

TRAINING FOR IENG AND ENGTECH

Your Good Practice Guide

Are you Investors in People accredited?

Do you value your engineers?

Do your specialist practitioners need more support?

Do you want helpful, authoritative advice on their education and training?

IHE offers advice and support and can accredit your Training Schemes.

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This leaflet is for companies and local authorities.

It gives guidance on what constitutes a good training and development programme for aspiring incorporated engineers and technicians.

It explains how you can gain IHE approval for your training scheme and the benefits of doing so.

THE BENEFITS TO YOU OF STRUCTURED TRAINING

- Improves performance
- Allows you to recruit the better trainees
- Develops the staff skills you want to improve your business or service
- Motivates and rewards staff

IHE advice allows you to develop a training programme to suit your work needs and gives your trainees the most efficient route to their professional qualification. We remain on call to support your training provision.

IHE can provide competence standards for many specialist areas – traffic signals, highway maintenance, inspectors, development management and traffic sign design – many of which have DfT, HA or ADEPT endorsement. These allow you to better tailor your training to meet industry training needs.

Approval of your company scheme is a quality mark. And it reassures staff that you are committed to their specialist development needs.

IHE approval also allows you to assess your trainees' initial development (IPD) in-house subject to IHE monitoring.

This speeds up their Professional Review.

You can use the "fast track" to IHE accreditation if your organisation is an Investor in People, is ICE approved or is an NVQ Assessment Centre.

You do not need different schemes for different institutions.

FAST TRACK IHE APPROVAL

Companies and authorities which are Investors in People or are already accredited by an Engineering Council institution such as ICE or are Assessment Centres for relevant NVQs/SVQs enjoy a fast track.

Working with IHE you benefit from the Institute's experience and expertise as a leading specialist institution with a unique understanding of highway and transport engineering for the incorporated sector and which now offers progression routes up to CEng.

You will already have quality, monitoring and reward systems in place which meet most Engineering Council requirements.

IHE just additionally needs to be satisfied that you will prepare staff for registration through the IHE, using the Engineering Council Statements of Competence as training objectives.

What to do

1. Compare your existing scheme with the IHE Checklist.
2. Send IHE a summary of your training and development procedures. (This could be part of your IIP or ICE paperwork.) Tell IHE where in your existing paperwork our Checklist criteria are met: for example, cross reference the relevant sections in your training scheme to the headings in a copy of the IHE Checklist or vice versa.
3. Add an additional statement confirming to your staff that the company will support engineers preparing for registration through IHE and explaining that you will provide experience which will allow them to comply with the Engineering Council statements of competence and commitment". (It might be helpful to offer to support IHE training for mentors and applicants).
4. IHE will assess the paperwork. An IHE training advisor may visit the company or may arrange to visit later to check on delivery.
5. The assessment is put to the next IHE Committee after which the Secretary will write formally.

Approval is normally for 5 years.

IHE APPROVAL FOR YOUR COMPANY (*not Fast Track*)

Approval aims to ensure that training/Initial Professional Development programmes provide a structured framework for gaining experience, learning and training, with mentoring and support which will allow trainees to meet the Engineering Council's specifications.

IHE provides companies with a periodic external audit by an institution which understands the needs of specialist engineers.

The attached IHE Checklist summarises what the Institute looks for in your scheme.

The good practice advice on the next few pages elaborates on each of the requirements.

If you are not on the Fast Track, follow this procedure to apply for IHE approval

1. Check out your scheme against the advice below and the "Good Practice Checklist".
2. Send IHE a copy of your training scheme. It may help to cross-reference the relevant sections in your training scheme to a copy of the IHE Checklist.
3. IHE will respond with comments.
4. You prepare a final submission.
5. An IHE training advisor will then visit to review resources, meet staff and confirm the scheme.
6. A second advisor will look at his report and your paperwork.
7. Their joint recommendation will be put to the next IHE Committee.
8. The IHE Secretary will write formally.

Approval is normally for five years.

GOOD PRACTICE ADVICE

Your training statement should cover:

1. Your scheme aims and objectives
2. The scope of the training programme
3. Roles and responsibilities for training and development in your organisation
4. Arrangements for supervision, support, monitoring and recording
5. Opportunities for further and higher education

Advice on each of the statement headings is given below

Include any available data of the success of the scheme to date.

