INFORMATION AND COMMUNICATIONS TECHNOLOGY TECHNICIAN (ICT*Tech*) STANDARD

Second edition

Engineering
Council

CONTENTS

FOREWORD

The knowledge economy of the 21st Century is underpinned by the skill, capability and professionalism of Information and Communications Technology (ICT) technicians. In our increasingly mobile, data driven and inter-connected world, we need competent ICT technicians to help design, develop, install, and operate both ICT customer solutions and the vital infrastructures that ICT services and products are built upon. Such infrastructures include networks and data centres supporting business applications, content distribution, software, machine to machine (M2M) and multimedia services delivered to/from a range of home, personal, business and mobile devices.

Working closely with major employers of ICT technicians, Sector Skills Council representatives, professional engineering institutions and ICT technicians themselves, the Engineering Council produced this ICT Technician (ICT*Tech*) Standard to meet the demand for professional registration of competent technicians in this vital field.

INTRODUCTION

Professionally registered Information and Communications Technology Technicians work in a variety of environments. These include, but are not limited to: offices, development labs, data and operational centres, field environments, customer premises and manufacturing.

They support a range of functions which utilise ICT solutions, and hardware and software components. Examples of functions include, but are not limited to: design, development, implementation, installation, operation, problem solving and security of ICT applications, products, services and/or infrastructures.

Under its Royal Charter, the Engineering Council licenses professional engineering institutions to assess candidates for inclusion on its register of ICT Technicians. For further information about the Engineering Council see: **www.engc.org.uk**

The purpose of the ICT*Tech* Standard

Professional registration with the Engineering Council is based on demonstration of competence and commitment. This document describes the competence and commitment requirements that have to be met for registration as an ICT Technician (ICT*Tech*). It includes examples of activities that could demonstrate achievement of the requirements, to enable individuals and employers to find out whether they or their staff can meet the requirements. Qualifications that exemplify the required knowledge and understanding are listed, however it should be noted that there are other ways of demonstrating achievement.

This document also explains the steps necessary to achieve professional registration; the requirement to maintain and enhance competence once registered; and the obligations to act with integrity and in the public interest that are placed on registrants through their membership of a licensed professional engineering institution.

A glossary of terms is included.

Why register?

Professional registration, allowing the use of the post-nominal ICT*Tech*, sets a professional ICT Technician apart from those who are not registered. In our fast-moving world of new technologies and qualifications it establishes their proven knowledge, understanding and competence. In particular, registration demonstrates a commitment to professional standards, and to developing and enhancing competence, as well as a desire to make a contribution to the ICT industry and society. Holding ICT*Tech* registration therefore gives an edge to candidates applying for jobs.

Furthermore, continued registration as an ICT*Tech* requires membership of a professional engineering institution, which provides professional development opportunities and guidance. Resources may include regular hard copy or online publications, careers advice and professional development systems, and opportunities to network with colleagues with similar professional interests.

Employers of registered ICT Technicians have the assurance of knowing that their employees have had their competence independently assessed, their credentials verified, and their commitment to Continuing Professional Development (CPD) established. They will have gained the recognition of their peers as meeting standards for knowledge and experience. Maintaining registration ensures that they are exposed to new developments in their profession, and provides numerous opportunities to benefit from these. It also means that they are governed by a professional code of conduct, and receive assistance in determining their obligations under this code.

Further benefits for individuals can be found at: **www.engc.org.uk/benefits** and for employers at: **www.engc.org.uk/informationfor/employers/**

Progression opportunities

Achieving professional ICT Technician registration is an independent public recognition of an individual's professional competence and their commitment to ongoing CPD. Registered ICT Technicians have earned the right to put ICT*Tech* after their name and are justifiably proud of that achievement.

