

Competency Criteria for Engineering Technician

The competence criteria for is set by the Competence Statements issued by the Engineering Council, as part of UK-SPEC, for Engineering Technician (EngTech) registration.

To become registered as an Engineering Technician you will need to demonstrate your competence within the field of refrigeration and air conditioning engineering. You may have broad based experience and responsibility or specialise in one or more aspects of engineering. You will be able to apply proved techniques and procedures to solve practical engineering projects as part of your work.

You will need to satisfy the 14 objectives in the competence criteria when applying. The examples given are intended to help you identify activities you might quote to demonstrate the required competence and commitment. These are not exhaustive and you are not required to give multiple examples to demonstrate competence and commitment. Use this competence criteria framework for reference when putting together your Engineering Practice Report. Tell us about your career, education and training; explaining how this has made you more competent.

This Competence Criteria document is based on guidance provided by CIBSE. The IOR has a joint registration agreement with CIBSE for the processing of registration application by IOR members. IOR members do not have to show competence in Building Services Engineering, but they must be able to demonstrate all of the required competencies below in Refrigeration and/or Air Conditioning Engineering. It is not necessary for IOR members to join as a Member of CIBSE or pay CIBSE membership fees to gain Engineering Council Registration. They must however maintain their IOR membership.

A. Use engineering knowledge and understanding to apply technical and practical skills.

The reviewers will be looking for evidence that you have the know-how to do the job, and were able to go beyond the immediate requirements and use your initiative and experience to solve a problem or improve a process. This includes the ability to:

No	Objective	Range	Evidence Examples
A1	Review and select appropriate techniques, procedures and methods to undertake tasks.	Describe: <ul style="list-style-type: none"> • an example of work you did that went well, the choices you made and the outcome • or something in your work you were involved in which didn't quite work and explain why • or a technique, procedure or method you improved upon and explain why. 	<p>Explain what building services engineering involves and how it fits into the built environment.</p> <p>Work in teams with other professionals.</p> <p>Take part in a project involving several other disciplines.</p> <p>Get involved in meetings and negotiations.</p> <p>Communicate with colleagues to solve problems.</p> <p>Identify elements of work which have particular reference to more sustainable solutions and reducing carbon emissions.</p> <p>Evaluate and select appropriate maintenance strategies for a facility.</p>
A2	Use appropriate scientific, technical or engineering principles.	Drawing from your direct experience, this might be an explanation of how a piece of equipment, system or mechanism works.	<p>Give examples of your research and/or calculations contributing to specific jobs and demonstrate outcomes.</p> <p>Show how your own work contributed to the success of a project or process improvement.</p> <p>Do manual or computer-assisted calculations.</p> <p>Research manufacturers' sales literature, and assess costs and benefits associated with various purchase/manufacture decisions about components.</p> <p>Use and assist in the evaluation of computer software packages: <ul style="list-style-type: none"> • Produce calculations for plant and fabric selection • Collect and analyse energy consumption • Analyse data from BMS to optimise efficient operation of systems. </p>

B. Contribute to the design, development, manufacture, construction, commissioning, operation or maintenance of products equipment, processes, systems or services.

Explain how you contribute to one or more of these activities. In this context, this includes the ability to:

No	Objective	Range	Evidence Examples
B1	Identify problems and apply appropriate methods to identify causes and achieve satisfactory solutions.	Show an example of how you have used measurement, monitoring and assessment to: <ul style="list-style-type: none"> • identify the source of a problem • or to identify an opportunity • or to propose a solution. 	<p>Take part in short, medium or long-term maintenance activities.</p> <p>Isolate problems, for example caused by incorrect operation or defect.</p> <p>Contribute to decisions about resourcing and outsourcing processes, services or operations.</p> <p>Report on cost implications of planned maintenance and different approaches/management systems available.</p> <p>Test and verify results, for example as part of a handover or commissioning exercise.</p> <p>Contribute to outsourcing and refurbishment decisions.</p> <p>Investigate the operation of a post occupancy review.</p>

