



INSTITUTE OF
HIGHWAY
ENGINEERS

Guidance Notes

ICTTech Professional Registration

The first step to completing your Professional Review
with the Institute of Highway Engineers

Guidance notes for:

Information Communication Technology Technician

(Recognised Qualification Route and Individual
Assessment Route)

Professional Registration

About this booklet

This set of guidance notes is your first step in gaining Information Communication Technology Technician (ICTTech) professional registration through the Institute of Highway Engineers. This booklet is essential for both Recognised Qualification Route and Individual Assessment Route ICTTech professional review applicants. It provides you with information and guidance to ensure the relevant paperwork is completed to the required standard as quickly and easily as possible. Please read this booklet in conjunction with the ICTTech application form as the two are designed to go hand in hand.

Before you begin

In order to obtain ICTTech registration you will need to be an existing IHE member, or a member of one of our Professional Affiliate Partners (currently the Association of Cost Engineers (ACostE) and the Institute of Traffic Accident Investigators (ITAI). Please refer to our website at www.theihe.org/membership if you need to apply for IHE membership.

To gain Engineering Council registration, engineers and technicians prove their competence and commitment in a professional review of their portfolio submission to the IHE. Anyone who meets the competence and responsibility standards can become an ICTTech – there's a route to suit all competent technicians.

Many will have a BTEC Level 3 (or equivalent) or SCF Level 6 equivalent qualification. Others will have gained the necessary skills, knowledge and experience through a non-academic route because of their practical experience in the highways industry.

There are many benefits of ICTTech registration, these include:

- Tangible evidence to your employer and potential employers of your proven competence as a professional technician.
- Recognition by the worldwide engineering community.
- Ongoing career progression, as you establish your professional credentials within the industry.
- The use of the ICTTech MIHE post-nominals after your name.
- Gives you an advantage over those who have no professional registration.
- An important stepping stone in the process to becoming IEng or CIP.

As a professional member of the Institute you'll have the same access to information and networking opportunities as Incorporated and Chartered Engineers.

This booklet provides guidance and information of the six requirements of ICTTech standard contained within the Information Communication Technology Technician (ICTTech) Standard laid down by the Engineering Council. These are:

- A. ICT knowledge and understanding to apply technical, practical and systems skills.
- B. Evidence of contribution to the design, development, configuration, testing, commissioning, installation, deployment, operation, migration or maintenance of ICT solutions, products, processes, systems, services or applications.
- C. Technical and personal responsibility.
- D. Effective communication and interpersonal skills.
- E. The ability to operate in accordance with safe systems of work and to demonstrate appropriate understanding of the principles of sustainability.
- F. Commitment to professional engineering values.

Completing the application form

To keep your application as clear as possible, we would request the following:

- If completing the application form by hand, please write in BLOCK CAPITALS and in black ink.
- Please complete only the relevant fields - we have included guidance as to which sections should be left blank if they are not relevant.
- You should aim to complete the application form with as much detail as possible. This will reduce the instances where we need to ask you for more information at a later date.
- Remember to include any additional documentation with your application where you see this symbol. Please tick the relevant box on the check list at the back of the application form if you are including additional evidence.



Please post your completed application form, along with your submission to:

Membership, Institute of Highway Engineers, Floor 4, Euston House, 24 Eversholt Street, London, NW1 1DB

Important: ITAI and ACostE members should send your application as described above, to the following address.

ACostE members should send your application directly to The Association of Cost Engineers:
ACostE Administration Office, Lea House, 5 Middlewich Road, Sandbach, Cheshire CW11 1XL

ITAI members should send your application directly to the Institute of Accident Traffic Investigators at:
ITAI, PO Box 16057, Solihull, West Midlands, B93 3GL

And finally

We hope you find the pathway to ICTTech application a simple process. The Institute of Highway Engineers is committed to helping you achieve the career benefits that professional registration can bring. Please contact us on: 020 3874 3066 or email us at professionalreviews@theihe.org if we can provide any assistance or guidance at any stage of your ICTTech application.

Section A

In this section we give some general guidance and background to assist you in submitting your ICTTech application with the IHE.

1. Entry routes and requirements

Before you start compiling your ICTTech submission, you will need to establish which route of application you're going to take. Two routes are available to ICTTech applicants, 'Recognised Qualifications Route' and 'Individual Assessment Route'. Choosing which one is applicable for you will depend on the qualifications you have achieved so far in your career. Both routes will require you to demonstrate your competency in applying proven techniques to solve problems and supervise works or people.