Information and Communications Technology is a rapidly growing, dynamic, global field with many new exciting areas in which to develop competences and additionally take wider, more senior responsibilities. Registered ICT Technicians possess a solid development foundation which acts as a launch pad for career development and progression to other professional registration titles such as Incorporated Engineer (**www.engc.org.uk/ieng**), Chartered Engineer (**www.engc.org.uk/ceng**) and Chartered IT Professional (**www.bcs.org or www.theiet.org**) depending on the direction that their career follows.

Professional engineering institutions can advise members on progression opportunities including how to demonstrate the management, competence and knowledge requirements for other registration titles.
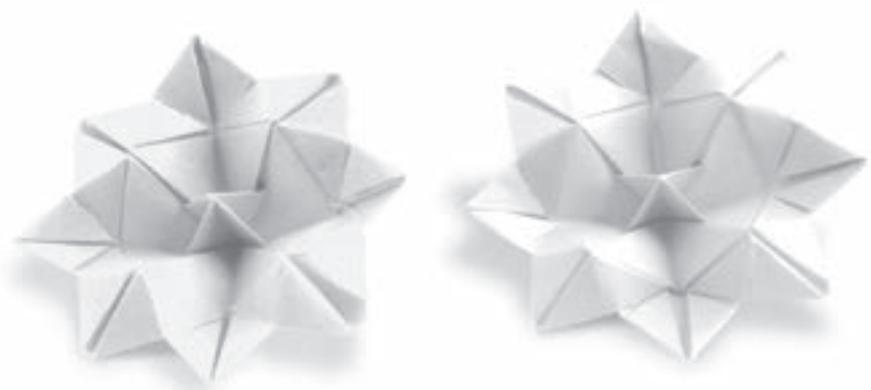
Knowledge and understanding requirements

To become professionally registered as an ICT Technician, candidates need to demonstrate that they have the appropriate technical knowledge. They may have developed this through experience or by gaining technical qualifications.

Holding relevant formal qualifications at the following levels could be one way to demonstrate such knowledge:
• Level 3 of the Qualifications and Credit Framework/National Qualifications Framework[†] for England and Northern Ireland
• Level 6 of the Scottish Credit and Qualifications Framework
• Level 3 of the Credit and Qualifications Framework for Wales.

Professional engineering institutions may approve other equivalent qualifications and programmes for the purposes of registration. The Engineering Council website provides a searchable database of such approved qualifications and programmes: **www.engc.org.uk/techdb**

However, formal qualifications are not essential for achieving ICT*Tech* professional status. Industry certification, for example certificates awarded by major networks or IT organisations, suppliers and vendors, may support an application and help to demonstrate technical knowledge and understanding.

Those who do not hold any formal qualifications or industry certification may need to provide additional evidence to demonstrate how they have gained technical knowledge.

Alternatively, their company may have implemented the Skills Framework for the Information Age (SFIA), enabling them to undertake a self-assessment of their IT skills, including identification of the relevant supporting evidence. ICT*Tech* registrants would normally be operating at SFIA level 3 or above, i.e. a practitioner who requires minimal support and is able to use their own technical skill and knowledge to identify and solve complex problems.

Professional engineering institutions will be able to offer more information about the SFIA framework and support, should candidates wish to complete a self-assessment of their technical IT skills to determine if they are ready to apply for ICT*Tech*. For more information please see: **www.sfia-online.org**

How to register

Professional registration is open to individuals who can demonstrate competence and commitment to perform professional work to the necessary standard.

Anyone wishing to be registered must apply through a professional engineering institution licensed by the Engineering Council to assess ICT*Tech* candidates. Institutions can provide advice about the process and typical timescales for the review. A list of institutions can be found at: **www.engc.org.uk/peis**

The assessment process is known as a professional review. The process starts with an application made in accordance with the requirements of the institution. A detailed description of the format for this will be provided by the institution, but any claim of qualifications, experience or training will need formal documented evidence. When submitting details, applicants will need to show how this relates to the required competences and commitment.