Remember to use existing company documents wherever possible.

1. YOUR SCHEME'S AIMS AND OBJECTIVES

The period during which engineers and technicians acquire and develop the skills they need to work in their chosen field is characterised by the Engineering Council as "Initial Professional Development" (IPD). It embraces training and learning from experience in posts of increasing responsibility in preparation for Engineering Council registration.

'IPD' builds on trainees' education and qualifications:

- To extend their knowledge
- To apply engineering principles to real problems at work
- To develop their professional competence to perform the role and accept the responsibilities of an incorporated engineer or technician
- To develop their professional commitment and ethical understanding
- To develop inter-personal, team and communication skills
- To develop the ability to manage themselves and others

You should aim to allow staff to progress to work on projects where they can demonstrate independent technical judgement with responsibility for people and resources within financial, safety, statutory and commercial constraints.

The specific training objectives IHE looks to engineers to achieve are described in the Statements of Competence and Commitment published by the Engineering Council. They are set out in IHE *Documents IE3 and ET3*, together with guidance from the Institute for engineers in highways, traffic, transportation and allied fields. In addition we can advise on learning objectives for specific areas of work such as maintenance.

In their professional review, trainees need to demonstrate that they have met these statements Objectives with documentary evidence and certified by a mentor. Only when this is achieved can they come for the review interview.

Typically three to five years' structured training and experience, post-degree, is needed to prepare IEng trainees to meet the Engineering Council's specification.

2. TYPICAL TRAINING PROGRAMMES

Initial Development Programmes are likely to include:

- Induction into work and into the company and its external relationships
- Instruction in safe working practices and employees' responsibilities for safety
- Opportunities to develop independent responsibility



- Opportunities to exercise incorporated or technician responsibilities
- Monitoring and recording systems
- Mentor support to enhance your trainees' ability to plan and to reflect on learning and experience
- Employer-specific training to meet company objectives

It is important that trainees develop a professional attitude and commitment.

Student Membership of IHE is free and all student members enjoy half price fees for IHE courses.

Please contact IHE to ensure that trainees meet or will meet Engineering Council academic requirements.

Resources

www.theihe.org/membership/

IHE Document E1:	<i>All routes to registration</i>
IHE Document ET3:	<i>Technician Statements of Competence</i>
IHE Document IE3:	<i>Incorporated Statements of Competence*</i>
IHE Document CE3:	<i>Chartered Statements of Competence*</i>
IHE Professional Certificates	<i>For specialist competences</i>

* These list the Engineering Council Statements of Competence and Commitment together with IHE explanatory guidance and advice on evidence.

3. ROLES AND RESPONSIBILITIES

Trainees need informed support and assistance to realise their potential.

Training Engineers/Supervising Engineers are responsible for:

- Devising and directing the company scheme.
- Gaining approval from an Engineering Council institution.
- Meeting trainees annually to review and stock take.
- Arranging training for line managers to enable them to support their staff.
- Signing and registering Training Agreements (if used).
- Agreeing or approving additional continuing training and education.
- Liaising with colleges.

Line Managers are responsible for:

- Giving support, advice and guidance to trainees at appraisals and at periodic (quarterly) reviews.
- Monitoring trainees' training and development.
- Reviewing and authenticate trainees' portfolios of documentary evidence.
- Completing a formal report on completion of Initial Development.
- Confirming the professional review report and completing the Employer Proposer Statement (Form 303).

Line managers may also act as Mentors for trainees' Initial Development submissions.

Mentors are responsible for:

- Assisting trainees to prepare their Review submission
- Authenticating the Review submission and documents

Trainees are asked to:

- Adopt a responsible attitude and act ethically.
- Work safely
- Sign a Training Agreement (if offered).
- Keep appropriate records and plans.
- Plan their professional development
- Join an Engineering Council institution.
- Attend meetings of professional institutions.
- Read and apply Engineering Council's codes and guidelines.

IHE, as an Engineering Council Licensed Body, is responsible for:

- Ensuring that training programmes meet Engineering Council's standards
- Auditing training provision
- Registering Training Agreements, their transfer and completion (on request)

Some companies offer **Training Agreements** to the staff setting out the rights and responsibilities of both parties. IHE is able to act as an external guarantor of such Agreements.