RECOGNISED QUALIFICATIONS ROUTE

If you have a Qualifications and Credit Framework Level 3 qualification (such as a NVQ3) or a HNC or HND in engineering or electronics/ computer science, and are working at the right level, you should use this route to apply for your ICTTech with the IHE. This pathway recognises your previous qualifications and the competency you have demonstrated in achieving these.

These qualifications will need to be approved or accredited by a licenced Engineering Council Institute, such as the Institution of Engineering and Technology (IET) or BCS, The Chartered Institute for IT.

More information on approved and accredited courses can be found here: www.engc.org.uk/education-skills/course-search

Applicants don't usually get called to interview, however, the IHE reserves the right to interview applicants to maintain the integrity of the Professional Review process.

INDIVIDUAL ASSESSMENT ROUTE

If you have other qualifications which do not fulfil the Recognised Qualifications Route criteria, or none at all, but can demonstrate competence and commitment to the appropriate depth and level through your work experience, then you can be individually assessed. You will need to provide similar documentation as for the Recognised Qualifications Route but you will need to explain more about your work and demonstrate your engineering knowledge.

Typically, applicants for this route have:

- Work experience at supervisory level but few or no qualifications
- Level 2 Entry Level qualification in an appropriate engineering discipline
- A NC or ND

Applicants don't usually get called to interview, however, the IHE reserves the right to interview applicants to maintain the integrity of the Professional Review process.

You will need to indicate in the left-hand column next to each assessment question where you have met the Engineering Council Learning Outcomes for Engineering Technicians.

2. Getting started

Help and support – Mentors

Getting the right help and support is crucial to ensuring you are successful in achieving ICTTech registration.

You are responsible for your own development and pathway to producing your ICTTech submission, but support from a colleague or mentor enables you to try out ideas and keep a focus on objectives. Good mentors will try to ensure that the engineers they work with gain confidence and independence as a result of their one-to-one relationship, and are empowered to take full and effective responsibility for themselves.

The Institute of Highway Engineers has produced a short booklet explaining the roles and responsibilities of both mentors and applicants. Please refer to our website at <https://members.theihe.org/page/formsandguidance> (log in required) for more information.

Creating your folder

All submissions must be presented in a single ring binder or lever arch folder. You should use file dividers to enable us to easily identify the relevant parts of your evidence folder and cross reference these with the section headings in the ICTTech application form.

The coversheet provided in section 1 of the application form must be affixed to the front of your folder.

Please note: Submissions presented in any other style of folder or binding, or without the coversheet affixed will be returned to you.

Section B

In this section we will guide you through completing the IHE ICTTech application form. The application form pulls together your personal details, aims to assess some of your skills and knowledge, as well as providing a checklist for your additional documents.

Guidance on all sections of the application form is detailed below.

1. The coversheet

Please complete the coversheet in section 1 at the front of the application form. This *must* be affixed to the front of your folder.

All submissions must be presented in a single ring binder or lever arch folder. You should use file dividers to enable us to easily identify the relevant parts of your evidence folder. These should cross reference with the relevant sections of this form.

Please note: *Submissions presented in any other style of folder or binding, or without the coversheet attached will be returned to you.*

2. Your details

Please complete all fields in this section.

3. Current employment details

Please complete all fields in this section.

4. Area of specialism

Please tick one of the listed categories of highway specialism that best describes the specialist area of your ICTTech submission. This information is essential for us to identify reviewers in your field that can assess your submission.

5. Route of application

Use this section to indicate whether you hold the necessary qualifications to apply via the Recognised Qualifications Route or if you will be applying via the Individual Assessment Route.

6. Your CV

We require an up-to-date copy of your CV covering your employment, academic and training history. This CV should be no more than two pages in length.

7. Higher and further education

Please complete this section in chronological order as per the instructions on the application form.

8. Your qualifications

We require copies of your certificates for the further and higher education courses you have listed in section 7. These should be authenticated (signed and dated) by either your Line Manager, Proposer or Secunder who can confirm that these are true copies of your original certificates. Do not send us original certificates as these will not be returned to you.

9. Career history

Please complete this section in chronological order as per the instructions on the application form.

10. Your current job

We require a copy of your current Job Description to be attached with your application. Self-employed applicants should produce a one page document describing your direct clients.

11. Mapping your organisation

You should supply the IHE with a clear organisation chart that identifies the structure of your organisation. This organigram should be of a hierarchical design and you should clearly highlight your own position on it. Self employed applicants do not need to complete this section.