[†] See document of amendments at **http://www.engc.org.uk/engcdocuments/internet/Website/2017_Standards_Amendments.pdf** for updates.

Members of a Professional Affiliate (see glossary) that has an agreement with a licensed professional engineering institution to process its members for registration may apply through the institution. For a current list of Professional Affiliates please see: **www.engc.org.uk/pas**

What is competence?

Competence is the ability to carry out a task to an effective standard. To achieve competence requires the right level of knowledge, understanding and skill, and a professional attitude. Competence is developed by a combination of formal and informal learning, and training and experience, generally known as initial professional development. However, these elements are not necessarily separate or sequential and they may not always be formally structured.

Pages 10 – 15 of this document set out the threshold generic competence and commitment standard for registration as an ICT Technician and include some examples of the kind of evidence that would help to demonstrate these. The list of examples is not intended to be exhaustive. There may be other examples and local equivalents.

There are five generic areas of competence and commitment for ICT *Tech* registrants, broadly covering:

A Knowledge and understanding

B Design, development, deployment or operation of ICT solutions

C Personal responsibility

D Communication and inter-personal skills

E Professional commitment

What is commitment?

Registered ICT Technicians demonstrate a personal and professional commitment to society, their profession, and the environment. They are required to show that they have adopted a set of values and behaviours that will maintain and enhance the reputation of the profession. Specific evidence is required in the areas of:

• Complying with codes of conduct

• Managing and applying safe systems of work

• Undertaking ICT work in a way that contributes to sustainable development

• Carrying out CPD necessary to maintain and enhance competence

• Actively participating within the profession.

This revision of the Standard includes an explicit requirement to exercise responsibilities in an ethical manner (see standard E5). The Statement of Ethical Principles developed by the Engineering Council and the Royal Academy of Engineering (**www.engc.org.uk/professional-ethics**) sets a standard to which members of the profession should aspire in their working habits and relationships. The values on which it is based should apply in every situation in which ICT Technicians exercise their judgement.

Further information on the required standards is available from a variety of sources. Each institution will have its own Code of Conduct, in line with the generic framework on page 16 of this document, and supporting guidance. The Engineering Council has published a CPD Code for Registrants, reproduced on page 9, as well as guidance on risk and sustainability. See page 17 for further details.

Assessment of competence and commitment

To become professionally registered, applicants must have their competence and commitment assessed through a process known as professional review. This is a peer review process, by registrants who are competent and trained to undertake this kind of assessment. Applicants are assessed against the standards on pages 10-15, which may be adapted by the institution to relate specifically to the particular technologies or industries with which it is concerned.

There is no prescribed time period for the development of competence and commitment – it depends on many factors, such as prior qualifications or experience, job role and personal circumstances. Candidates are required to provide documentary evidence as part of the assessment process and may need to undertake an interview. Institutions will be able to provide specific guidance and support on their assessment process, including how to present evidence of training and experience.

On completion of the professional review, a decision will be made by the relevant committee of the institution. A positive decision will result in registration of the candidate as an ICT Technician. Retention of the title requires continued membership of the admitting institution or another licensed for that title, or a Professional Affiliate which has a registration agreement with an institution licensed for that title, and payment of an annual fee.

Maintaining and enhancing competence

Candidates applying for professional registration must be committed to maintaining and enhancing their competence. They will be required to show evidence that they have taken steps to ensure this, and that they intend to continue to do this in line with the CPD Code for Registrants. This is an important part of recognition as a registered ICT Technician. It is important that anyone seeking registration recognises that this will entail obligations and an ongoing commitment.

CPD Code for Registrants

ICT Technicians should take all necessary steps to maintain and enhance their competence through Continuing Professional Development (CPD). In particular they should:

1 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.

2 Undertake a variety of development activities, both in accordance with this plan and in response to other opportunities which may arise.