No	Objective	Range	Evidence Examples
B2	Identify, organise and use resources effectively to complete tasks, with consideration for cost, quality, safety, security and environmental impact.	<p>Illustrate how you make decisions about:</p> <ul style="list-style-type: none"> • what information, material, component, people or plant to use • or how to introduce a new method of working • or what precautions you took. <p>Describe how you have contribute to best practice methods of continuous improvement, e.g. ISO 9000</p>	<p>Record specific examples of actual installations.</p> <p>Give examples of differing approaches used for selection of products or equipment to meet project or stakeholder objectives.</p> <p>Identify how decisions can influence the environmental impact.</p> <p>Discuss the consequences of neglect or error, for example in the design of processes, selection of equipment, use or maintenance choices.</p> <p>Give examples of contributing to continuous improvement.</p> <p>Appreciate cost/benefit calculations and whole life costing.</p>

C. Accept and exercise personal responsibility.

Describe an experience or instance where you have had to accept personal responsibility for seeing a process through to completion within agreed targets. This includes the ability to:

No	Objective	Range	Evidence Examples
C1	Work reliably and effectively without close supervision, to the appropriate codes of practice.	Your evidence should show how you identified and agreed what had to be done and to what standards on a typical project.	<p>Take part in Quality Circles or similar.</p> <p>Discuss your experience of Quality Assurance processes.</p> <p>Take part in putting things right when QA fails.</p> <p>Undertake analysis and prepare documentation on the commissioning/testing and setting to work of projects, installations, repairs and/or project elements.</p> <p>Work to a time schedule and meet deadlines.</p>
C2	Accept responsibility for work of self or others.	Your evidence could include: minutes of meetings; site notes and instructions; Variation Orders; programmes of work; specifications, drawing and reports; or appraisals. Activity not associated with your job can contribute evidence.	<p>Have some experience of supervising others to co-ordinate activities to meet objectives.</p> <p>Undertake programming tasks and development of spreadsheets.</p> <p>Prepare, understand and monitor resource or fee budgets for yourself and your team where appropriate.</p> <p>Help to prepare job/person specifications or adverts.</p> <p>Take part in selecting team members, training and developing team spirit.</p> <p>Participate in an appraisal process.</p> <p>Advise others on building services engineering careers.</p>
C3	Accept, allocate and supervise technical and other tasks.		<p>Attend meetings.</p> <p>Communicate with colleagues.</p> <p>Have experience of variations, budgets and instructions.</p> <p>Contribute to preparations /handling of handover/closing / contract documentation.</p> <p>Contribute to service delivery documentation.</p> <p>Be familiar with standard documentation e.g. factory acceptance tests, witness testing and appreciate the roles of the regulatory authorities.</p>

D. Use effective communication and interpersonal skills.

You will need to show you can: contribute to discussions; make a presentation; read and synthesise information; or write different types of documents. This includes the ability to:

No	Objective	Range	Evidence Examples
D1	Use oral, written and electronic methods for the communication in English ¹ of technical and other information.	Your evidence could include; letters; reports; drawings; emails; minutes, including progress meetings; appraisals; work instructions; and other task planning and organising documents. Your application itself will be relevant.	Select and use appropriate communications styles for the range of professional situations. For example: listen, read and write for different uses such as memos, emails, letters, reports, RFI's and technical submittals, and proposals/quotations. Use interpersonal skills effectively, for example: team work, assertiveness, negotiation, flexibility and dealing with conflict. Use different kinds of communication effectively such as sell, explain and reprimand.
D2	Work effectively with colleagues, clients, suppliers or the public, and be aware of the needs and concerns of others, especially where related to diversity and equality.	Show examples of how this has occurred, and your role at the time. Describe your role in part of a team. Describe a situation where you put your awareness into practice.	Play a key role in a project or task involving other professionals and disciplines. Contribute to meetings and conduct of negotiations meeting deadlines. Show an understanding of the needs of others and the objectives of other disciplines. Develop an implementation or operational programme, identifying significant dates. Estimate any necessary resource required. Answer client or stakeholder queries. Respond to changes/requests, advise on the costs and benefits of different options, and propose alternative solutions. Observe good practice in your area of work including working towards zero carbon emissions and the using sustainable materials.