Resources

IHE Local Training Advisors

IHE Code of Conduct

Royal Academy of Engineering Statement of Ethics

IHE Training Agreement

4. SUPERVISION, SUPPORT, MONITORING AND RECORDING

• Mentoring

Trainees need support, advice and guidance from a mentor as they prepare for their Professional Review. Mentors may be line managers, recently qualified colleagues or other designated engineers.

Regular mentor meetings allow trainees to:

- Reflect on what they have achieved
- Compare their achievements against Engineering Council Statements of Competence and Commitment
- Identify remaining gaps and what is needed to bridge them
- Discuss options to open doors to new or different development
- Identify realistic milestones
- Summarise what has been successful and what to do next: The Action Plan

Resources

www.theihe.org/membership/forms-and-guidance/

Mentoring; Good Practice (IHE Document C)

IPD Action Plan (Form 208)

IPD Record (Form 206)

IPD Line manager review (Form 207)

www.theihe.org/protected/mentoring (Login required)

- **Management**

Normally, a Training Engineer/Supervising Engineer directs the training scheme and meets trainees annually to take stock and set new targets. This may be an extension of the Annual Appraisal.

At the end of training, the Training Engineer/Supervising Engineer meets the trainee to complete a final review to confirm completion of initial development objectives. The mentor may also attend this final review. It is helpful to cross reference the signing off statements to work completed in training.

When the aspiring registered engineer puts together their Professional Review submission it needs clearance by, and the support of, an Employer Proposer using Form 301. A mock review is also helpful.

www.theihe.org/protected/mentoring (Login required)

Resources

Mentoring: a guide to best practice (Document C).

Employer Proposer Report (Form 301)

- **Record Keeping**

Trainees need to record their experience, evaluate and reflect on their development, and plan how to achieve their training objectives as set out by the Company and in the Engineering Council Statements of Competence and Commitment Documents [IE3](#) or [ET3](#).

Typically, trainees should keep a portfolio comprising:

- Academic records and reports.
- A work diary.
- IPD (Quarterly) Reports (Form 206) reflecting on work done.
- IPD Line Manager Reviews (Form 207).
- Action Plans setting out how to approach meeting development needs or Annual Appraisals (Form 208)
- Annual professional development plans (Form B02)
- Records of off the job training.
- Final assessment, on completion of initial development, by the trainee and Training Engineer/Supervising Engineer.

5. OPPORTUNITIES FOR ACADEMIC EDUCATION AND FOR CONTINUING DEVELOPMENT

- **Initial Education**

Registered engineers need an academic qualification acceptable to the Engineering Council.

The benchmark qualifications are:

- For CHARTERED ENGINEER: BEng plus Masters or a MEng
- For INCORPORATED ENGINEER: Incorporated degree in engineering or technology (BSc or BEng).
- For ENGINEERING TECHNICIAN: a level 3 qualification (NC, NVQ3)

For IEng an HND or Foundation Degree in engineering is also acceptable if the employer can provide further appropriate experience and support, as an HND may be topped up by transferring to a part-time degree or by work based 'further learning' ([Document IE4](#)) which can combine short courses with structured learning on the job.

IHE accepts any qualification in any discipline approved by the Engineering Council (www.engc.org.uk) and accredits university and college civil and transport courses through the Joint Board of Moderators, a partnership of IHE, CIHT, IStructE and ICE. This list is published on www.jbm.org.uk.



Employers are expected to provide opportunities for staff to maintain and develop their knowledge and skills.

The JBM offers an accreditation scheme for employers offering formal Further Learning schemes.

If further learning equivalent to degree level is not available, engineers can progress through the Technical Report Route. In which case, they will need to engage in an engineering project which will extend and enhance their technical knowledge and skills to degree level. IHE Document IE4 provides more guidance.

Other qualifications or combinations of qualifications can be assessed by IHE under the "Individual Case Procedure". Applicants should send copies of their certificates, a CV and as much syllabus information as possible.

Resources

Engineering Council accredited courses (www.engc.org.uk)

JBM Accredited Courses in civil engineering and associated disciplines (www.jbm.org.uk)

IHE Document F/Eng: Further Learning for IEng

IHE Document IE4: Other routes to IEng

- **Continuing development**

Trainees are expected to adopt a structured approach to their personal development. Professional development plans and records form part of their Incorporated Professional Review. Trainees need seven "CPD Days" of formal off the job education or training in the two years before their IEng Review. These should cover technical and managerial topics and can include institutions' branch events and in-house and video courses. They will need two days on safety and one on sustainability issues. Aspiring Technicians will need three 'CPD days' with one each on safety and sustainability.