3 Record their CPD activities.

4 Reflect upon what they have learned or achieved through their CPD activities and record these reflections.

5 Evaluate their CPD activities against any objectives which they have set and record this evaluation.

6 Review their learning and development plan regularly following reflection and assessment of future needs.

7 Support the learning and development of others through activities such as mentoring, and sharing professional expertise and knowledge.

STANDARD OF COMPETENCE AND COMMITMENT FOR ICT TECHNICIANS

Professionally registered Information and Communications Technology Technicians (ICT *Techs*) work in a variety of environments. These include, but are not limited to: offices, development labs, data and operational centres, field environments, customer premises and manufacturing.

They support a range of functions which utilise ICT solutions, and hardware and software components. Examples of functions include, but are not limited to: design, development, implementation, installation, operation, problem solving and security of ICT applications, products, services and/or infrastructures.

Information and Communications Technology Technicians must be competent throughout their working life, by virtue of their education, training and experience, to:	The examples given below are intended to help you identify activities you might quote to demonstrate the required competence and commitment for ICT *Tech* registration. These are not exhaustive. Moreover, you are not required to give multiple examples to demonstrate competence and commitment.
A Use ICT knowledge and understanding when applying technical, practical and systems skills.	**Provide evidence that you have the know-how to do a job involving ICT and are able to use your experience in ICT to solve a problem or to improve a process.**
This includes the ability to:	Examples of evidence include:
A1 Apply ICT principles in an analytical and systematic approach, to solve problems and contribute to continuous improvement.	For a piece of ICT equipment, software or system, which you have worked on: • explain how it works • or describe your involvement in the solution to a problem • or describe how you were involved in continuous improvement • or describe your involvement in improved customer service.
A2 Review, select and use appropriate techniques, procedures and methods to undertake activities.	Describe how you chose and applied specific technical knowledge of tools, applications and systems relevant for your own area of ICT systems.

B	Contribute to the design, development, configuration, testing, commissioning, installation, deployment, operation, migration or maintenance of ICT solutions, products, processes, systems, services or applications.	Say how you have contributed to the organisation of your work and to the necessary resources to complete tasks.
	This includes the ability to:	Examples of evidence include:
B1	Identify and/or respond to problems with ICT solutions, services or infrastructure and apply suitable methods to seek the causes and to guide the development of satisfactory solutions.	Illustrate how you have used established procedures to measure and monitor the performance of an ICT system or component; explain how you identified the sources of a problem in the operation or commissioning of an ICT system or component and describe the measures you proposed and helped take to fix and improve the system. Describe how you have used diagnostic methods to identify causes and achieve satisfactory solutions. Describe how you have used tools or techniques to diagnose and, where appropriate, address programming errors, software development errors or bad practices to improve the reliability, security and resilience of application components. Describe how you have used proven programming or software development techniques to meet a design specification.
B2	Select, organise and use resources effectively to complete ICT tasks, with consideration for factors such as cost, performance, confidentiality, security, quality and availability of service, health, safety and environmental impact.	Describe how you plan, schedule and monitor your own work competently within limited deadlines. Describe how you selected, organised or used resources in an ICT task. Describe how you made your choice of software, hardware, solutions, ICT services, or contracted skills to help you complete the task, and how your choice contributed to the task. Explain how your choice contributed to the quality of the result for the users. Describe how you have contributed to the organisation of your work and to the necessary resources to complete tasks.

B3	Configure or maintain ICT systems to provide satisfactory performance and quality of service.	Give an example of how you have configured an ICT solution, system, hardware or software to establish or maintain efficiency, quality of service or performance.

Describe your involvement in ensuring service level agreements are not breached, and agreed service levels are achieved and maintained.

Give an example of when issues should be escalated to a higher level.

Give examples where you have ensured that company work instructions, end-to-end processes and system documents in your own area of work are up to date and adhered to. |
| **B4** | Secure and protect ICT systems from intrusion, damage, attack or data loss. | Provide examples of how you contribute to the continuing integrity of an ICT system by detecting and rectifying potential failures or identifying risks.