12. Continuing Professional Development

Continuing Professional Development is the systematic maintaining, improving and broadening of your knowledge and skills and the development of personal qualities necessary for the execution of professional duties throughout your working life. Most employers require you to keep a personal CPD record and you can submit this as evidence in your folder. If your employer does not require this, a blank CPD record form can be downloaded from the members area of our website at <https://members.theihe.org/page/cpdhub> (log in required)

The IHE recommends you record your CPD using the Engineering Council Mycareerpath tool. If you use this, please export your CPD record and print it out. It can then be included in your evidence folder.

Please ensure you submit evidence of Continuing Professional Development and demonstrate how you intend to meet your obligations to CPD in the future by submitting a forward plan.

More information on CPD can be found in the members area of our website at <https://members.theihe.org/page/cpdhub> (log in required).

This should be essential reading before making your professional review submission.

13. Assessment questions

Competence is the ability to carry out a task to the required standards. To achieve this, you will need to demonstrate that you have the level of knowledge and skills required to achieve ICTTech registration. Competence is developed by a combination of formal and informal learning, training and experience.

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

ICT Technicians shall demonstrate:

- ICT knowledge and understanding to apply technical and practical skills.
- Evidence of their contribution to the design, development, configuration, testing, commissioning, installation, deployment, operation, migration or maintenance of ICT solutions, products, processes, systems, services or applications.
- Accept and exercise personal responsibility.
- Use effective communication and interpersonal skills.
- Demonstrate commitment to an appropriate code of professional conduct, recognising obligations to society, the profession and the environment.

To assess this and ensure the individual being registered is a competent engineer, the Engineering Council expect professional registrants to be competent in five broad areas:

- A.** Knowledge and understanding
- B.** Design, development and solving ICT problems
- C.** Responsibility, management and leadership
- D.** Communication and interpersonal skills
- E.** Personal and professional commitment

The three assessment questions are designed to provide you with an opportunity to demonstrate the Engineering Council Statements of Competence as detailed in the grid we have provided in this booklet. Please read the statements and guidance carefully and bear this in mind as you answer each of the assessment questions. Where you feel you have met an area of the Engineering Council statement of competence in your answer, please indicate this in the right-hand margin provided.

Your answers to the three assessment questions in the ICTTech application form depend on the route you will be applying through.

RECOGNISED QUALIFICATIONS ROUTE (Approved Level 3 qualifications or above)

Your formal educational qualifications demonstrate the necessary knowledge that underpins each of the five competences. Therefore, you should aim to complete each question using approximately 500 words per question. Sufficient evidence should be submitted to demonstrate achievement of the competency statements. Not more than half a dozen small evidential documents per question are required.

You will also need to annotate your response to the assessment questions in the right-hand margin where you feel you have demonstrated one of the Engineering Council Statements of Competence and Commitment.

INDIVIDUAL ASSESSMENT ROUTE (without exemplifying qualifications)

Applicants without exemplifying qualifications applying via the Individual Assessment Route should complete the three questions and demonstrate the use and understanding of engineering principles. Each question should be completed using approximately 750-1000 words. No more than half a dozen small evidential documents per question are required.

You will need to annotate your response to the assessment questions in the right-hand margin where you feel you have demonstrated one of the Engineering Council Statements of Competence and Commitment.

You will also need to annotate your response to the assessment questions in the left-hand margin where you feel you have demonstrated one of the Engineering Council ICTTech Learning Outcomes. As an Individual Assessment Route candidate, you will need to demonstrate the educational Learning Outcomes in your submission that Recognised Qualification Route applicants have achieved by having an exemplifying qualification. These Learning Outcomes are five areas of engineering learning you will need to demonstrate through the three assessment questions and are as follows:

1. Science and mathematics

The study of engineering requires a substantial grounding in engineering principles, science and mathematics commensurate with the level of study.

ICT Technicians will need:

1.1 Apply knowledge of mathematics, statistics, natural science and engineering principles to well-defined ICT problems.

2. Engineering analysis

Engineering analysis involves the application of engineering concepts and tools to analyse, model and solve engineering or ICT problems.

ICT Technicians will need:

2.1 Analyse well-defined problems reaching substantiated conclusions.

2.2 Use appropriate computational and analytical tools and techniques to solve well-defined problems.

2.3 Select and use technical literature and other sources of information to address well-defined engineering or ICT problems specific to their field of activity.

