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ICT *Tech*



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

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

Much of today's economy depends on the knowledge, skill and responsibility of the ICT technicians who facilitate its continued success. Inevitably many of those responsible for its introduction, maintenance and enhancement are self-taught, learning on the job as new techniques, software and hardware becomes available.

Working closely with major employers of ICT technicians, Sector Skills Council representatives, and with leading professional engineering institutions with experience of fast-developing technology, the Engineering Council has introduced this standard to meet the demand for professional registration of competent technicians in this field.

About this document

This document incorporates the ICT Technician standard (section B) and sets out the procedures to be followed and the system of assessment to become registered as a professional ICT Technician (ICTTech) (section A). This standard details the competence and commitment which must be demonstrated in order to achieve registration – and gives examples of how this might be done. Further requirements are also described in section B and supporting information is provided in section C.

Registration as an ICT Technician is open to everyone who can demonstrate competence to perform professional work to the necessary standards, and commitment to:

- Maintain that competence
- Work within professional codes
- Participate actively within the profession

Introduction

Registered ICT Technicians (ICTTechs) have technician level ICT practitioner skills at around NQF/QCF Level 3 (SCQF Level 6) – see section C. ICT Technicians work in a range of jobs that involve supporting or facilitating the use of ICT equipment and applications by others¹. They work in areas such as ICT hardware, software or system installation, operation, maintenance, incident/change/problem management, administration, security, fault diagnosis and fixing.

The ICTTech title is legally protected under the Engineering Council Royal Charter and Bye-Laws and through being a registered trademark. This means that only those achieving ICTTech registration may use ICTTech after their name.

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

Why register?

Registration sets a professional ICT Technician (ICTTech) apart from technicians who are not registered. In a fast-moving world of technologies and qualifications it establishes proven competence and demonstrates commitment to professional standards as well as to life-long learning. Hence, whether specified in job advertisements or not, registration as a professional ICT Technician gives an edge to candidates who have achieved it.

Registration as an ICTTech brings with it membership of a professional institution (see section A) which provides professional development guidance and opportunities as well as ways to network with colleagues with similar interests.

INFORMATION FOR APPLICANTS

How to become registered

Consider the statements, examples and other requirements in section B.
If you feel you can meet the standard:

- Apply to join a professional institution that is licensed by the Engineering Council to assess candidates for ICTTech registration. A list can be found at: www.engc.org.uk
- Apply for ICTTech registration through your professional institution

If you have any questions or difficulties at all – email or talk to someone at your professional institution.

How much will it cost?

The joining and annual registration fee are the same across all the professional institutions but the application fee and annual membership subscriptions vary. Most professional institution websites include a table of fees as well as information about what support and other benefits you will receive in return for your subscriptions.

Choice of application process

There are two possible paths to becoming registered. Your professional institution will be happy to advise if you want help in deciding.

Standard application

If you are working at the appropriate level and have gained certain specified qualifications certifying your depth of understanding then you may use this pathway. Your professional institution will provide you with advice on which qualifications and what sort of experience is required. There is no exam, but some professional institutions will interview candidates². Typically, someone who had completed an ICT Advanced Apprenticeship or who had other ICT practitioner qualifications at NQF/QCF Level 3 (SCQF 6) with appropriate working experience would apply through this process.

Individual application

If you don't have specific qualifications but can demonstrate competence and commitment at the appropriate depth and level through your working experience as an ICT practitioner, then you may be individually assessed. Again, there is no exam but this process may include assessment of your competence and commitment in your workplace³.

If you feel that you can meet the requirements for competence and commitment then your application will be welcomed.

Both assessment processes are carried out by trained assessors who are also experienced professional ICT practitioners.



Staff at your professional institution will be able to advise you on how best to present evidence of training and experience. If gaps in the evidence emerge, they will also usually be able to suggest ways in which they can be filled (although this may involve further training or additional experience). A positive decision will result in your registration as an ICT Technician (ICT *Tech*) and the Engineering Council will send you your registration certificate. Retention of the title requires continued membership of an Engineering Council licensed professional institution, abiding by its code of conduct, maintaining your professional development and payment of the annual subscriptions.

Appeals

Applicants for ICT Technician registration may appeal against the decision of the membership committee of the licensed professional institution to which they have applied. The Engineering Council requires all its licensed professional institutions to have robust and effective systems, including procedures to deal fairly and openly with contested membership and registration decisions. However, the Engineering Council is unable to intervene in the decision of a licensed professional institution.

Progression opportunities

Achievement of registration as a professional ICT Technician is valuable recognition in its own right. It may also provide a foundation for progression to other professional qualifications. Your professional institution will advise on how you can make best use of your continuing professional development, including keeping a record of evidence, that will help you to apply for other registration categories should your role and responsibilities develop. There are opportunities if you continue to develop in the same specialisation or progress into other specialist ICT practitioner areas, ICT management or to more engineering-oriented fields.

STANDARD OF COMPETENCE AND COMMITMENT FOR ICT TECHNICIANS

Registered ICT Technicians work in a range of jobs that involve the support or facilitation of others to use ICT equipment and applications.

