self-Managed Work-Based Further Learning Route for Completion of the Educational Base for a Chartered Engineer  
<http://www.jbm.org.uk/downloads.aspx>
- Self-Managed Work-Based Further Learning Route for Completion of the Educational Base for an Incorporated Engineer  
<http://www.jbm.org.uk/downloads.aspx>

They should also be read in conjunction with the following publications as appropriate: -

- JBM Guidelines for MEng or IEng degree programmes  
<http://www.jbm.org.uk/downloads.aspx>
- UK-SPEC – The Accreditation of Higher Education Programmes –  
<http://www.engc.org.uk/UKSPEC>.

	<b>FURTHER LEARNING OPTIONS</b>			
<b>FURTHER LEARNING</b> <i>(refer to figure A on page 5 for the meaning of IFL())</i>	<b>ACADEMIC ROUTE</b>	<b>EMPLOYER MANAGED WORK BASED ROUTE</b>	<b>SELF MANAGED ROUTE</b>	<b>TECHNICAL REPORT ROUTE</b>
<b>FL (a) for IEng</b> FL to comprise ≥ 120 credits ≥ 1200 hours total learning ≥ Typically 360 hours contact	<b>For IEng See Annex A</b> <ul style="list-style-type: none"> <li>Complete HND + FL (b)</li> <li>Complete HNC + FL (a)</li> <li>Complete HNC + 2 Graduate Diploma papers to bring qualification up to HND level + FL (b) for HND</li> <li>Complete BSc</li> <li>Complete BSc (Hons)</li> <li>Complete BEng (Hons)</li> </ul>	<ul style="list-style-type: none"> <li>Complete technical deepening</li> <li>Typically 300 – 400 hours contact</li> <li>≥ 1200 hours total learning</li> <li>≥ typically 3 years</li> </ul>	<ul style="list-style-type: none"> <li>Complete technical deepening</li> <li>300 – 400 hours contact</li> <li>≥ 1200 hours total learning</li> <li>≥ typically 3 years</li> </ul>	This option is also available. Refer to separate guidance produced by the ICE, IStructE, IHT or IHIE.
<b>FL (b) for IEng</b> FL to comprise ≥ 60 credits ≥ 600 hours total learning ≥ Typically 180 hours contact	<b>For IEng</b> <ul style="list-style-type: none"> <li>Complete BSc</li> <li>Complete BSc (Hons)</li> <li>Complete BEng (Hons)</li> <li>IStructE AM examination,</li> <li>Complete 4 level 3 units from the final year of an accredited BSc in Civil Engineering</li> </ul> <b>For CEng</b> <ul style="list-style-type: none"> <li>Complete BSc + FL(c )</li> <li>Complete BSc (Hons) +FL (d)</li> <li>Complete BEng (Hons)+FL (e)</li> </ul>	<ul style="list-style-type: none"> <li>Complete technical deepening</li> <li>Typically 150 – 200 hours contact</li> <li>≥ 600 hours total learning</li> <li>≥ typically 2 years</li> </ul>	<ul style="list-style-type: none"> <li>Complete technical deepening</li> <li>150 – 200 hours contact</li> <li>≥ 600 hours total learning</li> <li>≥ typically 2 years</li> </ul>	This option is also available. Refer to separate guidance produced by the ICE, IStructE, IHT or IHIE.
<b>FL (c ) for CEng</b> FL to comprise ≥180 M credits ≥ 1800 hours total learning ≥ Typically 540 hours contact	<b>For CEng See Annex B</b> <ul style="list-style-type: none"> <li>Complete accredited Technical MSc or</li> <li>Complete 5 Graduate Diploma papers from the ECUK Examination + FL (d) for BEng (Hons)</li> </ul>	<ul style="list-style-type: none"> <li>Complete technical deepening</li> <li>Typically 500 – 600 hours contact</li> <li>≥ 1800 hours total learning</li> <li>≥ typically 4 years</li> </ul>	<ul style="list-style-type: none"> <li>Complete technical deepening</li> <li>500 – 600 hours contact</li> <li>≥ 1800 hours total learning</li> <li>≥ typically 4 years</li> </ul>	This option is also available. Refer to separate guidance produced by the ICE, IStructE or IHT.
<b>FL (d) for CEng</b> FL to comprise ≥ 120 M credits ≥1200 hours total learning ≥ Typically 360 hours contact	<ul style="list-style-type: none"> <li>Complete accredited Technical MSc</li> </ul>	<ul style="list-style-type: none"> <li>Complete technical deepening</li> <li>Typically 300 – 400 hours contact</li> <li>≥ 1200 hours total learning</li> <li>≥ typically 4 years</li> </ul>	<ul style="list-style-type: none"> <li>Complete technical deepening</li> <li>300 – 400 hours contact</li> <li>≥ 1200 hours total learning</li> <li>≥ typically 4 years</li> </ul>	This option is also available. Refer to separate guidance produced by the ICE, IStructE or IHT.
<b>FL (e) for CEng</b> FL to comprise ≥ 120 M credits ≥ 1200 hours total learning ≥ Typically 360 hours contact	<ul style="list-style-type: none"> <li>Complete accredited MSc</li> </ul>	<ul style="list-style-type: none"> <li>Complete broadening</li> <li>Typically 200 – 300 hours contact</li> <li>≥ 1200 hours total learning</li> <li>≥ typically 3 years</li> </ul>	<ul style="list-style-type: none"> <li>Complete broadening</li> <li>200 – 300 hours contact</li> <li>≥ 1200 hours total learning</li> <li>≥ typically 3 years</li> </ul>	This option is also available. Refer to separate guidance produced by the ICE, IStructE or IHT.