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.

E. Make a personal commitment to an appropriate code of professional conduct, recognising obligations to society, the profession and the environment.

Your commitment will be to become part of the profession and uphold the standards to which all members subscribe. You need to show that you have read and understood your Institution's Code of Conduct.

No	Objective	Range	Evidence Examples
E1	Comply with the Codes of Conduct of your Licensed Institution.	The professional review involves demonstration of, or discussion of, your position on typical ethical challenges.	Understand and abide by the CIBSE Code of Conduct. Exercise all reasonable professional skill and care. Give due regard to the Engineering Council (EngC) Guidelines. Guide and regulate your work with a working knowledge of current and impending legislation, standards and Codes of Practice.
E2	Manage and apply safe systems of work.	Provide evidence of applying current safety requirements, such as risk assessment and other examples of good practice you adopt in your work. You will need to show that you have received a formal safety instruction relating to your workplace (such as a CSCS safety test in the UK), or an update on statutory regulations. In the UK an example would be COSHH requirements.	Understand health and safety policies and practices affecting your work and exercise responsibilities for the safety and welfare of others. Understand relevant health, safety and welfare issues arising in design, construction, maintenance, use and deconstruction of built environment solutions. Co-operate and provide relevant information required in systems to plan and manage health, safety and welfare. Help to provide information for the Health and Safety File and to comply with the Construction (Design & Management) Regulations (CDM). Have a detailed understanding of safe systems of work, method statements and permit-to-work systems.

No	Objective	Range	Evidence Examples
E3	<p>Undertake engineering work in a way that contributes to sustainable development.</p> <p>This could include the ability to:</p> <ul style="list-style-type: none"> operate and act responsibly, taking account of the need to progress environmental, social and economic outcomes simultaneously. 	<p>Show examples of methodical assessment of risk in specific projects; actions taken to minimise risk to society or the environment.</p>	<p>Have a general understanding of the principles of sustainable development and how these are relevant to your work.</p> <p>Understand the environmental and social contexts of your work, as well as the economic context.</p> <p>Understand the sustainability issues arising in the design, construction, maintenance, use and deconstruction of built environment solutions.</p> <p>Actively promote solutions in the built environment which pursue the principles of sustainable development.</p> <p>Actively engage in the process of reducing carbon emissions, energy demands and resource consumption.</p>
E4	<p>Carry out and record Continuing Professional Development (CPD) necessary to maintain and enhance competence in own area of practice including:</p> <ul style="list-style-type: none"> 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. 	<p>This means demonstrating that you have actively sought to keep yourself up to date, perhaps by studying new standards or techniques, or made use of magazines, lectures organised by professional engineering institutions and other opportunities to network in order to keep abreast of change.</p>	<p>Recognise and pursue opportunities to review your knowledge, professional competence and your professional development.</p> <p>Be involved with CIBSE activities, technical and regional groups.</p> <p>Read professional journals and attend development seminars.</p> <p>Plan immediate, medium and long term CPD.</p> <p>Help others plan their CPD.</p> <p>Advise others on building services engineering careers.</p> <p>Access information sources for learning opportunities.</p> <p>Exercise skills transfer between professional and personal life</p>
E5	<p>Exercise responsibilities in an ethical manner.</p>	<p>Give an example of where you have applied ethical principles as described in the Statement of Ethical Principles as published by the Engineering Council and the Royal Academy of Engineering.</p> <p>Give an example of where you have applied/up held ethical principles as defined by your organisation or company, which may be in its company or brand values. Recognise and operate within the limits of your own knowledge and competence.</p>	<p>Understand and operate within the Engineering Council's Statement of Ethical Principles; also understand how this is relevant to the stature of the engineering professions.</p> <p>Have a general understanding of how ethical dilemmas can arise in own work and own duties to employers and society.</p> <p>Understand and operate within your Employer's Ethical Standards Policy.</p> <p>Present only justifiable information and technical opinion, be receptive to concerns, other aspirations and contrary opinion or information.</p> <p>Evidence of training, advice and information given by your employer.</p>