

The UK Standard for Professional Engineering Competence and Commitment (UK-SPEC)

Fourth edition

Published August 2020





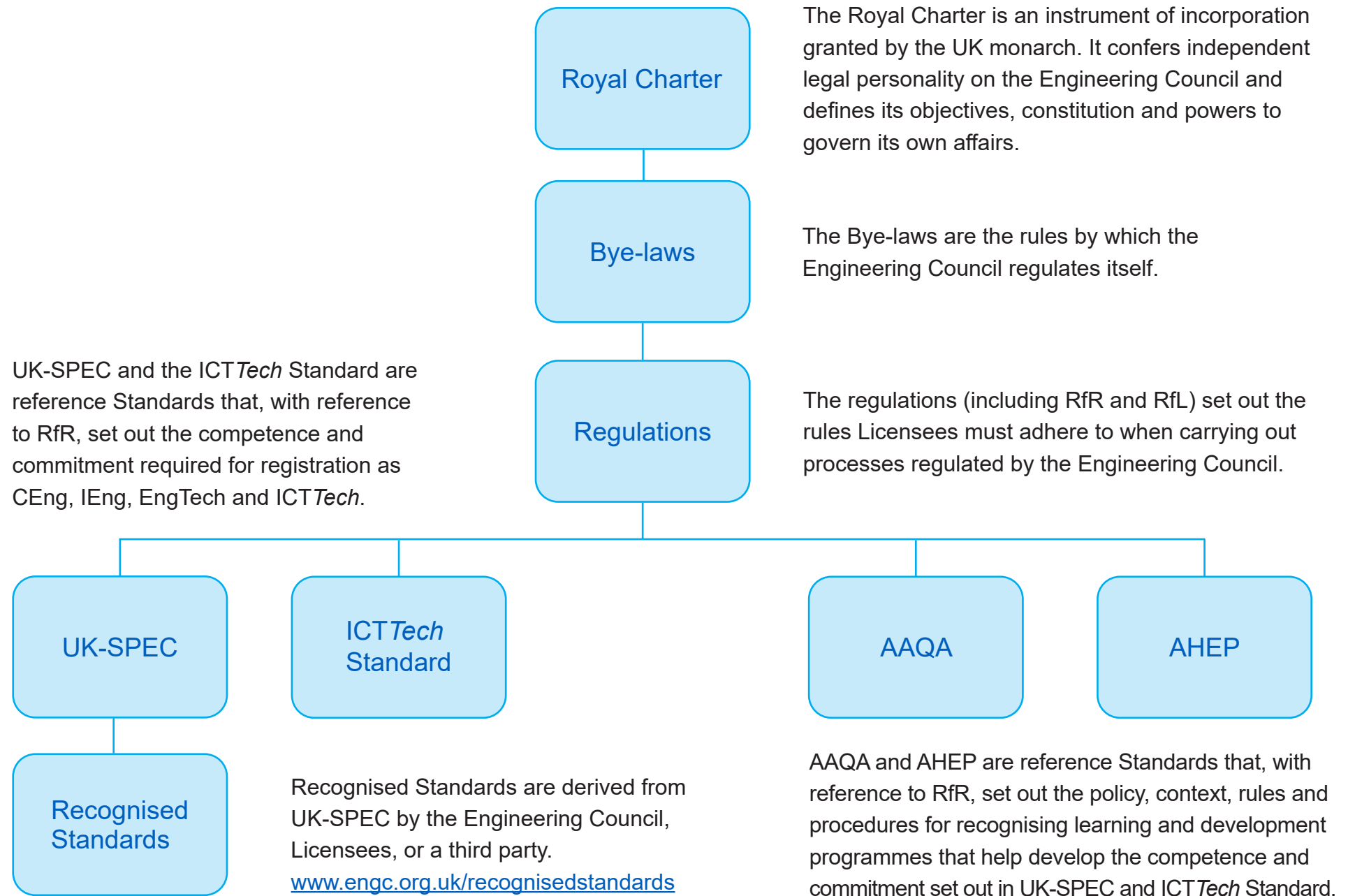
Hierarchy of regulations and standards

The Engineering Council is the UK's regulatory body for the engineering profession. It operates under a Royal Charter and is governed by a Board that represents UK Licensees as well as individuals from industries and sectors with an interest in the regulation of the profession.

This document is one in a series of closely related publications:

- **Regulations for Registration (RfR)**
- **Regulations for Licensing (RfL)**
- **The UK Standard for Professional Engineering Competence and Commitment (UK-SPEC)**
- **Information and Communications Technology Technician Standard (ICTTech Standard)**
- **Approval and Accreditation of Qualifications and Apprenticeships (AAQA)**
- **Accreditation of Higher Education Programmes (AHEP)**

The Engineering Council publishes these documents on behalf of the UK engineering profession, with whom they were developed and are kept under review. The relationship between these publications is:



The Engineering Council also publishes policy statements, guidance for institutions and guidance for individuals. These, along with all the publications listed above, are available on the Engineering Council website: www.engc.org.uk

Contents

Foreword	4
Welcome	5
What is professional registration?	6
How to become professionally registered	10
The Engineering Technician (EngTech) Standard	19
The Incorporated Engineer (IEng) Standard	24
The Chartered Engineer (CEng) Standard	31
Comparison table for EngTech, IEng and CEng Standards	40
Continuing Professional Development	46
Professional and Ethical Behaviour	47
Glossary	49

Foreword

Engineers and technicians respond to the needs of both society and business, solving complex challenges. Engineers and technicians work in the art and practice of changing our world, enhancing welfare, health and safety while paying due regard to the environment.

Society places great faith in the engineering profession, trusting its members to regulate themselves. By achieving and demonstrating professional competence and commitment for the purpose of registration, engineers and technicians demonstrate that they are worthy of that trust.

This document forms part of the Standard used by the UK engineering profession to assess the competence and commitment of individual engineers and technicians. It was developed collaboratively in consultation with engineers representing the breadth of the profession, from industry, academia and many different disciplines and specialisms.

Welcome

The purpose of UK-SPEC

This document is the UK Standard for Professional Engineering Competence and Commitment (UK-SPEC).

The primary purpose of UK-SPEC is to explain the competence and commitment requirements that people must meet and demonstrate to be registered in each of these registration categories:

- **Engineering Technician (EngTech)**
- **Incorporated Engineer (IEng)**
- **Chartered Engineer (CEng)**

This document also explains:

- Why professional registration is important
- How to achieve professional registration
- What engineers and technicians must do to maintain professional registration, including:
 - ▶ the requirement to maintain and enhance competence
 - ▶ the obligation to act with integrity and in the public interest
 - ▶ membership of a Licensee

Who UK-SPEC is for

Many different users will find this document useful. However, it has been written primarily for these audiences:

- Individuals who are thinking about becoming professionally registered
- Licensees and Professional Affiliates through which engineers and technicians become registered

- Employers of engineers and technicians
- People responsible for engineers' education or training

Licensee

Throughout this document the term 'Licensee' is used to describe the engineering institutions that have been licensed by the Engineering Council board to assess individuals for professional registration. To become Licensees organisations must pass a rigorous process demonstrating, to the satisfaction of the Engineering Council Board, that they are competent to perform this task and to regulate the conduct of their members. Additionally, Licensees can also be licensed to approve or accredit programmes of learning to specific standards. Licensees are sometimes known informally as Professional Engineering Institutions, or PEIs.

Glossary

At the end of UK-SPEC there is a glossary that explains some of terms we use.

Key information

Throughout this document some key information, terms and crucial points will be picked out in boxed text like this to help navigation.

What is professional registration?

Professional registration verifies that an individual can meet the engineering and technological needs of today, while also anticipating the needs of, and impact on, future generations. Both in the UK and overseas, professional registration gives employers, government and society confidence in the engineering industry. In this way, professional registration offers safeguarding assurances.

Registration demonstrates that an engineer or technician has reached a set standard of knowledge, understanding and occupational competence. It also demonstrates an individual's commitment to professional standards and to developing and enhancing through Continuing Professional Development (CPD).

UK-SPEC covers three professional registration categories which are set out in Table 1 on page 7.

People who gain further qualifications or experience over the course of their careers can be assessed for another registration title. Many people continue to develop their competence to enable them to move from EngTech to IEng or CEng, or from IEng to CEng.

Why register?

Benefits for individuals: recognition, career development, earning potential

Professional registration sets individual engineers and technicians apart from those who are not registered. Gaining a professional title establishes a person's proven knowledge, understanding and competence to a set standard and demonstrates their commitment to developing and enhancing competence.

Registration increases a person's earning potential and establishes credibility with peers across the profession. The professional qualifications of EngTech, IEng and CEng are internationally recognised.

Maintaining registration requires continued membership of a Licensee. Licensees, in turn, can help registrants find development opportunities through exposure to new developments, training or networking opportunities.

In addition, the criteria of the UK-SPEC provide a useful framework for CPD, particularly for engineers and technicians aiming for a professional registration title. Achievement of registration can demonstrate a person's readiness for promotion or help them secure new roles or contracts.