These are examples of how you might demonstrate that you have the required competence and commitment in ICT.

A Use ICT knowledge and understanding when applying technical and practical 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:

A1 review and select appropriate tools, techniques, configurations, procedures and methods to install, operate, support, migrate and maintain ICT systems

Describe how you chose software, hardware or a configuration to bring about improvements or to diagnose faults in an ICT system or ICT hardware or software component.

A2 use ICT principles.

Explain how a piece of ICT equipment, software or system, which you have configured, used or deployed in your work, works.

B Contribute to the design, development, testing, commissioning, installation, operation, migration or maintenance of ICT products, processes, systems or services.

Say how you have contributed to the organisation of your work and to the necessary resources to complete tasks.

This includes the ability to:

B1 identify and/or respond to problems with ICT systems, hardware or software and apply diagnostic methods to seek 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.

B2 select, organise and use resources effectively to complete ICT tasks, with consideration for cost, performance, confidentiality, security, quality and availability of service, health, safety and environmental impact

Describe how you made decisions in an ICT task about your choice of software, hardware, ICT services, or contracted skills to help you complete the task and how your choice helped. Explain how it contributed to the quality of the result for the users.

B3 configure or maintain ICT systems to provide satisfactory performance and quality of service

Give an example of how you have configured an ICT system, hardware or software to establish or maintain efficiency, quality of service or performance.

B4 protect ICT systems from intrusion, damage 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.
B5 interact with colleagues, clients, suppliers or users to ensure that ICT tasks undertaken are effectively linked to related tasks.	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.
C Accept and exercise personal responsibility. This includes the ability to:	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.
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. 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.
D Use effective communication and interpersonal skills. This includes the ability to:	Show that you can contribute to discussions, make a presentation, read and synthesise technical information and write different types of documents.
D1 communicate technical and other information effectively in English*	Give examples of different kinds of documents and/or presentations you have helped prepare with an emphasis on those that include technical information about an ICT system or hardware or software component. Try to refer to documents or presentations that address technical and non-technical audiences or recipients. E-mails, software (including scripting) with comments, instructions to operators/users, task specifications are examples. The quality of your application itself will be relevant.

<p>D2 work effectively with colleagues, clients, suppliers or users.</p>	<p>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 liaised with and your formal relationship with them. Or perhaps list, instead, a few ICT tasks where you had to deal with people in different roles in each project.</p>
<p>E Make a personal commitment to a code of professional conduct, recognising obligations to the public, the profession and the environment.</p> <p>In order to satisfy this commitment, you must:</p>	<p>Show that you are aware of the standards to which all ICTTech registrants subscribe.</p>
<p>E1 comply with the Code of Conduct of the professional institution of which you are a member</p>	<p>Show 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 the Code of Conduct of your professional institution.</p>
<p>E2 apply healthy, safe, secure systems of work</p>	<p>Provide examples of good practices you adopt in your work to ensure safety, security or confidentiality. List the courses and briefings you have attended that explained the regulations and practices relating to health, safety, data protection and security in your workplace.</p>
<p>E3 show you are aware of good practices that protect other people, organisations or the environment from harm caused by the operation of ICT systems</p>	<p>Illustrate how, in your work, you have prevented or prevent specific harm that could be caused by, for example, loss of data, breach of security, loss of performance, poor training of user, uneconomic use of ICT resources, squandered energy, disposal of hazardous components, inadequate testing, little account of users skills, requirements or practices or excess risk.</p>
<p>E4 carry out continuing professional development necessary to maintain and enhance competence in ICT.</p>	<p>Describe how you keep yourself up to date, perhaps by studying new standards or techniques, by making use of technical magazines or technical meetings (online or face to face) and so on. If you have had the opportunity then illustrate how you have helped others to develop their understanding of ICT.</p>

* 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.

FURTHER REQUIREMENTS

1 Maintaining competence

Applicants for registration as an ICT Technician will be required to show evidence that they have taken steps to ensure that their competence is maintained and that they intend to continue to do this. This is an important part of recognition as an ICTTech. It is for this reason that ICT Technicians may only obtain and retain registration if they are members of one of the Engineering Council licensed professional institutions. It is important that anyone seeking registration recognises that this will entail obligations and an ongoing commitment.

There is not, at present, a requirement for formal revalidation of ICTTech registration. Nevertheless, registrants do have a professional obligation to maintain their competence and to keep a record of their professional development. This may be the same record as used for work appraisal systems or personal CVs. Professional institutions will provide guidance and may have online systems to help. Registrants may be removed or suspended from membership and registration if they are found not to have complied.