Demonstrate that appropriate measures are taken, within your own area of work, to ensure your employer, colleagues, customers and the public are protected; this can include security, performance, change control, user accessibility and health and safety measures.

Describe how you have undertaken data protection, risk assessments, security measures to prevent intrusion, etc. |
| **C** | **Accept and exercise personal responsibility.** | **Show that you have accepted personal responsibility for the completion of a task which either achieved the agreed targets or led you to identify omissions or contingencies that prevented the attainment of targets.** |
| | This includes the ability to: | Examples of evidence include: |
| **C1** | Work reliably and effectively on ICT tasks without close supervision and by adhering to the job instructions or best practice. | Demonstrate how you were personally identified with what had to be done in an ICT task and how agreement was reached on the specification of the task, including the standards of the work and work practices. Give an indication of the outcomes.

Describe when and how you escalated an issue to a higher level.

If relevant in your role, give an example of how you have relied on others to help you complete a task, how you described what they had to do and how you asked them to account for their work. |

C2	Accept responsibility for work of self or others.	Describe an example where you have sought advice from a knowledgeable colleague to resolve an issue.

Give an example of how you have prioritised your work whilst working under general supervision.

If relevant to your role, describe an example where you have reviewed and accepted the work of others to an agreed specification. |
| **C3** | Accept, allocate or supervise technical and other tasks. | Describe when and how you escalated an issue to a higher level.

If relevant in your role, give an example of how you have relied on others to help you complete a task and how you described what they had to do and how you asked them to account for their work. |
| **C4** | Be aware of and/or involved in continuous quality improvement. | Demonstrate how you have contributed to relevant quality audits.

Give an example of where you have reported a problem which has subsequently improved a process.

Demonstrate where you have delivered against a quality improvement action. |
| **D** | **Use effective communication and interpersonal skills.** | **Show that you can contribute to discussions, make a presentation, read and synthesise technical information and write different types of documents.** |
| | This includes the ability to: | Examples of evidence include: |
| **D1** | Communicate technical and other information effectively in English[1].

Use the appropriate methods of communication to ensure technical and non-technical information is understood by the intended audience. | Describe your choices of communication methods and why you chose them, for example: email, text messages, letters, phone messages, work instructions, progress notes, media clips, software (including scripting) with comments, instructions to operators/users and task specifications.

Give examples of different kinds of documents and/or presentations you have prepared or contributed to with an emphasis on those that include technical information about an ICT solution, system, process or hardware or software component.

Give examples of where you have had to prepare documents or presentations for technical and non-technical audiences or recipients. |

1 Any interviews will be conducted in English, subject only to the provisions of the Welsh Language Act 1993 and any Regulations which may be made in implementation of European Union directives on free movement of labour.

D2	Work effectively with colleagues, customers, suppliers, users and the public, ensuring that ICT tasks undertaken are effectively linked to related tasks. Be aware of the needs and concerns of others, especially where related to diversity and equality.	Give an example of a task you have been involved in where you had responsibilities for an aspect of the ICT component of the task. Describe the roles of the people you have liaised with and your formal relationship with them. Describe a few ICT tasks where you had to deal with people in different roles in each project. Give an example of how you worked effectively with department/project team members, customers or suppliers. Provide examples to show that you understand how your ICT tasks affect, or are affected by, tasks performed, colleagues, clients, suppliers or users in an organisation, process or broader user context. Give an example of where you applied diversity and anti-discrimination legislation.
E	**Demonstrate a personal commitment to an appropriate code of professional conduct, recognising obligations to society, the profession and the environment.**	**Your commitment will be to uphold the standards to which all members of your institution subscribe. You need to show that you have read and understood your Institution's Code of Conduct.** Examples of evidence include:
E1	Comply with the Code of Conduct of the professional engineering institution or Professional Affiliate of which you are a member.	Demonstrate that you are aware of regulatory frameworks that apply to your work; illustrate the ways in which you work to satisfy these ordinances; and indicate that you have read and understood your institution's Code of Conduct.
E2	Manage and apply healthy, safe, secure systems of work, and be aware of appropriate hazard identification and risk management systems. This could include an ability to: • Identify and take responsibility for own obligations for health, safety and welfare issues • Apply systems that satisfy health, safety and welfare requirements.	Provide examples of good practices you adopt in your work to ensure safety, security or confidentiality, or safe disposal. List the courses and briefings you have attended that explained the regulations and practices relating to health, safety, data protection, sustainable development and security in your workplace activities and locations. Demonstrate how you have considered safety and/or security requirements and risk management in design, installation, testing or operational activities.