Further benefits for individuals are available at:

www.engc.org.uk/benefits

Table 1: Overview of professional registration titles

Title	Engineering Technician (EngTech)	Incorporated Engineer (IEng)	Chartered Engineer (CEng)
Descriptor	Applies proven techniques and procedures to solve practical engineering problems. Applies safe systems of work.	Maintains and manages applications of current and developing technology, and may undertake engineering design, development, manufacture, construction and operation.	Develops solutions to engineering problems using new or existing technologies, through innovation, creativity and change. May be accountable for complex systems with significant levels of risk.
Key attributes:	1. Contribution to either the design, development, manufacture, commissioning, decommissioning, operation or maintenance of products, equipment, processes or services 2. Supervisory or technical responsibility 3. Effective interpersonal skills in communicating technical matters 4. Commitment to professional engineering values	1. The theoretical knowledge to solve problems in developed technologies using well proven analytical techniques 2. Successful application of their knowledge to deliver engineering projects or services using established technologies and methods 3. Contribution to project and financial planning and management together with some responsibility for leading and developing other professional staff 4. Effective interpersonal skills in communicating technical matters 5. Commitment to professional engineering values	1. The theoretical knowledge to solve problems in new technologies and develop new analytical techniques 2. Successful application of the knowledge to deliver innovative products and services and/or take technical responsibility for complex engineering systems 3. Responsibility for financial and planning aspects of projects, sub-projects or tasks 4. Leading and developing other professional staff through management, mentoring or coaching 5. Effective interpersonal skills in communicating technical matters 6. Commitment to professional engineering values

Benefits for employers: assurance of quality

Employers of professionally registered engineers and technicians can be assured that registered engineers and technicians have:

- had their competence and credentials independently assessed
- had their credentials verified to an internationally recognised standard, and
- made a commitment to their CPD.

Employing registered professionals can help mitigate against risks and liabilities, as registrants are governed by a Code of Professional Conduct.

Maintaining registration requires continued membership of a Licensee and a commitment to CPD. This means employers can be reassured that registered employees are developing and enhancing their competence and will be exposed to new developments in their profession.

Some employers find the framework of the UK-SPEC a useful basis for their own organisational needs, such as to structure CPD. Others rely on achievement of registration to demonstrate an employee's readiness for promotion. In some cases, both in the UK and internationally, the awarding of contracts will require evidence that organisations employ professionally registered engineers.

Further benefits for employers are available at:
www.engc.org.uk/employers

International context

The Engineering Council is committed to supporting its

professionally registered engineers and technicians working in other countries. The professional titles EngTech, IEng and CEng are recognised widely around the world. Professional registration, as defined in UK-SPEC, reflects the requirements of global engineering.

Engineers who have developed their professional engineering competence in countries outside of the United Kingdom are welcome to join the Engineering Council register, subject to meeting the assessment criteria.

For further information see: www.engc.org.uk/international

What is engineering competence?

Competence is defined as a professional's ability to carry out engineering tasks successfully and safely within their field of practice. This includes having the individual skills, knowledge and understanding, personal behaviour and approach, to be able to work collaboratively with others to achieve the intended outcomes. Competence includes the ability to make professional judgments and an awareness of the limits of one's own ability and knowledge in order to seek assistance when required.

Each registration title requires demonstrations of competence in five broad areas:

- A. Knowledge and understanding
- B. Design, development and solving engineering problems
- C. Responsibility, management and leadership
- D. Communication and interpersonal skills
- E. Professional commitment

What is professional commitment?

Registered engineering professionals are required to demonstrate a personal and professional commitment to society, to the environment and to their profession. As part of demonstrating overall competence, it is mandatory to show that they have adopted a set of values and conduct that maintains and enhances the reputation of the profession. This includes:

- Maintaining public and employee safety
- Undertaking work in a way that protects the environment and contributes to sustainable development
- Complying with codes of conduct, codes of practice and the legal and regulatory framework
- Managing, applying and improving safe systems of work
- Carrying out the CPD necessary to maintain and enhance competence in relation to duties and responsibilities
- Exercising responsibilities in an ethical manner
- Recognising inclusivity and diversity
- Adopting a security-minded approach
- Actively participating within the profession

The Engineering Council has published a CPD Code for Registrants, (see page 46), as well as guidance on risk, sustainability, whistleblowing and security (see page 47).

Ethical standards

Together with the Royal Academy of Engineering, the Engineering Council developed The Statement of Ethical Principles. This document outlines how members of the profession should conduct themselves in their working habits and relationships. The values it

is based on should apply in every situation in which engineers and technicians exercise their judgment.

The Statement of Ethical Principles is available at:

www.engc.org.uk/ethics

Further information on the required Standards is available from a variety of sources. Each Licensee will have its own Code of Professional Conduct, in line with the framework on Professional and Ethical Behaviour on page 47 of this document, and supporting guidance.

How to become professionally registered

Professional registration is open to all engineers and technicians who:

- Can satisfy the requirements for underpinning knowledge and understanding
- Can demonstrate competence and commitment to meet the necessary standard
- Are members of a Licensee relevant to their discipline

What are the requirements for registration?

The Engineering Council sets the Standards which need to be met for EngTech, IEng and CEng. Pages 19–45 show the requirements for all three titles. However, it is the Licensee that will carry out an assessment of an applicant's competence and commitment. The Licensee will act as the awarding body for professional registration as EngTech, IEng or CEng.

Applicants need to apply for professional registration through a Licensee relevant to their discipline. The Licensee will be able to provide details about registration, including the process and typical timescales.

The list of Licensees licensed by the Engineering Council is available at: www.engc.org.uk/licensees

A Professional Affiliate is an engineering institution which is closely associated with the Engineering Council but is not licensed to assess applicants or award registration. Some Professional Affiliates will have a registration agreement with a Licensee so that the Licensee can assess members of the Professional Affiliate for

registration. These Professional Affiliate members may then apply for registration through the Licensee.

The current list of Professional Affiliates, including those which have registration agreements, is available at:

www.engc.org.uk/affiliates

How are applicants assessed?

Pages 19–45 list the requirements for all three professional titles. Once a person is confident that they meet all the criteria for a professional title, they should make an application for assessment through their chosen Licensee. The assessment process is known as a Professional Review. The Licensee will provide a detailed description of the requirements and format for this.

Applicants will need to submit formal documented evidence of any relevant qualifications, experience or training and show how this relates to the required competences and commitment set out in pages 19–45 of this document.

For EngTech qualifications, depending on the Licensee, there may be an interview, or it may simply be a one-stage process assessing an applicant's submitted written evidence.

For CEng and IEng titles the Professional Review process has two stages: an assessment of written evidence and then an interview. In some engineering disciplines Licensees may specify additional methods of assessing competence and commitment.

Meeting the requirements for registration

Knowledge, understanding and skills form an essential part of competence. This provides the necessary foundation of underpinning logic and analytical capabilities. Knowledge, understanding and skills ensure that decisions are based on a full understanding of engineering practices and standards, rather than relying on instructions.

Formal education is one way of demonstrating the necessary underpinning knowledge and understanding (see Recognised Qualifications, pages 13–15), but it is not the only way (see Individual Assessment, page 16).



Figure 1: Assessment process

Recognised qualifications

For applicants who have achieved the required learning outcomes through recognised qualifications. Qualifications which provide the required level of knowledge and understanding are:

- EngTech: Level 3 qualification as part of an approved apprenticeship scheme
- IEng: an accredited Bachelors degree
- CEng: an accredited integrated Masters degree or a combination of accredited Bachelors and Masters degrees

Individual assessment

Applicants who do not have the recognised qualifications will instead have an individual assessment of their qualifications and any other relevant learning such as:

- formal academic programmes
- in-employment training
- experiential learning
- self-directed learning

Applicants may be also asked to write a technical report or attend a technical interview.

The assessment will be carried out by registrants who are also members of the Licensee. The exact process is set out by the Licensee.

Professional Review of competence and commitment

Applicants are assessed against the UK-SPEC standard of competence which sets the minimum requirements. Licensees may add requirements which relate to their particular engineering discipline.

An expert panel, consisting of registered engineers from the Licensee, will review an applicant's portfolio of evidence against the requirements. This is followed by:

Professional Review Interview (PRI)

All IEng and CEng applicants will be interviewed by a panel of registered engineers who are also members of the Licensee. EngTech applicants may need to attend a Professional Review Interview.

The panel will then make a recommendation on whether the applicant meets the requirements for their chosen registration category.

Figure 1 (continued)

Professional registration

The recommendation from the Professional Review is reviewed by the Licensee's relevant committee. The applicant will achieve professional registration if:

- The expert panel recommends that the applicant has met the requirements
- All are satisfied that all stages of the process have been completed, and
- The Licensee's relevant committee endorses the recommendation.

The applicant then becomes a registrant and is able to use the relevant post-nominal.

As a condition of continued registration, the individual commits to:

- Maintain their competence through CPD and membership of their Licensee, and
- Adhere to their Licensee's Code of Professional Conduct.

If an applicant has been unsuccessful the Licensee will provide some guidance on what further learning and/or competence development would be beneficial to achieve registration.

When all the above steps are completed to the satisfaction of the Licensee's relevant committee, the applicant achieves professional registration. They commit to maintain their CPD and membership of their Licensee and to adhere to their Licensee's Code of Professional Conduct.

Recognised qualifications

The underpinning knowledge and understanding for each registration category can be developed from recognised qualifications that deliver the appropriate learning outcomes.

The recognised qualifications for each registration category are set out in Table 2. The learning outcomes are set out in detail in the Engineering Council publications Accreditation of Higher Education Programmes (AHEP) and the Approval and Accreditation of Qualifications and Apprenticeships (AAQA) Standards.