2 Professional behaviour

Registered ICT Technicians are expected to observe the requirements of the Code of Conduct of the professional institution they have joined. Professional institutions are obliged to respond to allegations of infringement of the code and may suspend or remove membership and registration if proven. Professional institution Codes of Conduct follow the generic framework below:

Guidelines for professional institution Codes of Conduct

Each licensed professional institution will place a personal obligation on its members to act with integrity, in the public interest, and to exercise all reasonable professional skill and care to:

- Prevent avoidable danger to health or safety
- Prevent avoidable adverse impact on the environment
- Maintain their competence
- Undertake only professional tasks for which they are competent
- Disclose relevant limitations of competence
- Accept appropriate responsibility for work carried out under their supervision
- Treat all persons fairly, without bias, and with respect
- Encourage others to advance their learning and competence
- Avoid where possible real or perceived conflicts of interest
- Advise affected parties when such conflicts arise
- Observe the proper duties of confidentiality owed to appropriate parties
- Reject bribery
- Assess relevant risks and liability, and if appropriate hold professional indemnity insurance
- Notify the professional institution if convicted of a criminal offence or upon becoming bankrupt or disqualified as a Company Director
- Notify the professional institution of any significant violation of the Code of Conduct by another member.

SUPPORTING INFORMATION

What is competence?

Section B sets out threshold generic competence standards for registration as a professional ICT Technician. Professional competence is attained through experience which includes application of and reflection upon formal, informal or non formal learning⁴.

Assessment of competence

As indicated in section A, applicants seeking registration as a professional ICT Technician must have their competence assessed. This process is known as a professional review. The assessment is made against the competence standards listed in section B, which may have been adapted by a professional institution to reflect the particular technologies or sectors it deals with. Professional institutions will advise on any specific requirements they have.

The level

In order to gauge the level of the competence standards, it may help to recall that, typically, someone who has completed an ICT Advanced Apprenticeship or who has other ICT practitioner qualifications at NQF/QCF Level 3 (SCQF 6) with appropriate working experience might be considered competent at this level. SFIA or PROCOM Level 3/Associate Professional levels provide indicative descriptions of typical responsibility levels and working relationships that reflect the level of competence required.

SFIA: www.sfia.org.uk

PROCOM: www.e-skills.com

For example, the SFIA4 framework⁵ defines level 3 responsibility as:

Autonomy

Works under general supervision. Uses discretion in identifying and resolving complex problems and assignments. Specific instruction is usually given and work is reviewed at frequent milestones. Determines when problems should be escalated to a higher level.

Influence

Interacts with and influences department/project team members. Frequent external contact with customers and suppliers. In predictable and structured areas may supervise others. Decisions may impact work assigned to individual/phases of project.

Complexity

Broad range of work, sometimes complex and non routine, in a variety of environments.

Business skills

Understands and uses appropriate methods, tools and applications. Demonstrates analytical and systematic approach to problem solving. Takes initiative in identifying and negotiating appropriate development opportunities. Demonstrates effective communication skills. Contributes fully to the work of teams. Can plan, schedule and monitor own work (and that of others where applicable) competently within limited time horizons and according to health and safety procedures. Is able to absorb and apply new technical information.

Is able to work to required standards and to understand and use the appropriate methods, tools and applications. Appreciates wider field of IS, how own role relates to other roles and to the business of the employer or client.

Further information

A list of professional institutions licensed to assess candidates for registration as ICT Technicians can be accessed at: www.engc.org.uk

NOTES

- 1 Herman, C. and Ellen, D. (2005). Women IT technicians – moving through the glass partition. Crossing Cultures Changing Lives Conference Oxford 2005. The Open University, UK. Available from: <http://oro.open.ac.uk/5702>
- 2 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.
- 3 As note 2.
- 4 The ECVET Reflector Project carried out on behalf of the European Commission offers the following definitions:

Competence includes:

 - i) cognitive competence involving the use of theory and concepts, as well as informal tacit knowledge gained experientially;
 - ii) functional competence (skills or know how), those things that a person should be able to do when they are functioning in a given area of work, learning or social activity;
 - iii) personal competence involving knowing how to conduct oneself in a specific situation; and
 - iv) ethical competence involving the possession of certain personal and professional values.

Formal learning: Learning that occurs in an organised and structured environment (in a school/ training centre or on the job) and is explicitly designated as learning (in terms of objectives, time or resources). Formal learning is intentional from the learner's point of view. It typically leads to certification.

Informal learning: Learning resulting from daily activities related to work, family or leisure. It is not organised or structured in terms of objectives, time or learning support. Informal learning is in most cases unintentional from the learner's perspective. It typically does not lead to certification.

Non formal learning: Learning which is embedded in planned activities not explicitly designated as learning (in terms of learning objectives, learning time or learning support), but which contain an important learning element. Non formal learning is intentional from the learner's point of view. It normally does not lead to certification. <http://www.ecvet.net/c.php/ecvet/glossary.rsys>
- 5 Levels of responsibility and accountability used in the SFIA4 framework <http://sfia.textmatters.com/busskills/rl3>



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The ICTTech register is run by the Engineering Council, a chartered regulatory authority. The Engineering Council runs registers for the engineering profession and contributes to the regulation of science and environmental professionals. As a regulator, the Engineering Council conducts regular reviews of organisations holding licences to assess candidates for registration, and maintains the standard against which registration is awarded.

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