Communication courses are helpful as engineers need to show written and verbal presentation skills at their review.

Resources

IHE Document B; Moving Ahead: your guide to continuing professional development

Institute CPD forms B01, B02, B03, B04 (Also on www.ihe.org.uk)

- **IHE Professional Certificates**

These new qualifications are designed to attest competence in specialist disciplines and are available independently or alongside a Professional Review. Two schemes – Transport Development Management and Design & Maintenance of the Public Realm – can be preceded by six day assessed training programmes.

Otherwise, applicants submit a report with supporting documents demonstrating achievement of industry recognised competence.

Traffic Sign Design is endorsed by DfT, Highways Agency and ADEPT.

Traffic Signal Control is endorsed by ADEPT TSG, and Transport for London (TfL).

Competence sets are also available on Highway Maintenance, Road Safety Engineering and for Highway Inspectors. You may find it helpful to use the Competences when devising training. All the certificates have a cross reference a Directory of Training Providers.

Resources

www.theihe.org/training/ihie-professional-certificates/

TSD4: Traffic Sign Design



TSC4: Traffic Signal Control

HDC4: Highway Development Control

TRAINING FOR ENGINEERING TECHNICIANS

Traditionally, companies in our industry train aspiring incorporated engineers who then gain technician registration en route to IEng.

Now the incorporated requirements have been upgraded to degree or equivalent, companies may prefer to provide a separate career stream for technicians who need only an engineering National Certificate or a recognised NVQ/SVQ 3. Some trainees may gain an HNC and choose not to continue their education to gain a degree or equivalent.

Engineering Technicians may also come through from the craft side, the police service, construction supervision, or follow an NVQ route to registration. IHE can accommodate a variety of qualification: please always contact us if you want advice on qualifications.

The management framework for a technician scheme is the same as for incorporated staff. The training objectives are, of course, different. Consult [Document ET3](#) Technician Statements of Competence for technician training objectives.

The Technician professional review does not normally include an interview.

For further advice, talk to IHE.

Resources

www.theihe.org/membership/becoming-an-engineering-techni/

IHE Document ET1: Becoming an Engineering Technician

IHE Document ET2: Technician Professional Review

IHE Document ET3: Technician Statements of Competence

IHE TRAINING CHECKLIST

What Employer schemes should deliver

1. Scheme Aims and Objectives

Training objectives are specified covering technical, managerial, communications and interpersonal skills.

Training objectives are cross referenced to the Engineering Council Statements of Competence and

Commitment for technician and/or incorporated level

2. Training Programme

Induction into work and the organisation, its procedures and its ethos, is given.

Induction on safe working practices and employee responsibilities for safety is given at an early stage and developed throughout the training period.

Training is recorded against the training objectives and progress reviewed.

Opportunity is given to exercise technician then incorporated level responsibilities preparatory to review.

3. Systems and resources

Management responsibilities for directing and monitoring schemes are laid down.

Staff resources and budgets are sufficient to enable the training to be realised.

If made available, the training agreement sets out mutual duties and responsibilities.

4. Roles and Responsibilities

Regular supervision and mentoring is provided.

Staff roles and responsibilities are allocated.

5. Supervision, support, monitoring and recording

Trainees are regularly mentored and reviewed.

Managers and mentors are trained and supported

An annual review is held with the Supervising Engineer.

A training record is maintained normally including a work diary

Review reports are signed off by the line manager and listing objectives achieved.

Trainees are encouraged to join and participate in a professional institution.

6. Education and CPD

Trainees are sent to college to obtain EC approved qualifications.

For trainees with related or insufficient qualifications, either access to further top up learning is provided, or projects suitable for a Technical Report are made available.

College attendance is monitored.

Formal health and safety training is sustained.

A personal development appraisal system is in place.

Five days a year of structured professional development are achieved and recorded. (This can include structured reading and research).

Formal off the job education and training is available in the lead into the Professional Review: 7 CPD Days for IPR and 3 CPD Days for TPR.