Table 2: Recognised qualifications

Engineering Technician (EngTech) One of the following:	Incorporated Engineer (IEng) One of the following:	Chartered Engineer (CEng) One of the following:
• Successful completion of an apprenticeship or other work-based learning programme approved by a Licensee • Alongside appropriate working experience, holding a qualification, approved by a Licensee, in engineering or construction set at either: ▶ level 3 (or above) in the Regulated Qualifications Framework or National Qualifications Framework for England and Northern Ireland ▶ level 6 (or above) in the Scottish Credit and Qualifications Framework ▶ level 3 (or above) in the Credit and Qualifications Framework for Wales • Alongside appropriate working experience, holding equivalent qualifications or apprenticeships accredited or approved by a Licensee, or at an equivalent level in a relevant national or international qualifications framework[†]	• An accredited Bachelors or honours degree in engineering or technology • An accredited Higher National Certificate (HNC) or Higher National Diploma (HND) in engineering or technology started before September 1999 • An HNC or HND started after September 1999 (but before September 2010 in the case of the HNC) or a Foundation Degree in engineering or technology, plus appropriate further learning to degree level • A National Vocational Qualification (NVQ) or Scottish Vocational Qualification (SVQ) at level 4 that has been approved by a Licensee, plus appropriate further learning to degree level[*] • Equivalent qualifications or apprenticeships accredited or approved by a Licensee, or at an equivalent level in a relevant national or international qualifications framework[†]	• An accredited Bachelors degree with honours in engineering or technology, plus either an appropriate Masters degree or engineering doctorate accredited by a Licensee, or appropriate further learning to Masters level[*] • An accredited integrated MEng degree • An accredited Bachelors degree with honours in engineering or technology started before September 1999 • Equivalent qualifications or apprenticeships accredited or approved by a Licensee, or at an equivalent level in a relevant national or international qualifications framework[†]

* See: www.engc.org.uk/ukspec4th for qualification levels and HE reference points.

† For example, UNESCO's International Standard Classification of Education (ISCED) framework.

The Engineering Council maintains a publicly accessible recognised course search database, which is available at:

www.engc.org.uk/courses

Individual assessment

Many potential registrants have not had formal training to the required level but are able to demonstrate they have acquired the necessary underpinning knowledge through substantial work experience. Applicants who have acquired their underpinning knowledge and understanding through experiential learning or other qualifications can submit the relevant information to their Licensee for an initial assessment.

This process includes assessment of the applicant's prior learning and underpinning knowledge needed to successfully perform their role. Applicants should submit information covering their education, career history and training record. It may also be helpful for applicants to include evidence of employer recognition of their competences and relevant skills.

If the Licensee considers, after this initial assessment, that it needs additional evidence of knowledge and understanding it will advise the applicant on the nature and extent of this. An applicant can demonstrate knowledge and understanding in a number of ways, such as:

- Successfully completing further qualifications, either in whole or in part,
- Providing a record of having completed work-based or experiential learning,
- Writing a technical report, based on experience, which demonstrates the applicant's knowledge and understanding of engineering principles, or
- Any combination of these.

Preparing for registration

Pages 19–45 of this document set out the competence and commitment Standards for registration as an EngTech, IEng or CEng.

Engineers seeking registration should review the competence and commitment statements and use the examples to help them identify where they already have an appropriate level of competence, as well as what evidence they can present to demonstrate this. They should also identify areas where they currently lack the appropriate competence, in order to formulate plans to develop to the required level.

Pages 19–39 also include some examples of the kind of evidence which would contribute to demonstrating competence and commitment to the required Standards. However, the list of examples is only for guidance: it is not exhaustive, and the examples are not requirements for achieving professional registration.

For all categories, those seeking registration after completing their early career training should present a detailed record of their professional development, responsibilities and experience. To enable applicants to provide the best evidence for the Professional Review, this record should be verified by supervisors or mentors.

Professional Review: assessing competence and commitment

To become professionally registered, applicants must have their competence and commitment assessed through a Professional

Review, overseen by the Licensee. This peer review process is carried out by registrants who are competent and trained to carry out this kind of assessment.

Applicants are assessed against the Standards listed in pages 19–45 of this document, which may be adapted by the Licensee to relate specifically to the particular technologies or industries it is concerned with. There is no prescribed time period or minimum age requirement for the development of competence and commitment. The length of time it takes depends on many factors such as a person's prior qualifications or experience, their job role, as well as personal circumstances such as career breaks or part time working.

Scrutiny of qualifications

The first stage of the Professional Review is an assessment of the documented evidence which the applicant has submitted. The applicant's Licensee will specify the requirements for this submission. The Licensee will examine the examples of evidence and assess how they meet the underpinning knowledge, understanding and competence requirements.

Applicants will need to submit evidence in support of their application such as their:

- Educational record and qualifications
- Professional qualifications awarded by other national, regional or international authorities
- Structured or other professional development
- Areas of responsibility, management and leadership
- Evidence of effective interpersonal skills
- A plan for future professional development

Professional Review

After the submitted evidence has been reviewed, the Licensee will decide whether the applicant is ready to proceed to Professional Review. The Licensee will be able to advise applicants how to best present their evidence of training and experience. If there are shortfalls in evidence, Licensees will usually be able to suggest ways in which the applicant can address them. This may involve further learning, training or additional experience.

Once the submitted evidence has been accepted as a basis for the review, the next stage is a Professional Review Interview (PRI). This is mandatory for IEng and CEng applicants. For EngTech applicants there may be an interview, at the discretion of the Licensee, or the Professional Review may be based solely on the submitted documents.

When the Professional Review has been completed, the peer reviewers will make a recommendation to the Licensee's designated committee. The committee will then make a decision on whether the applicant has demonstrated that they meet the required standards. A positive decision will result in registration of the applicant as an EngTech, IEng or CEng. Where the applicant has been unsuccessful the Licensee will provide feedback to help the applicant overcome any shortfalls in competence.

Retention of the title requires:

- Continued membership of either:
 - ▶ a Licensee licensed for that title or
 - ▶ a Professional Affiliate which has a registration agreement with a Licensee licensed for that title,and:
- Payment of an annual fee,
- and:
- Undertaking and recording Continuing Professional Development (CPD).

For more information please see: www.engc.org.uk/cpd



The Engineering Technician (EngTech) Standard

Engineering Technicians apply proven techniques and procedures to the solution of practical engineering problems.

Engineering Technicians shall demonstrate:

- Engineering knowledge and understanding to apply technical and practical skills
- Evidence of their contribution to the design, development, manufacture, commissioning, decommissioning, operation or maintenance of products, equipment, processes or services
- Supervisory or technical responsibility
- Effective interpersonal skills in communicating technical matters
- The ability to operate in accordance with safe systems of work and to demonstrate appropriate understanding of the principles of sustainability
- Commitment to professional engineering values

An Engineering Technician will be able to demonstrate their competence in all of the areas listed, but the depth and extent of their experience and competence will vary with the context, nature and requirements of their role. They will demonstrate a level of competence and commitment in each area, (A1–E5), at a level which is consistent with their specific role. It is to be expected that they will have a higher level of competence in some areas than others and their role may provide limited experience in certain areas. However, they need to demonstrate an understanding of, and familiarity with, the key aspects of competence in those

areas of limited experience as a minimum requirement while demonstrating higher levels of competence in those areas which are critical to their role. Overall, they will demonstrate an appropriate balance of competences to perform their role effectively at Engineering Technician level.

The examples of evidence are intended as guidance to help identify activities that might demonstrate the required competence and commitment for Engineering Technician registration. They are intended as examples only as the most appropriate evidence will vary with each individual role. The list is not exhaustive and other types of evidence might be valid. There is no requirement to provide multiple examples of evidence for each area of competence, but examples from two or three projects or tasks would be useful.

Competence		Examples of evidence
A. Knowledge and understanding Engineering Technicians shall use engineering knowledge and understanding to apply technical and practical skills. This competence is about having knowledge of the technologies, standards and practices relevant to the applicant's area of work and having evidence of maintaining and applying this knowledge.	The applicant shall demonstrate that they: 1. Review and select appropriate techniques, procedures and methods to undertake tasks	- Evaluating potential methods of carrying out an engineering task and selecting the most appropriate solution - Recognising a difficulty and then identifying an approach to resolve it - Identifying an improvement in a technique, procedure, process or method - Interpreting and carrying out test procedures
	2. Use appropriate scientific, technical or engineering principles.	- Drawing on your technical knowledge to complete a task - Performing calculations using standard formulae - Analysing performance or test data or comparing performance information with published material
B. Design, development and solving engineering problems Engineering Technicians shall contribute to the design, development, manufacture, construction, commissioning, decommissioning, operation or maintenance of products, equipment, processes, systems or services. This competence is about the ability to apply engineering knowledge effectively and efficiently to the individual tasks which need to be undertaken in the applicant's role.	The applicant shall demonstrate that they: 1. Identify problems and apply appropriate methods to identify causes and achieve satisfactory solutions	- Using knowledge to identify a problem or an opportunity for improvement - Investigating a problem to identify the underlying cause - Identifying a solution to a problem or an improvement opportunity - Contributing to the design of an item or process
	2. Identify, organise and use resources effectively to complete tasks, with consideration for cost, quality, safety, security and environmental impact.	- Balancing these factors in selecting appropriate materials - Identifying precautions as a result of evaluating risks and other factors - Considering how waste can be minimised, recycled or disposed of safely if recycling is not possible - Contributing to best practice methods of continuous improvement - Improving the quality of an operation or process

Competence		Examples of evidence
C. Responsibility, management and leadership Engineering Technicians shall accept and exercise personal responsibility. This competence is about the ability to plan and manage the applicant's own work effectively and efficiently. It is also about the ability to consider and identify improvements to maintain quality in their work.	The applicant shall demonstrate that they: 1. Work reliably and effectively without close supervision, to the appropriate codes of practice	• Completing challenging tasks successfully within your area of work • Identifying issues which fall outside of your current knowledge and seeking advice • Identifying standards and codes of practice relevant to a new task
	2. Accept responsibility for the work of themselves or others	• Fully understanding drawings, permits to work, instructions or other similar documents after appropriate checking, and identifying issues • Inspecting work carried out by others • Checking the status of equipment, the work environment and facilities and taking appropriate actions before commencing work
	3. Accept, allocate and supervise technical and other tasks.	• Ensuring that the scope of a task is clear before accepting and/or allocating it to others • Querying any aspect of a task which is not clear and/or providing an explanation if a query is raised by others • Learning from your own experience and/or providing constructive feedback when supervising or working with others