E3	Show you are aware of and apply good practices that protect other people, organisations or the environment from harm caused by the operation of ICT systems. Undertake ICT work in a way that contributes to sustainable development.	Illustrate how, in your work activities, you have considered sustainability, or prevented/prevent harm and/or loss to colleagues, business, partners, customers, the public, the environment. You may have considered: loss/corruption of vital data; inappropriate access to vital data; breach of security (physical, network, system); loss of system performance; inefficient use of ICT resources and energy; proper disposal of hazardous components; inadequate testing, training, project review or risk assessment. Demonstrate how you have considered sustainability in design, installation, testing, operational and/or risk assessment activities.
E4	Carry out and record CPD necessary to maintain and enhance competence in ICT, including: • Undertake reviews of own development needs • Plan how to meet personal and organisational objectives • Carry out planned (and unplanned) CPD activities • Maintain evidence of competence development • Evaluate CPD outcomes against any plans made • Assist others with their own CPD.	Describe how you keep yourself up to date, perhaps by studying new standards or techniques, by making use of technical magazines, webinars or technical meetings (online or face to face) and so on. If you have had the opportunity, illustrate how you have helped others to develop their understanding of ICT.
E5	Exercise responsibilities in an ethical manner.	Give an example of where you have applied ethical principles as described in the Statement of Ethical Principles on page 16. Give an example of where you have applied/upheld ethical principles as defined by your organisation or company, which may be in its company or brand values.

PROFESSIONAL AND ETHICAL BEHAVIOUR

Statement of Ethical Principles†

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 achieving the high ideals of professional life:

• Accuracy and rigour
• Honesty and integrity
• Respect for life, law and the public good
• Responsible leadership: listening and informing.

These express the beliefs and values of the profession and are amplified in the Statement of Ethical Principles at: **www.engc.org.uk/professional-ethics**

Guidelines for Institution Codes of Conduct†

All registrants are expected to observe the requirements of the Code of Conduct of the institution they have joined.

The Code of Conduct of each licensed professional engineering institution should place a personal obligation on its members to act with integrity and in the public interest. It should be worded in such a way as to encourage members to act in accordance with the Statement of Ethical Principles. Institutions shall ensure that they have appropriate disciplinary processes in place to deal with breaches of their Codes of Conduct.

Specifically, Codes of Conduct should oblige members to:

1   Act with due skill, care and diligence and with proper regard for professional standards.
2   Prevent avoidable danger to health or safety.
3   Act in accordance with the principles of sustainability, and prevent avoidable adverse impact on the environment and society.
4   Maintain and enhance their competence, undertake only professional tasks for which they are competent, and disclose relevant limitations of competence.
5   Accept appropriate responsibility for work carried out under their supervision.
6   Treat all persons fairly and with respect.
7   Encourage others to advance their learning and competence.
8   Avoid where possible real or perceived conflict of interest, and advise affected parties when such conflicts arise.
9   Observe the proper duties of confidentiality owed to appropriate parties.
10 Reject bribery and all forms of corrupt behaviour, and make positive efforts to ensure others do likewise.
11 Raise a concern about a danger, risk, malpractice or wrongdoing which affects others ('blow the whistle'), and support a colleague or any other person to whom you have a duty of care who in good faith raises any such concern.*
12 Assess and manage relevant risks and communicate these appropriately.
13 Assess relevant liability, and if appropriate hold professional indemnity insurance.
14 Notify the Institution if convicted of a criminal offence or upon becoming bankrupt or disqualified as a Company Director.
15 Notify the Institution of any significant violation of the Institution's Code of Conduct by another member.