3. Design and innovation

Design is the creation and development of an economically viable product, process or system to meet a defined need. It involves significant technical and intellectual challenges commensurate with the level of registration.

ICT Technicians will need:

3.1 Contribute to design solutions for well-defined engineering or ICT (technical) problems and assist with the design of systems, components or processes to meet business, customer or user needs as appropriate. This will involve consideration of applicable health and safety, diversity, inclusion, cultural, societal and environmental matters, codes of practice and industry standards.

3.2 Demonstrate awareness of relevant legal requirements governing engineering or ICT activities, including personnel, health and safety, contracts, intellectual property rights, product safety and liability issues.

4. The Engineer and Society

Engineering activity can have a significant societal impact and engineers must operate in a responsible and ethical manner, recognise the importance of diversity, and help ensure that the benefits of innovation and progress are shared.

ICT Technicians will need to:

- 4.1 Understand the requirement for engineering or ICT activities to promote sustainable development.
- 4.2 Understand the need for a high level of professional and ethical conduct in engineering or ICT and demonstrate a knowledge of professional codes of conduct.
- 4.3 Identify, evaluate and mitigate risks (the effects of uncertainty) specific to their field of activity.
- 4.4 Adopt a holistic and proportionate approach to the mitigation of security risks.
- 4.5 Recognise the importance of equality, diversity and inclusion in the workplace.

5. Engineering practice

The practical application of engineering concepts and tools, engineering and project management, teamwork and communication skills. Engineers also require a sound grasp of the commercial context of their work, specifically the ways an organisation creates, delivers and captures value in economic, social, cultural or other contexts.

ICT Technicians will need to:

- 5.1 Select and apply appropriate materials, equipment, engineering technologies, processes, codes of practice and industry standards to plan and undertake well-defined programmes of work.
- 5.2 Recognise the need for quality management systems and continuous improvement in the context of well-defined problems.
- 5.3 Demonstrate awareness of engineering management principles, commercial and economic context, and project management.
- 5.4 Function effectively as an individual and as a member of a team.
- 5.5 Communicate effectively with technical and non-technical audiences.
- 5.6 Plan and record self-learning and improve performance, as the foundation for lifelong learning/CPD.

Statement of Competence and Commitment

In your responses to the three assessment questions you will need to reference all the Statements of Competence and Commitment defined in the Engineering Council Information Communication Technology Technician (ICTTech) Standard.

The following grid sets out the Engineering Council's Statements of Competence and Commitment with IHE guidance alongside and suggests typical documents you could select to illustrate your experience.

If you are a member of our Professional Affiliate partners (the Institute of Accident Traffic Investigators, ITAI, or The Association of Cost Engineers, ACostE) you should contact these Institutes directly for specific guidance to assist you with your application. Your Institute will be best placed to supply you with specific guidance in your area of engineering expertise.

A. Knowledge and understanding. ICT Technicians shall use ICT knowledge and understanding to apply technical, practical and systems skills.		
Engineering Council Statement of Competence	IHE Guidance	Examples of evidence
A1. Apply ICT principles in an analytical and systematic approach, to solve and review problems and contribute to continuous improvement.	<p>ICT Technicians shall use ICT knowledge and understanding to apply technical, practical and systems skills.</p> <p>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.</p> <p>In your submission, show evidence of:</p>	<ul style="list-style-type: none"> • Knowledge of specifications such as TOPAS TR2500A. • Preparing data sets. • Understanding of the principles of data collection and validation. • Knowledge and application of computer programs such as SCOOT, MOVA, Configurators and Emulators. • Coding. • Adherence and application of standards and research such as UG405. • Setting up of ICT systems which may include Wireless MESH, ADSL, SDSL and other linking and data collection systems.
A2. Review, select and use appropriate techniques, procedures and methods to undertake activities.	<ul style="list-style-type: none"> • 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. • 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. • Applying knowledge of modelling packages and an ability to use them to solve problems. 	

B. Design, development and solving ICT problems. ICT Technicians shall contribute to the design, development, configuration, testing, commissioning, installation, deployment, operation, migration or maintenance of ICT solutions, products, processes, systems, services or applications.