Competence		Examples of evidence
D. Communication and interpersonal skills Engineering Technicians shall use effective communication and interpersonal skills. This is the ability to work with others constructively, to explain ideas and proposals clearly and to discuss issues objectively and constructively.	The applicant shall demonstrate that they: 1. Communicate effectively with others, at all levels, in English	• Contributing to meetings and discussions • Preparing communications, documents and reports on technical matters • Exchanging information and providing advice to technical and non-technical colleagues
	2. Work effectively with colleagues, clients, suppliers or the public	• Contributing constructively as part of a team • Successfully resolving issues in discussions with team members, suppliers, clients and/or others • Persuading others to accept suggestions or recommendations • Identifying, agreeing and working towards collective goals
	3. Demonstrate personal and social skills and awareness of diversity and inclusion issues.	• Knowing and managing own emotions, strengths and weaknesses • Being confident and flexible in dealing with new and changing interpersonal situations • Creating, maintaining and enhancing productive working relationships, and resolving conflicts • Being supportive of the needs and concerns of others, especially where this relates to diversity and inclusion

Competence		Examples of evidence
E. Personal and professional commitment Engineering Technicians shall demonstrate commitment to an appropriate code of professional conduct, recognising obligations to society, the profession and the environment. This competence is about ensuring that the applicant is acting in a professional manner in their work and in their dealings with others. An Engineering Technician should set a standard and example to others with regard to professionalism.	This shall include the ability to: 1. Understand and comply with relevant codes of conduct	• Demonstrating compliance with your Licensee's Code of Professional Conduct • Working within all relevant legislative and regulatory frameworks, including social and employment legislation
	2. Understand the safety implications of their role and apply safe systems of work	• Providing evidence of applying current safety requirements, such as risk assessment and other examples of good practice you adopt in your work • A sound knowledge of health and safety legislation, for example: HASAW 1974, CDM regulations, ISO 45001 and company safety policies
	3. Understand the principles of sustainable development and apply them in their work	• Recognising how sustainability principles, as described in the Guidance on Sustainability on page 48, can be applied in your day-to-day work • Identifying actions that you can and have taken to improve sustainability
	4. Carry out and record the Continuing Professional Development (CPD) necessary to maintain and enhance competence in their own area of practice	• Undertaking reviews of your own development needs • Planning how to meet personal and organisational objectives • Carrying out and recording planned and unplanned CPD activities • Maintaining evidence of competence development • Evaluating CPD outcomes against any plans made • Assisting others with their own CPD
	5. Understand the ethical issues that may arise in their role and carry out their responsibilities in an ethical manner.	• Understanding the ethical issues that you may encounter in your role • Giving an example of where you have applied ethical principles as described in the Statement of Ethical Principles on page 47 • Giving an example of where you have applied or upheld ethical principles as defined by your organisation or company

The Incorporated Engineer (IEng) Standard

Incorporated Engineers maintain and manage applications of current and developing technology, and may undertake engineering design, development, manufacture, construction and operation.

Incorporated Engineers shall demonstrate:

- The theoretical knowledge to solve problems in established technologies using well proven analytical techniques
- Successful application of the knowledge to deliver engineering tasks or services using established technologies and methods
- Contribution to the financial and planning aspects of projects or tasks and contribution to leading and developing other professional staff
- Effective interpersonal skills in communicating technical matters
- The ability to specify and operate to safe systems of work and to demonstrate appropriate consideration of the principles of sustainability
- Commitment to professional engineering values

An Incorporated Engineer will be able to demonstrate their competence in all of the areas listed, but the depth and extent of their experience and competence will vary with the nature and requirements of their role. They will demonstrate a level of competence and commitment in each area (A1–E5) at a level which is consistent with their specific role. It is to be expected that they will have a higher level of competence in some areas than

others and their role may provide limited experience in certain areas. However, they need to demonstrate an understanding of, and familiarity with, the key aspects of competence in all areas as a minimum requirement while demonstrating higher levels of competence in those areas which are critical to their role. Overall, they must demonstrate an appropriate balance of competences to perform their role effectively at Incorporated Engineer level.

The examples of evidence are intended as guidance to help identify activities that might demonstrate the required competence and commitment for Incorporated Engineer registration. They are intended as examples only as the most appropriate evidence will vary with each individual role. The list is not exhaustive and other types of evidence might be valid. There is no requirement to provide multiple examples of evidence for each area of competence, but examples from two or three projects or tasks would be useful.

Competence		Examples of evidence
A. Knowledge and understanding Incorporated Engineers shall use a combination of general and specialist engineering knowledge and understanding to apply existing and emerging technology. This competence is about having knowledge of the technologies, standards and practices relevant to the applicant's area of practice and having evidence of maintaining and applying this knowledge.	The applicant shall demonstrate that they: 1. Have maintained and extended a sound theoretical approach to the application of technology in engineering practice	• Identifying the limits of your knowledge and skills • Taking steps to develop and extend personal knowledge of appropriate technology, both current and emerging • Applying newly gained knowledge successfully in a task or project • Reviewing current procedures and processes and recommended improvements or changes to reflect best practice • Developing knowledge needed to work in a new industry area or discipline
	2. Use a sound evidence-based approach to problem-solving and contribute to continuous improvement.	• Applying knowledge and experience to investigate and solve problems arising during engineering tasks and implementing corrective action • Identifying opportunities for improvements and how these have been (or could be) implemented • Using an established process to analyse issues and establish priorities

Competence		Examples of evidence
B. Design, development and solving engineering problems Incorporated Engineers shall apply appropriate theoretical and practical methods to design, develop, manufacture, construct, commission, operate, maintain, decommission and recycle engineering processes, systems, services and products. This competence is about the ability to identify appropriate methods and approaches to use to undertake a task within their area of practice and to make a significant contribution to the development of a design or process or the maintenance of operations.	The applicant shall demonstrate that they: 1. Identify, review and select techniques, procedures and methods to undertake engineering tasks	- Establishing the engineering steps needed to carry out a task efficiently - Identifying the available products or processes needed to undertake an engineering task and establishing a means of identifying the most suitable solution - Preparing technical specifications - Reviewing and comparing responses to the technical aspects of tender invitations - Establishing user requirements for improvements
	2. Contribute to the design and development of engineering solutions	- Contributing to the identification and specification of design and development requirements for engineering products, processes, systems and services - Identifying operational risks and evaluating possible engineering solutions, taking account of cost, quality, safety, reliability, accessibility, appearance, fitness for purpose, security (including cyber security), intellectual property constraints and opportunities, and environmental impact - Collecting and analysing results - Carrying out necessary tests
	3. Implement design solutions for equipment or processes and contribute to their evaluation.	- Identifying the resources required for implementation - Implementing design solutions, taking account of critical constraints, including due concern for safety and sustainability - Identifying problems during implementation and taking corrective action - Contributing to recommendations for improvement and actively learning from feedback on results

Competence		Examples of evidence
C. Responsibility, management and leadership Incorporated Engineers shall provide technical and commercial management. This competence is about the ability to plan the applicant's own work and manage or specify the work of others effectively, efficiently and in a way which provides leadership at an appropriate level, whether technical or commercial. Leadership is not necessarily about having a formal line management role. In matrix management and other types of organisational structure, where Incorporated Engineers are working within complex and varied working relationships, they will provide leadership to achieve objectives. This competence is also about the ability to consider and identify improvements to quality.	The applicant shall demonstrate that they: 1. Plan the work and resources needed to enable effective implementation of engineering tasks and projects	- Identifying factors affecting the project implementation - Carrying out holistic and systematic risk identification, assessment and management - Preparing and agreeing implementation plans and method statements - Securing the necessary resources and confirming roles in a project team - Applying the necessary contractual arrangements with other stakeholders (clients, subcontractors, suppliers, etc)
	2. Manage (organise, direct and control), programme or schedule, budget and resource elements of engineering tasks or projects	- Operating appropriate management systems - Working to the agreed quality standards, programme and budget, within legal and statutory requirements - Managing work teams, coordinating project activities - Identifying variations from quality standards, programme and budgets, and taking corrective action - Evaluating performance and recommending improvements
	3. Manage teams, or the input of others, into own work and assist others to meet changing technical and management needs	- Agreeing objectives and work plans with teams and individuals - Reinforcing team commitment to professional standards - Leading and supporting team and individual development - Assessing team and individual performance, and providing feedback - Seeking input from other teams or specialists where needed and managing the relationship
	4. Take an active role in continuous quality improvement.	- Ensuring the application of quality management principles by team members and colleagues - Managing operations to maintain quality standards eg ISO 9000, EQFM - Evaluating projects and making recommendations for improvement - Implementing and sharing the results of lessons learned

Competence		Examples of evidence
D. Communication and interpersonal skills Incorporated Engineers shall demonstrate effective communication and interpersonal skills. This is the ability to work with others constructively, to explain ideas and proposals clearly and to discuss issues objectively and constructively.	The applicant shall demonstrate that they: 1. Communicate effectively with others, at all levels, in English	• Contributing to, chairing and recording meetings and discussions • Preparing communications, documents and reports on technical matters • Exchanging information and providing advice to technical and non-technical colleagues • Engaging or interacting with professional networks
	2. Clearly present and discuss proposals, justifications and conclusions	• Preparing and delivering appropriate presentations • Managing debates with audiences • Feeding the results back to improve the proposals • Contributing to the awareness of risk
	3. Demonstrate personal and social skills and awareness of diversity and inclusion issues.	• Knowing and managing own emotions, strengths and weaknesses • Being confident and flexible in dealing with new and changing interpersonal situations • Identifying, agreeing and working towards collective goals • Creating, maintaining and enhancing productive working relationships, and resolving conflicts • Being supportive of the needs and concerns of others, especially where this relates to diversity and inclusion