* Included August 2015.

† See document of amendments at **http://www.engc.org.uk/engcdocuments/internet/Website/2017_Standards_Amendments.pdf** for updates.

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.

1   Apply professional and responsible judgement and take a leadership role
2   Adopt a systematic and holistic approach to risk identification, assessment and management
3   Comply with legislation and codes, but be prepared to seek further improvements
4   Ensure good communication with the others involved
5   Ensure that lasting systems for oversight and scrutiny are in place
6   Contribute to public awareness of 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.

1   Contribute to building a sustainable society, present and future
2   Apply professional and responsible judgement and take a leadership role
3   Do more than just comply with legislation and codes
4   Use resources efficiently and effectively
5   Seek multiple views to solve sustainability challenges
6   Manage risk to minimise adverse impact to people or the environment

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

Professional engineering institutions may use these documents to assist them in developing guidance for their members.[†]

Continuing Professional Development (CPD) Policy Statement

In addition to the CPD Code for Registrants on page 9, in 2013 the Engineering Council published a policy statement about CPD. A supporting explanatory note for professional engineering institutions is available at: **www.engc.org.uk/cpd**

CPD is understood across most professions as the systematic acquisition of knowledge and skills, and the development of personal qualities, to maintain and enhance professional competence[2]. All members of professional engineering institutions have an obligation to undertake CPD, and to support the learning of others. For Engineering Council registrants, this obligation underpins the value of the professional titles of Engineering Technician, Incorporated Engineer, Chartered Engineer and ICT Technician, as well as serving society and enabling it to have confidence in the engineering profession.

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2 The five areas of technical and non-technical professional competence for Engineering Council registrants are set out in UK-SPEC and the ICT Technician Standard

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† See document of amendments at **http://www.engc.org.uk/engcdocuments/internet/Website/2017_Standards_Amendments.pdf** for updates.

CPD has several purposes, which will vary in relation to registrants' circumstances, their needs and their career progression. Very often registrants will do CPD to assure their continuing competence in their current job. At other times, CPD may be done to enable a different role within or outside their organisation (which may have more management content or which may not be a pure engineering role). Equally, CPD may help them follow a longer term career development plan, or to enhance their professionalism in a wider context than a specific job role. The focus of registrants' learning may therefore be on different areas of competence at different times.

CPD can also take a variety of different forms. At its heart is informal learning through the challenges and opportunities of working life, and interaction with others (eg colleagues, customers, suppliers) including professionals from other disciplines. However, this may be supplemented by structured activities such as courses, distance learning programmes, private study, preparation of papers and presentations, mentoring, involvement in professional body activities, or relevant voluntary work. (This list is not intended to be exhaustive). Individual registrants are best placed to determine their needs and how to meet them. Often, employers or experienced colleagues will play a significant part in this, but individuals should be responsible and proactive in seeking professional development opportunities.

While most engineering professionals undertake CPD, this is often on a casual basis, without any deliberate planning, recording of activities, or conscious reflection. Whatever its purpose or nature, learning through CPD should be reflective and should relate to specific objectives even if these are only to maintain their professional engineering competence. Having a regularly reviewed development plan will facilitate learning, although there will always be a place for unplanned activities. Registrants should record both their CPD activities and what they have learned or achieved through them, and relate this to any planned objectives. Doing this will help them to determine their future needs and plan accordingly, as part of a cyclical process. It will also encourage an outcome-based approach which is more appropriate to professional learning than relying solely on quantitative measures such as hours or points.