Figure A



(\*10 credits = 100 hours of learning = 30 hours of contact)

#Once FL (a) or FL (b) have been completed candidates who wish to progress to CEng would need to complete FL (c).

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## Annex A

### **EC UK Academic Routes to IEng Registration for employees in Engineering in the Construction Industry and its related Professions**

#### **Introduction.**

Employees in engineering in the construction industry and its related professions will have a wide variety of initial academic qualifications and will receive employer support to their further education in varying degrees. This Annex attempts to map the major routes to obtaining the educational base for registration as an Incorporated Engineer (IEng) by one of the constituent professions represented at the Joint Board of Moderators (JBM).

The standard route is based on accredited educational awards and appropriate industrial experience followed by success at a professional review. This academic route allows candidates, whether on an employer-managed or self-managed basis, to complete an academic portfolio of evidence, which clearly demonstrates the required standard for IEng registration.

For candidates who are unable, in whole or in part to complete such a portfolio of evidence, all Institutions/Institutes have a Technical Report Route (TRR) to meet individual cases. For further information on this route, please contact the relevant JBM member institutions.

#### **Routes to IEng**

The routes to IEng, illustrated, presuppose that individuals will complete an HNC in Civil Engineering, or its equivalent. This award is readily available in Colleges and Universities (under Edexcel licence) throughout the UK, excluding Scotland.

With exception of the Technical Report Routes and Accredited Employer Managed schemes, progression to the educational base for registration as an Incorporated Engineer is achieved by formal study and external assessment of ability. The progression beyond the 240 CAT's points at levels 1 / 2 signified by an HND in Civil Engineering may be achieved in a number of ways.

- Completion of an Accredited BSc in Civil Engineering.
- Completion of an Accredited BSc (Hons) in Civil Engineering.
- Success in the AM Exam of the I StructE
- Completion of four level 3 units from the final year of an Accredited BSc in Civil Engineering (4x 15 CAT's)

Employees may also have achieved a Foundation Degree in Civil Engineering. Appropriate awards would carry a 240 CAT's point value and equate to the HND in Civil Engineering.

#### **Accredited Employer Managed Schemes.**

Organisations who operate an Employer Managed Scheme will do so to ensure that they have an effective and efficient work force. They will wish to develop the individual's potential to fullest

extent. To this end a Company scheme could combine 'in company training and education' with aspects of the routes previously described.

In some instance it will be appropriate, because of operational necessity, to present to the JBM for accreditation a wholly 'In Company Scheme'. Such a scheme will need to show evidence of:-

- How the criteria (Annex A) for IEng are to be met.
- Assessment procedures and processes
- Internal company verification procedures and processes.
- External verification procedures and processes.

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## Annex B

### Academic Routes to CEng Registration for employees in Engineering in the Construction Industry and its related Professions

#### Introduction

Employees in engineering in the construction industry and its related professions will have a wide variety of initial academic qualifications and will receive employer support to their further education in varying degrees. This Annex attempts to map the major routes to obtaining the educational base for registration as a Chartered Engineer (CEng) by one of the constituent professions represented at the Joint Board of Moderators (JBM).

The standard route is based on accredited educational awards and appropriate industrial experience followed by success at a professional review. This academic route would allow candidates, whether on an employer-managed or self-managed basis, to complete an academic portfolio of evidence, which clearly demonstrates the required standard for CEng registration.

For candidates who are unable, in whole or in part to complete such a portfolio of evidence, all Institutions/Institutes have a Technical Report Route (TRR) to meet individual cases. For further information on this route, please contact the relevant member institutions.

#### Routes to CEng

The routes to CEng presuppose that individuals will complete an accredited BEng (Hons) degree in Civil Engineering, or its equivalent at CEng level.

With exception of the Technical Report Routes and Accredited Employer-Managed or Self-Managed schemes, progression to the educational base for registration as a Chartered Engineer is achieved by formal study, normally by completion of an accredited MSc degree programme (please refer to the JBM website - [www.jbm.org.uk](http://www.jbm.org.uk) – for a list of accredited degree programmes).

If the MSc you are intending to study is not shown on this listing you will need to apply to one of the JBM member institutions for an assessment of your package of qualifications via the Individual Case option. Please refer to the JBM member institutions websites for more details.

Please note that research degrees (e.g. MSc by research, MPhil, EngD and PhD) are not normally considered for approval as Further Learning at this time, and candidates with such awards should proceed via the Individual Case option for institution membership and CEng registration. The JBM are unable to accredit these programmes due to the bespoke nature of the research topics.

#### Routes to CEng for holders on an IEng accredited bachelor degree

If you hold an accredited IEng level honours degree, the JBM institutions would recommend that you consider completing a technical MSc from the JBM's list of accredited post-graduate degree programmes. On completion of this MSc you will need to proceed via the Individual Case option. Please refer to the JBM member institutions websites for more details.