Competence		Examples of evidence
E. Personal and professional commitment Incorporated Engineers shall demonstrate a personal commitment to professional standards, recognising obligations to society, the profession and the environment. This competence is about ensuring that the applicant is acting in a professional manner in their work and in their dealings with others. An Incorporated Engineer should set a standard and example to others with regard to professionalism.	The applicant shall demonstrate that they: 1. Understand and comply with relevant codes of conduct	• Demonstrating compliance with your Licensee's Code of Professional Conduct • Identifying aspects of the Code particularly relevant to your role • Managing work within all relevant legislative and regulatory frameworks, including social and employment legislation
	2. Understand the safety implications of their role and manage, apply and improve safe systems of work	• Identifying and taking responsibility for your own obligations for health, safety and welfare issues • Managing systems that satisfy health, safety and welfare requirements • Developing and implementing appropriate hazard identification and risk management systems and culture • Managing, evaluating and improving these systems • Applying a sound knowledge of health and safety legislation, for example: HASAW 1974, CDM regulations, ISO 45001 and company safety policies
	3. Understand the principles of sustainable development and apply them in their work	• Operating and acting responsibly, taking account of the need to progress environmental, social and economic outcomes simultaneously • Recognising how sustainability principles, as described in the Guidance on Sustainability on page 48 can be applied in your day-to-day work • Providing products and services which maintain and enhance the quality of the environment and community, and meet financial objectives • Understanding and encouraging stakeholder involvement in sustainable development • Using resources efficiently and effectively • Taking action to minimise environmental impact in your area of responsibility

Competence		Examples of evidence
E. Personal and professional commitment (continued)	The applicant shall demonstrate that they: 4. Carry out and record the Continuing Professional Development (CPD) necessary to maintain and enhance competence in their own area of practice	• Undertaking reviews of your own development needs • Planning how to meet personal and organisational objectives • Carrying out and recording planned and unplanned CPD activities • Maintaining evidence of competence development • Evaluating CPD outcomes against any plans made • Assisting others with their own CPD
	5. Understand the ethical issues that may arise in their role and carry out their responsibilities in an ethical manner.	• Understanding the ethical issues that you may encounter in your role • Giving an example of where you have applied ethical principles as described in the Statement of Ethical Principles on page 47 • Giving an example of where you have applied or upheld ethical principles as defined by your organisation or company

The Chartered Engineer (CEng) Standard

Chartered Engineers develop solutions to complex engineering problems using new or existing technologies, and through innovation, creativity and technical analysis.

Chartered Engineers shall demonstrate:

- The theoretical knowledge to solve problems in new and established technologies and to develop new analytical techniques
- Successful application of the knowledge to deliver innovative products and services or taking technical responsibility for complex engineering systems
- Responsibility for the financial and planning aspects of projects, sub-projects or tasks
- Leadership and development of other professional staff through management, mentoring or coaching
- Effective interpersonal skills in communicating technical matters
- Understanding of the safety and sustainability implications of their work, seeking to improve aspects where feasible
- Commitment to professional engineering values

A Chartered Engineer will be able to demonstrate their competence in all of the areas listed, but the depth and extent of their experience and competence will vary with the nature and requirements of their role. They will demonstrate a level of competence and commitment in each area, (A1–E5), at a level which is consistent with their specific role. It is to be expected that

they will have a higher level of competence in some areas than others and their role may provide limited experience in certain areas. However, they need to demonstrate an understanding of, and familiarity with, the key aspects of competence in all areas as a minimum requirement while demonstrating higher levels of competence in those areas which are critical to their role. Overall, they will demonstrate an appropriate balance of competences to perform their role effectively at Chartered Engineer level.

The examples of evidence are intended as guidance to help identify activities that might demonstrate the required competence and commitment for Chartered Engineer registration. They are intended as examples only as the most appropriate evidence will vary with each individual role. The list is not exhaustive and other types of evidence might be valid. There is no requirement to provide multiple examples of evidence for each area of competence, but examples from two or three projects or tasks would be useful.

Competence		Examples of evidence
A. Knowledge and understanding Chartered Engineers shall use a combination of general and specialist engineering knowledge and understanding to optimise the application of advanced and complex systems. This competence is about the ability to understand underpinning technical principles relevant to the applicant's area of practice and applying them to develop technical solutions. This could involve technical solutions for novel problems or dealing with significant technical complexity. This may involve the integration of a range of technologies and consideration of other factors. This competence requires that an applicant is maintaining and developing their knowledge in their field of practice and not just that required for specific tasks.	The applicant shall demonstrate that they: 1. Have maintained and extended a sound theoretical approach to enable them to develop their particular role	• Formal training related to your role • Learning and developing new engineering knowledge in a different industry or role • Understanding the current and emerging technology and technical best practice in your area of expertise • Developing a broader and deeper knowledge base through research and experimentation • Learning and developing new engineering theories and techniques in the workplace
	2. Are developing technological solutions to unusual or challenging problems, using their knowledge and understanding and/or dealing with complex technical issues or situations with significant levels of risk.	• Carrying out technical research and development • Developing new designs, processes or systems based on new or evolving technology • Carrying out complex and/or non-standard technical analyses • Developing solutions involving complex or multi-disciplinary technology • Developing and evaluating continuous improvement systems • Developing solutions in safety-critical industries or applications

Competence		Examples of evidence
B. Design, development and solving engineering problems Chartered Engineers shall apply appropriate theoretical and practical methods to the analysis and solution of engineering problems. This competence is about the ability to apply engineering knowledge effectively and efficiently to the individual tasks which need to be undertaken in the applicant's role.	The applicant shall demonstrate that they: 1. Take an active role in the identification and definition of project requirements, problems and opportunities	• Identifying projects or technical improvements to products, processes or systems • Preparing specifications, taking account of functional and other requirements • Establishing user requirements • Reviewing specifications and tenders to identify technical issues and potential improvements • Carrying out technical risk analysis and identifying mitigation measures • Considering and implementing new and emerging technologies
	2. Can identify the appropriate investigations and research needed to undertake the design, development and analysis required to complete an engineering task and conduct these activities effectively	• Identifying and agreeing appropriate research methodologies • Investigating a technical issue, identifying potential solutions and determining the factors needed to compare them • Identifying and carrying out physical tests or trials and analysing and evaluating the results • Carrying out technical simulations or analysis • Preparing, presenting and agreeing design recommendations, with appropriate analysis of risk, and taking account of cost, quality, safety, reliability, accessibility, appearance, fitness for purpose, security (including cyber security), intellectual property constraints and opportunities, and environmental impact

Competence		Examples of evidence
B. Design, development and solving engineering problems (continued)	The applicant shall demonstrate that they: 3. Can implement engineering tasks and evaluate the effectiveness of engineering solutions.	• Ensuring that the application of the design results in the appropriate practical outcome • Implementing design solutions, taking account of critical constraints, including due concern for safety, sustainability and disposal or decommissioning • Identifying and implementing lessons learned • Evaluating existing designs or processes and identifying faults or potential improvements including risk, safety and life cycle considerations • Actively learning from feedback on results to improve future design solutions and build best practice

Competence		Examples of evidence
C. Responsibility, management and leadership Chartered Engineers shall demonstrate technical and commercial leadership. This competence is about the ability to plan the applicant's own work and manage or specify the work of others effectively, efficiently, and in a way which provides leadership at an appropriate level, whether technical or commercial. Leadership is not necessarily about having a formal line management role. In matrix management and other types of organisational structure, where Chartered Engineers are working within complex and varied working relationships, they will provide leadership to achieve objectives. This competence is also about the ability to consider and identify improvements to quality.	The applicant shall demonstrate that they: 1. Plan the work and resources needed to enable effective implementation of a significant engineering task or project	• Preparing budgets and associated work programmes for projects or tasks • Systematically reviewing the factors affecting the project implementation including safety, sustainability and disposal or decommissioning considerations • Carrying out a task or project risk assessment and identifying mitigation measures • Leading on preparing and agreeing implementation plans and method statements • Negotiating and agreeing arrangements with customers, colleagues, contractors and other stakeholders, including regulatory bodies • Ensuring that information flow is appropriate and effective
	2. Manage (organise, direct and control), programme or schedule, budget and resource elements of a significant engineering task or project	• Operating or defining appropriate management systems including risk registers and contingency systems • Managing the balance between quality, cost and time • Monitoring progress and associated costs and cost forecasts, taking appropriate actions when required • Establishing and maintaining appropriate quality standards within legal and statutory requirements • Interfacing effectively with customers, contractors and other stakeholders

Competence		Examples of evidence
C. Responsibility, management and leadership (continued)	The applicant shall demonstrate that they: 3. Lead teams or technical specialisms and assist others to meet changing technical and managerial needs	• Agreeing objectives and work plans with teams and individuals • Reinforcing team commitment to professional standards • Leading and supporting team and individual development • Assessing team and individual performance, and providing feedback • Seeking input from other teams or specialists where needed and managing the relationship • Providing specialist knowledge, guidance and input in your specialism to engineering teams, engineers, customers, management and relevant stakeholders • Developing and delivering a teaching module at Masters level, or leading a University research programme
	4. Bring about continuous quality improvement and promote best practice.	• Promoting quality throughout the organisation as well as its customer and supplier networks • Developing and maintaining operations to meet quality standards eg ISO 9000, EQFM • Supporting or directing project evaluation and proposing recommendations for improvement • Implementing and sharing the results of lessons learned