One of the main functions of a professional body is promoting and supporting the professional development of its members. The professional engineering institutions licensed by the Engineering Council advise and support their members on CPD in a number of ways, such as providing guidance, resources and mentoring programmes. A number provide CPD planning and recording systems, and review their members' CPD from time to time. They should in future strengthen their support by reviewing a random sample of their professionally active registrants' CPD records each year and providing appropriate feedback. The sample need not include retired registrants or those on career breaks for any reason (eg maternity or paternity leave, parenthood, unemployment etc).

Glossary

Approved Qualification or Apprenticeship	This has been reviewed by a professional engineering institution and meets its requirements for the purposes of registration in a specific stated category.
Chartered Information Technology Professional (CITP)	A title awarded by BCS, The Chartered Institute for IT **www.bcs.org** and the Institution of Engineering and Technology (IET) **www.theiet.org**
Competence	The ability to carry out a task to an effective standard. Its achievement requires the right level of knowledge, understanding and skill, as well as a professional attitude. It is part of the requirement (along with commitment) that must be demonstrated in order for an individual to be admitted to the Engineering Council's register at the relevant level.
Continuing Professional Development (CPD)	The systematic acquisition of knowledge and skills, and the development of personal qualities, to maintain and enhance professional competence. All members of professional engineering institutions have an obligation to undertake CPD, and to support the learning of others. **www.engc.org.uk/cpd**
ICT*Tech* Standard	The UK Standard which sets out the competence and commitment requirements for registration as an Information and Communications Technology Technician with the Engineering Council. **www.engc.org.uk/icttech**
Engineering Council	The UK regulatory body for the engineering profession that sets and maintains internationally recognised standards of professional competence and ethics, and holds the UK register of professional engineers and technicians. **www.engc.org.uk**
National Qualifications Framework (NQF)	The NQF provides an indication of the relative demand of different qualifications. Qualifications in the NQF are grouped together according to their difficulty. They are given a level from entry level to level 8. **http://ofqual.gov.uk/qualifications-and-assessments/qualification-frameworks/**
National Vocational Qualification (NVQ)	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, candidates must prove that they have the ability (competence) to carry out their job to the required standard. NVQs are based on National Occupational Standards that describe the 'competences' expected in any given job role.
Professional Affiliate	An incorporated body/engineering institution which is closely associated with, but not licensed by, the Engineering Council. It may enter into an agreement with a professional engineering institution to process its members for registration. For a list of Professional Affiliates see: **www.engc.org.uk/pas**
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 engineering institution	Membership organisation which is licensed by the Engineering Council to assess candidates for professional registration. Some institutions also have a licence to accredit degree programmes and/or company training schemes. For a list see: **www.engc.org.uk/peis**
Professional registration	The process whereby an individual is admitted to the Engineering Council's Register as an ICT Technician based on the individual demonstrating, via a peer review process by a licensed professional engineering institution, that he/she has met the profession's standards of commitment and competence. Award of this title permits the use of the ICT*Tech* post-nominal.
Professional review	A peer assessment process to decide whether an individual has met the requirements for registration. It is a holistic assessment of the applicant's competence and commitment against the standard set out in the ICT*Tech* Standard.
Qualifications and Credit Framework (QCF)†	Qualifications that use the QCF rules are made up of units. This provides flexible ways to get a qualification. Each unit has a credit value which states how many credits are awarded when a unit is completed.
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. **www.raeng.org.uk**
SCQF	The Scottish Credit and Qualifications Framework. **www.scqf.org.uk**
SFIA	Skills Framework for the Information Age **www.sfia-online.org**

† See document of amendments at **http://www.engc.org.uk/engcdocuments/internet/Website/2017_Standards_Amendments.pdf** for updates.

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T +44 (0)20 3206 0500
F +44 (0)20 3206 0501
info@engc.org.uk
www.engc.org.uk

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