Competence		Examples of evidence
D. Communication and interpersonal skills Chartered Engineers shall demonstrate effective communication and interpersonal skills. This is the ability to work with others constructively, to explain ideas and proposals clearly and to discuss issues objectively and constructively.	The applicant shall demonstrate that they: 1. Communicate effectively with others, at all levels, in English	• Preparing reports, drawings, specifications and other documentation on complex matters • Leading, chairing, contributing to and recording meetings and discussions • Exchanging information and providing advice to technical and non-technical colleagues • Engaging or interacting with professional networks
	2. Clearly present and discuss proposals, justifications and conclusions	• Contributing to scientific papers or articles as an author • Preparing and delivering presentations on strategic matters • Preparing bids, proposals or studies • Identifying, agreeing and leading work towards collective goals
	3. Demonstrate personal and social skills and awareness of diversity and inclusion issues.	• Knowing and managing own emotions, strengths and weaknesses • Being confident and flexible in dealing with new and changing interpersonal situations • Identifying, agreeing and working towards collective goals • Creating, maintaining and enhancing productive working relationships, and resolving conflicts • Being supportive of the needs and concerns of others, especially where this relates to diversity and inclusion

Competence		Examples of evidence
E. Personal and professional commitment Chartered Engineers shall demonstrate a personal commitment to professional standards, recognising obligations to society, the profession and the environment. This competence is about ensuring that the applicant is acting in a professional manner in their work and in their dealings with others. A Chartered Engineer should set a standard and example to others with regard to professionalism.	The applicant shall demonstrate that they: 1. Understand and comply with relevant codes of conduct	• Demonstrating compliance with your Licensee's Code of Professional Conduct • Identifying aspects of the Code which are particularly relevant to your role • Being aware of the legislative and regulatory frameworks relevant to your role and how they conform to them • Leading work within relevant legislation and regulatory frameworks, including social and employment legislation
	2. Understand the safety implications of their role and manage, apply and improve safe systems of work	• Identifying and taking responsibility for your own obligations and ensuring that others assume similar responsibility for health, safety and welfare issues • Ensuring that systems satisfy health, safety and welfare requirements • Developing and implementing appropriate hazard identification and risk management systems and culture • Managing, evaluating and improving these systems • Applying a sound knowledge of health and safety legislation, for example: HASAW 1974, CDM regulations, ISO 45001 and company safety policies

Competence		Examples of evidence
E. Personal and professional commitment (continued)	The applicant shall demonstrate that they: 3. Understand the principles of sustainable development and apply them in their work	• Operating and acting responsibly, taking account of the need to progress environmental, social and economic outcomes simultaneously • Providing products and services which maintain and enhance the quality of the environment and community, and meet financial objectives • Recognising how sustainability principles, as described in the Guidance on Sustainability on page 48, can be applied in your day-to-day work • Understanding and securing stakeholder involvement in sustainable development • Using resources efficiently and effectively in all activities • Taking action to minimise environmental impact in your area of responsibility
	4. Carry out and record the Continuing Professional Development (CPD) necessary to maintain and enhance competence in their own area of practice	• Undertaking reviews of your own development needs • Planning how to meet personal and organisational objectives • Carrying out planned and unplanned CPD activities • Maintaining evidence of competence development • Evaluating CPD outcomes against any plans made • Assisting others with their own CPD
	5. Understand the ethical issues that may arise in their role and carry out their responsibilities in an ethical manner.	• Understanding the ethical issues that you may encounter in your role • Giving an example of where you have applied ethical principles as described in the Statement of Ethical Principles on page 47 • Giving an example of where you have applied or upheld ethical principles as defined by your organisation or company

Comparison table for EngTech, IEng and CEng Standards

This table can also be downloaded as a PDF, along with a version which includes examples of the types of evidence.

Please see: www.engc.org.uk/ukspec

Engineering Technician (EngTech)	Incorporated Engineer (IEng)	Chartered Engineer (CEng)
Engineering Technicians apply proven techniques and procedures to the solution of practical engineering problems. Engineering Technicians shall demonstrate: • Engineering knowledge and understanding to apply technical and practical skills • Evidence of their contribution to either the design, development, manufacture, commissioning, decommissioning, operation or maintenance of products, equipment, processes or services • Supervisory or technical responsibility • Effective interpersonal skills in communicating technical matters • The ability to operate in accordance with safe systems of work and to demonstrate appropriate understanding of the principles of sustainability • Commitment to professional engineering values.	Incorporated Engineers maintain and manage applications of current and developing technology, and may undertake engineering design, development, manufacture, construction and operation. Incorporated Engineers shall demonstrate: • The theoretical knowledge to solve problems in developed technologies using well proven analytical techniques • Successful application of their knowledge to deliver engineering projects or services using established technologies and methods • Contribution to the financial and planning aspects of projects or tasks and to leading and developing other professional staff • Effective interpersonal skills in communicating technical matters • The ability to specify and operate to safe systems of work and to demonstrate appropriate consideration of the principles of sustainability • Commitment to professional engineering values.	Chartered Engineers develop solutions to complex engineering problems using new or existing technologies, and through innovation, creativity and technical analysis. Chartered Engineers shall demonstrate: • The theoretical knowledge to solve problems in new and established technologies and to develop new analytical techniques • Successful application of the knowledge to deliver innovative products and services and/or taking technical responsibility for complex engineering systems • Responsibility for the financial and planning aspects of projects, sub-projects or tasks • Leadership and development of other professional staff through management, mentoring or coaching • Effective interpersonal skills in communicating technical matters • Understanding of the safety and sustainability implications of their work, seeking to improve aspects where feasible • Commitment to professional engineering values.

Engineering Technician (EngTech)	Incorporated Engineer (IEng)	Chartered Engineer (CEng)
The Competence and Commitment Standard for Engineering Technicians For guidance and examples of types of evidence that demonstrate the required competence and commitment for registration as an Engineering Technician, see the table on pages 20–23. Engineering Technicians must be competent throughout their working life, by virtue of their education, training and experience in the following ways:	The Competence and Commitment Standard for Incorporated Engineers For guidance and examples of types of evidence that demonstrate the required competence and commitment for registration as an Incorporated Engineer, see the table on pages 25–30. Incorporated Engineers must be competent throughout their working life, by virtue of their education, training and experience in the following ways:	The Competence and Commitment Standard for Chartered Engineers For guidance and examples of types of evidence that demonstrate the required competence and commitment for registration as a Chartered Engineer, see the table on pages 32–39. Chartered Engineers must be competent throughout their working life, by virtue of their education, training and experience in the following ways:
A. Knowledge and understanding Engineering Technicians shall use engineering knowledge and understanding to apply technical and practical skills. The applicant shall demonstrate that they: 1. Review and select appropriate techniques, procedures and methods to undertake tasks 2. Use appropriate scientific, technical or engineering principles.	A. Knowledge and understanding Incorporated Engineers shall use a combination of general and specialist engineering knowledge and understanding to apply existing and emerging technology. The applicant shall demonstrate that they: 1. Have maintained and extended a sound theoretical approach to the application of technology in engineering practice 2. Use a sound evidence-based approach to problem-solving and contribute to continuous improvement.	A. Knowledge and understanding Chartered Engineers shall use a combination of general and specialist engineering knowledge and understanding to optimise the application of advanced and complex systems. The applicant shall demonstrate that they: 1. Have maintained and extended a sound theoretical approach to enable them to develop their particular role 2. Are developing technological solutions to unusual or challenging problems, using their knowledge and understanding and/or dealing with complex technical issues or situations with significant levels of risk.

Engineering Technician (EngTech)	Incorporated Engineer (IEng)	Chartered Engineer (CEng)
B. Design, development and solving engineering problems Engineering Technicians shall contribute to the design, development, manufacture, construction, commissioning, decommissioning, operation or maintenance of products, equipment, processes, systems or services. The applicant shall demonstrate that they: 1. Identify problems and apply appropriate methods to identify causes and achieve satisfactory solutions 2. Identify, organise and use resources effectively to complete tasks, with consideration for cost, quality, safety, security and environmental impact.	B. Design, development and solving engineering problems Incorporated Engineers shall apply appropriate theoretical and practical methods to design, develop, manufacture, construct, commission, operate, maintain, decommission and recycle engineering processes, systems, services and products. The applicant shall demonstrate that they: 1. Identify, review and select techniques, procedures and methods to undertake engineering tasks 2. Contribute to the design and development of engineering solutions 3. Implement design solutions for equipment or processes and contribute to their evaluation.	B. Design, development and solving engineering problems Chartered Engineers shall apply appropriate theoretical and practical methods to the analysis and solution of engineering problems. The applicant shall demonstrate that they: 1. Take an active role in the identification and definition of project requirements, problems and opportunities 2. Can identify the appropriate investigations and research needed to undertake the design, development and analysis required to complete an engineering task and conduct these activities effectively 3. Can implement engineering tasks and evaluate the effectiveness of engineering solutions.

Engineering Technician (EngTech)	Incorporated Engineer (IEng)	Chartered Engineer (CEng)
C. Responsibility, management and leadership Engineering Technicians shall accept and exercise personal responsibility. The applicant shall demonstrate that they: 1. Work reliably and effectively without close supervision, to the appropriate codes of practice 2. Accept responsibility for the work of themselves or others 3. Accept, allocate and supervise technical and other tasks.	C. Responsibility, management and leadership Incorporated Engineers shall provide technical and commercial management. The applicant shall demonstrate that they: 1. Plan the work and resources needed to enable effective implementation of engineering tasks and projects 2. Manage (organise, direct and control), programme or schedule, budget and resource elements of engineering tasks or projects 3. Manage teams, or the input of others, into own work and assist others to meet changing technical and management needs 4. Take an active role in continuous quality improvement.	C. Responsibility, management and leadership Chartered Engineers shall provide technical and commercial leadership. The applicant shall demonstrate that they: 1. Plan the work and resources needed to enable effective implementation of a significant engineering task or project 2. Manage (organise, direct and control), programme or schedule, budget and resource elements of a significant engineering task or project 3. Lead teams or technical specialisms and assist others to meet changing technical and managerial needs 4. Bring about continuous quality improvement and promote best practice.

Engineering Technician (EngTech)	Incorporated Engineer (IEng)	Chartered Engineer (CEng)
D. Communication and interpersonal skills Engineering Technicians shall use effective communication and interpersonal skills. The applicant shall demonstrate that they: 1. Communicate effectively with others, at all levels, in English 2. Work effectively with colleagues, clients, suppliers or the public 3. Demonstrate personal and social skills and awareness of diversity and inclusion issues.	D. Communication and interpersonal skills Incorporated Engineers shall demonstrate effective communication and interpersonal skills. The applicant shall demonstrate that they: 1. Communicate effectively with others, at all levels, in English 2. Clearly present and discuss proposals, justifications and conclusions 3. Demonstrate personal and social skills and awareness of diversity and inclusion issues.	D. Communication and interpersonal skills Chartered Engineers shall demonstrate effective communication and interpersonal skills. The applicant shall demonstrate that they: 1. Communicate effectively with others, at all levels, in English 2. Clearly present and discuss proposals, justifications and conclusions 3. Demonstrate personal and social skills and awareness of diversity and inclusion issues.

Engineering Technician (EngTech)	Incorporated Engineer (IEng)	Chartered Engineer (CEng)
E. Personal and professional commitment Engineering Technicians shall demonstrate a personal commitment to an appropriate code of professional conduct, recognising obligations to society, the profession and the environment. The applicant shall demonstrate that they: 1. Understand and comply with relevant codes of conduct 2. Understand the safety implications of their role and apply safe systems of work 3. Understand the principles of sustainable development and apply them in their work 4. Carry out and record the Continuing Professional Development (CPD) necessary to maintain and enhance competence in their own area of practice 5. Understand the ethical issues that may arise in their role and carry out their responsibilities in an ethical manner.	E. Personal and professional commitment Incorporated Engineers shall demonstrate a personal commitment to professional standards, recognising obligations to society, the profession and the environment. The applicant shall demonstrate that they: 1. Understand and comply with relevant codes of conduct 2. Understand the safety implications of their role and manage, apply and improve safe systems of work 3. Understand the principles of sustainable development and apply them in their work 4. Carry out and record the Continuing Professional Development (CPD) necessary to maintain and enhance competence in their own area of practice 5. Understand the ethical issues that may arise in their role and carry out their responsibilities in an ethical manner.	E. Personal and professional commitment Chartered Engineers shall demonstrate a personal commitment to professional standards, recognising obligations to society, the profession and the environment. The applicant shall demonstrate that they: 1. Understand and comply with relevant codes of conduct 2. Understand the safety implications of their role and manage, apply and improve safe systems of work 3. Understand the principles of sustainable development and apply them in their work 4. Carry out and record the Continuing Professional Development (CPD) necessary to maintain and enhance competence in their own area of practice 5. Understand the ethical issues that may arise in their role and carry out their responsibilities in an ethical manner.

Continuing Professional Development

Continuing professional development (CPD) is essential for maintaining and enhancing the required competence and commitment, as well as for developing new competences. This obligation underpins the value of the professional titles of EngTech, IEng and CEng, and enables society to have confidence in the engineering profession.

CPD has several purposes:

- To assure continuing competence in a current job
- To prepare for a different role
- To follow a longer-term career development plan
- To enhance professionalism in a wider context than a specific job role.

More details on the nature, purpose and value of CPD can be found in the CPD Policy Statement.

For more information please see: www.engc.org.uk/cpd

CPD Code for Registrants

Engineering professionals should take all necessary steps to maintain and enhance their competence through CPD. In particular, they should:

- Take ownership of their learning and development needs and develop a plan to indicate how they might meet these, in discussion with their employer, as appropriate
- Carry out a variety of development activities, both in accordance with this plan and in response to other

opportunities which might arise

- Record their CPD activities
- Reflect on what they have learned or achieved through their CPD activities and record these reflections
- Evaluate their CPD activities against any objectives they have set and record this evaluation
- Review their learning and development plan regularly, following reflection and assessment of future needs
- Support the learning and development of others through activities such as mentoring and sharing professional expertise and knowledge

At Professional Review, all applicants will need to demonstrate how they meet their CPD obligations and show that they understand that this requires an ongoing commitment.

Sampling registrants' CPD records

The Licensees undertake annual random samples of professionally active registrants' CPD records and provide appropriate feedback, as described in the Engineering Council's Regulations for Registration (RfR).

Registrants who are not professionally active (eg retired or on a career break) may request exemption from a sample. The intention behind CPD sampling is not to police registrants, but to encourage a culture in which registrants will naturally engage in CPD and take ownership of their own learning and development.

Recording evidence of CPD undertaken is a requirement of professional registration. Professionally active registrants who persistently do not respond to or engage with requests for CPD

records from a Licensee will be removed from the Engineering Council Register.

Professional and Ethical Behaviour

Statement of Ethical Principles

Engineering professionals work to enhance the wellbeing of society. In doing so they are required to maintain and promote high ethical standards and challenge unethical behaviour.

This Statement of Ethical Principles, published by the Engineering Council and the Royal Academy of Engineering, lists four fundamental principles to guide engineers and technicians in their professional life:

- Honesty and integrity
- Respect for life, law, the environment and public good
- Accuracy and rigour
- Leadership and communication

These express the beliefs and values of the profession and are explained in the Statement of Ethical Principles.

For more information please see: www.engc.org.uk/ethics

Guidance for Licensee Codes of Professional Conduct

All registrants are expected to observe the requirements of the Code of Professional Conduct (the Code) of the Licensee they have joined. This Code of Professional Conduct places a personal obligation on its members to act with integrity and in the public interest, in accordance with the Statement of Ethical Principles.

Each Licensee will have appropriate disciplinary processes in place to address breaches of their Code of Professional Conduct.

For more information please see: www.engc.org.uk/conduct

Guidance on Risk

This guidance, published by the Engineering Council, lists six principles to guide and motivate professional engineers and technicians in identifying, assessing, managing and communicating about risk.

For more information please see: www.engc.org.uk/risk

Guidance on Sustainability

This guidance, published by the Engineering Council, lists six principles to guide and motivate professional engineers and technicians when making decisions for clients, employers and society which affect sustainability.

For more information please see: www.engc.org.uk/sustainability

Guidance on Whistleblowing

This guidance, published by the Engineering Council, explains what whistleblowing is and the processes that engineers and technicians should follow when confronted with a potential whistleblowing situation:

For more information please see: www.engc.org.uk/whistleblowing

Guidance on Security

This guidance, published by the Engineering Council, lists six key principles to guide engineers and technicians in identifying, assessing, managing and communicating issues about security.

For more information please see: www.engc.org.uk/security

The Engineering Council reviews its guidance periodically and welcomes comments about this. Licensees may use this to assist them in developing guidance for their members.

For the latest information please see the Engineering Council website: www.engc.org.uk

International Activity

To ensure that professionally registered engineers' skills are recognised internationally, the Engineering Council is active within a number of multilateral mutual recognition agreements with other national engineering bodies. These agreements establish internationally benchmarked standards which allow signatory bodies to recognise each other's academic and professional qualifications, aiding mobility. In particular, the Engineering Council was a founder member of the Washington Accord and has subsequently worked with international partners to develop further agreements. The governance of these sits within the International Engineering Alliance (IEA).

The Engineering Council is a member of:

- The Agreement for International Engineering Technicians (AIET)
- The Dublin Accord (DA)
- The International Engineering Technologists Agreement (IETA)
- The International Professional Engineers Agreement (IPEA)
- The Sydney Accord (SA)
- The Washington Accord (WA)

The Engineering Council is a member of the European Network of Accreditation of Engineering Education (ENAE), which authorises accreditation and quality assurance agencies to award the EUR-ACE® label to accredited engineering degree programmes. In addition, the Engineering Council works within the European Federation of National Engineering Associations (FEANI) to strengthen the voice of engineers at the European level.

For more information please see: www.engc.org.uk/international

Glossary

AAQA	Approval and Accreditation of Qualifications and Apprenticeships. One of the Standards which the Engineering Council publishes, along with AHEP , ICTTech Standard , RfR and UK-SPEC . AAQA sets out the standards and learning outcomes which must be met for qualifications and apprenticeships to be approved for registration at all levels, ie EngTech or ICTTech , IEng and CEng . Previously known as AQAH (Approval of Qualifications and Apprenticeships Handbook). See: www.engc.org.uk/aaqa	AHEP	Accreditation of Higher Education Programmes. One of the Standards which the Engineering Council publishes, along with AAQA , the ICTTech Standard , RfR and UK-SPEC . Working in line with UK-SPEC , AHEP sets out the standards for the accreditation of higher education programmes in engineering. It also outlines the application process for universities that wish to secure or maintain accreditation of their programmes. Accreditation is carried out by Licensees in accordance with these requirements. See: www.engc.org.uk/ahep
Accredited / Accreditation	A process of peer review of a programme in a specified location against published learning outcomes and/or competences , including a review of delivery, assessment and facilities. This usually applies to programmes that are not assured externally. This usually involves a visit from a team of professional engineers nominated by Licensees . See also: Approved / Approval .	Aiet	The Agreement for International Engineering Technicians is an agreement which works to ensure that professionally registered Engineering Technicians' competence is recognised internationally. See International Activity on page 48 or www.ieagreements.org/aiet
Approved / Approval	The process of peer reviewing a programme against published learning outcomes. This involves a review of a qualification or an apprenticeship programme by a number of professionally registered engineers. See also: Accredited / Accreditation	AQAH	See AAQA .

CDM Regulations	Construction (Design and Management) Regulations 2015 , known as CDM Regulations or CDM 2015, are UK regulations governing construction projects of any type and size. CDM Regulations define responsibilities and place legal duties, enforceable by criminal law, on all parties involved in a construction project.
Chartered Engineer (CEng)	One of the professional titles available to individuals who meet the required standards of competence and commitment . See page 31 or www.engc.org.uk/ceng
Code of Professional Conduct	Every Licensee and Professional Affiliate which is licensed by the Engineering Council will have its own Code of Professional Conduct. One of the requirements of professional registration is demonstrating compliance with the appropriate organisation's Code. See page 47.
Commitment	A set of values, rules of conduct, and obligations that maintain and enhance the reputation of the engineering profession and the individual. Demonstrating both competence and commitment is part of the requirement to become professionally registered with the Engineering Council .

Competence	The ability to carry out appropriate tasks to an effective standard. Achieving competence requires the right level of underpinning knowledge, understanding and skill, as well as a professional attitude. Demonstrating both competence and commitment is part of the requirement to become professionally registered with the Engineering Council .
CPD	Continuing Professional Development . The systematic acquisition of knowledge and skills, and the development of personal qualities, to maintain and enhance professional competence for current and future roles. All members of Licensees have an obligation to carry out CPD and to support the learning of others. See: www.engc.org.uk/cpd
Credit and Qualifications Framework for Wales	The Credit and Qualifications Framework for Wales covers learning from the very initial stages (Entry 1, 2 and 3) to the most advanced (Level 8). It is managed by a strategic operational partnership comprising the Welsh Government, Higher Education Funding Council for Wales (HEFCW) and Qualifications Wales.
Documented Evidence	The written and documented evidence of experience and qualifications which is submitted for a Professional Review when applying for professional registration .

Dublin Accord (DA)	An international agreement among the bodies responsible for recognising programmes and qualifications for Engineering Technicians . It establishes a benchmark for Engineering Technician education across those bodies, and recognises the equivalence of accredited or approved Engineering Technician programmes. See International Activity on page 48 or www.ieagreements.org/dublin
Engineering Council	The UK regulatory body for the engineering profession. The Engineering Council sets and maintains internationally recognised standards of professional competence and ethics and holds the UK register of professional engineers and technicians.
Engineering Technician (EngTech)	One of the professional titles available to individuals who meet the required standards of competence and commitment . See page 19 or www.engc.org.uk/engtech
EQFM	The European Quality Foundation Model for continuous improvement.
EUR-ACE®	A European quality label for recognising accredited engineering degree programmes at Bachelors and Masters level. The Engineering Council is authorised to award the EUR-ACE® label. See: www.enaee.eu/eur-ace-system

FEANI	The European Federation of National Engineering Associations . The Engineering Council is the UK member of FEANI. See: www.feani.org
HASAW	Health and Safety at Work . Specifically, the 1974 Health and Safety at Work Act, the primary legislation covering occupational health and safety in the UK.
HNC	Higher National Certificate .
HND	Higher National Diploma .
ICTTech	Information and Communications Technology Technician. One of the professional titles available to individuals who meet the required standards of competence and commitment . See: www.engc.org.uk/icttech
IEA	International Engineering Alliance . A partnership of international organisations across seven agreements that aim to facilitate the recognition of engineering educational qualifications and professional competence . See International Activity on page 48 or www.ieagreements.org
IETA	The International Engineering Technologists Agreement is an agreement which works to ensure that professionally registered engineering technologists' competence is recognised internationally. See International Activity on page 48 or www.ieagreements.org/ieta

Incorporated Engineer (IEng)	One of the professional titles available to individuals who meet the required standards of competence and commitment . See page 24 or www.engc.org.uk/ieng
Individual Assessment	The route to professional registration for individuals without recognised qualifications. See page 16. The other way to achieve professional registration is through Recognised Qualifications .
International Professional Engineers Agreement	The International Professional Engineers Agreement is an international agreement for the purposes of recognising substantial equivalence of professional competence in engineering. See International Activity on page 48 or www.ieagrements.org/ipea
ISO	The International Organization for Standardization . ISO publishes documents such as ISO 45001 the international standard for occupational health and safety and ISO 9000, the international quality standards on quality management and quality assurance.
Licensee	An engineering membership organisation which is licensed by the Engineering Council to assess applicants for professional registration . Some Licensees are also licensed to approve or accredit programmes of learning. Licensees are sometimes known informally as Professional Engineering Institutions or PEIs. For a full and current list of Licensees see: www.engc.org.uk/licensees
May	In the context of the requirements set out in the Standards, 'may' indicates there is permission to do something.
National Engineering Bodies	National engineering bodies responsible for regulation of the profession, such as the Engineering Council , or the national academy such as the Royal Academy of Engineering .
NVQ	National Vocational Qualification . NVQs are qualifications developed and accredited according to criteria set out nationally, and that are achieved through assessment and training. In Scotland, they are known as Scottish Vocational Qualification (SVQ). To achieve an NVQ, applicants must prove they have the ability to carry out their job to the required standard. NVQs are based on National Occupational Standards that describe the 'competencies' expected in any given job role.

PEI (Professional Engineering Institution)	See Licensee .
Post-nominal	Letters placed after a person's name which indicate that the person holds a certain position, academic degree, professional accreditation , office or honour. Examples of engineering post-nominals include ICTTech , EngTech , IEng or CEng .
Professional Affiliate	An incorporated body or engineering institution which is closely associated with, but not licensed by, the Engineering Council . It may enter into an agreement with a Licensee to process its members for professional registration . For a full and current list of Professional Affiliates see: www.engc.org.uk/affiliates
Professional development	The process by which an individual gains professional competence . It may take place through formal and informal learning, and workplace training and experience.

Professional registration	The process in which an individual is admitted to the Engineering Council's Register as an Engineering Technician (EngTech), Incorporated Engineer (IEng), Chartered Engineer (CEng) or an Information and Communications Technology Technician (ICTTech). To achieve professional registration the individual must demonstrate, via a peer review process by a Licensee , that they have met the profession's Standards of commitment and competence . Individuals who have been awarded a professional registration title may use the relevant post-nominal .
Professional Review	A peer assessment process to decide whether an individual has met the requirements for registration . Professional Review is a holistic assessment of the applicant's competence and commitment against the relevant sections of UK-SPEC . See page 16–17.

Professional Review Interview	A peer assessment process to assess whether an individual has met the requirements for professional registration . It is a holistic assessment of the applicant's competence and commitment against the relevant sections of UK-SPEC . The Professional Review Interview is conducted by suitably qualified registrants , who make a recommendation whether the applicant has demonstrated the necessary competencies to achieve professional registration. See page 17.	Royal Academy of Engineering (RAEng)	The UK's national academy for engineering that works to advance and promote excellence in engineering. RAEng provides analysis and policy support relating to business and education, invests in the UK's research base to underpin innovation, and works to improve public awareness and understanding of engineering. See: www.raeng.org.uk
Recognised Qualifications	Qualifications that are recognised as delivering the appropriate learning outcomes to develop an individual's underpinning knowledge and understanding for professional registration .	Royal Charter	A formal document issued by the monarch granting rights and powers to an individual or an organisation.
Registrant	An individual who holds a professional registration title such as ICTTech , EngTech , IEng or CEng .	SCQF	The Scottish Credit and Qualifications Framework . For more information see: www.scqf.org.uk
Registration	See Professional Registration .	Shall	In the context of the requirements set out in the Standards, 'shall' indicates there is a requirement to do something (ie it is mandatory).
RfR	Regulations for Registration . One of the Standards which the Engineering Council publishes, along with AAQA , AHEP , ICTTech Standard and UK-SPEC . RfR sets out the rules, for Licensees , on the process of awarding professional registration titles such as ICTTech , EngTech , IEng or CEng .	Should	In the context of the requirements set out in the Standards, 'should' indicates a recommendation to do something.
		Statement of Ethical Principles	Published by the Engineering Council and the Royal Academy of Engineering . Engineering professionals should read the Statement of Ethical Principles in conjunction with their relevant Code of Professional Conduct . See page 47 or www.engc.org.uk/ethics

SVQ	Scottish Vocational Qualification. See also NVQ .
Sydney Accord (SA)	An international agreement among the bodies responsible for accrediting engineering technologist degree (IEng) programmes. It establishes a benchmark for engineering technologist education across those bodies, and recognises the equivalence of accredited engineering technologist programmes. See International Activity on page 48 or www.ieagreements.org/sydney
UK-SPEC	UK Standard for Professional Engineering Competence and Commitment . This document, which sets out the competence and commitment requirements for registration as an EngTech , IEng or CEng . UK-SPEC is one of the Standards which the Engineering Council publishes, along with AAQA , AHEP , the ICTTech Standard and RfR .
Underpinning Knowledge and Understanding	The knowledge and understanding of the principles of science, mathematics and engineering theory that are required to form the basis of engineering competence at a professional level.

Washington Accord (WA)	An international agreement among the bodies responsible for accrediting engineering degree (CEng) programmes. It establishes and benchmarks the standard for professional engineering education across those bodies, and recognises the equivalence of accredited engineering programmes.' See International Activity on page 48 or www.ieagreements.org/washington
-------------------------------	---



T +44 (0)20 3206 0500

F +44 (0)20 3206 0501

info@engc.org.uk

www.engc.org.uk

Registered Charity: 286142

© Engineering Council 2020 (edition 4.1 with updated hierarchy diagram September 2022). First published 2003. Reviewed 2008 and 2013. Please refer to the Engineering Council website, www.engc.org.uk for the most up-to-date version.

The Engineering Council encourages publication of extracts from this Standard, subject to attribution to the Engineering Council.