Engineering Council Statement of Competence	IHE Guidance	Examples of evidence
<p>B1. Identify and/or respond to problems with ICT solutions, services or infrastructure and apply suitable methods to seek the causes and to achieve the development of satisfactory solutions.</p> <p>B2. Identify, 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.</p> <p>OR</p> <p>Configure or maintain ICT systems to provide satisfactory performance and quality of service.</p> <p>OR</p> <p>Secure and protect ICT systems from intrusion, damage, attack or data loss.</p>	<p>ICT Technicians shall contribute to the design, development, configuration, testing, commissioning, installation, deployment, operation, migration or maintenance of ICT solutions, products, processes, systems, services or applications.</p> <p>This competence is about the ability to apply ICT knowledge effectively and efficiently to the individual tasks which need to be undertaken in the applicant's role.</p> <p>In your submission, show evidence of:</p> <ul style="list-style-type: none"> • 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. • Balancing 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. • Ability to tailor and run simulation and other models. • Ability to solve software and/or related technical problems under general guidance from more senior staff. • Knowledge of LAN/WAN: installing equipment and software, upgrading, configuration, testing. • System administration tasks in line with manufacturers requirements. 	<ul style="list-style-type: none"> • Traffic Signal Controller configurations. • MOVA data sets. • SCOOT validation data. • Linking architecture designs. • Testing results and reports. • Fault management records. • Technical reports and communications. • Contributions to policies and/or meetings which address security of information.

C. Responsibility, management and leadership. ICT Technicians shall accept and exercise personal responsibility.

Engineering Council Statement of Competence	IHE Guidance	Examples of evidence
C1. Work reliably and effectively on ICT tasks without close supervision and by adhering to the job instructions or best practice.	<p>ICT Technicians shall accept and exercise personal responsibility.</p> <p>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.</p>	<ul style="list-style-type: none"> • Minutes of meetings. • Compliance with quality management systems. • Programmes of work / programming tasks. • Work instructions. • Understanding of, and working to, time and budget constraints. • Specifications, reports and technical communications. • Appraisals undertaken by yourself or your employer.
C2. Accept responsibility for the work of themselves or others.	<p>In your submission, show evidence of:</p> <ul style="list-style-type: none"> • 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. • Fully understanding drawings, permits to work, instructions or other similar documents after appropriate checking, and identifying issues. 	
C3. Accept, allocate or supervise technical and other tasks	<ul style="list-style-type: none"> • Inspecting work carried out by others. • Checking the status of equipment, the work environment and facilities and taking appropriate actions before commencing work. • 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. 	
C4. Be aware of and/or involved in continuous quality improvement.	<ul style="list-style-type: none"> • Learning from your own experience and/or providing constructive feedback when supervising or working with others. • Demonstrate how you have contributed to relevant quality audits and where you have delivered against a quality improvement action. • Examples of where you have reported a problem which has subsequently improved a process. 	

D. Communication and interpersonal skills. ICT Technicians shall use effective communication and interpersonal skills.

Engineering Council Statement of Competence	IHE Guidance	Examples of evidence
D1. Communicate technical and other information effectively in English.	<p>ICT Technicians shall use effective communication and interpersonal skills.</p> <p>This is the ability to work with others constructively, to explain ideas and proposals clearly and to discuss issues objectively and constructively.</p>	<ul style="list-style-type: none"> • Use of correct engineering terminology. • Understanding of delegated responsibilities. • Awareness of contractual obligations. • Use of various media to convey ideas. • Letters, reports, minutes, emails • Drawings, spreadsheets. • Responses to public enquiries.
D2. Work effectively with colleagues, clients, suppliers or the public.	<p>In your submission, show evidence of:</p> <ul style="list-style-type: none"> • Contributing to meetings and discussions. • Preparing communications, documents and reports on technical matters. 	

<p>D3. Be aware of the needs and concerns of others, demonstrate personal and social skills and awareness of diversity and inclusion issues.</p>	<ul style="list-style-type: none"> • Exchanging information and providing advice to technical and non-technical colleagues. • 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 nontechnical audiences or recipients. • 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. • 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. 	<ul style="list-style-type: none"> • Work instructions. • Presentation material prepared by you. • Appraisals undertaken by your employer. • Conducting / contributing to public consultations. • Contributing to team / technical meetings.
<p>E. Personal and professional commitment. ICT Technicians shall demonstrate commitment to an appropriate code of professional conduct, recognising obligations to society, the profession and the environment.</p>		
<p>Engineering Council Statement of Competence</p>	<p>IHE Guidance</p>	<p>Examples of evidence</p>
<p>E1. Understand and comply with relevant codes of conduct and regulations/standards.</p>	<p>ICT Technicians shall demonstrate commitment to an appropriate code of professional conduct, recognising obligations to society, the profession and the environment.</p> <p>This competence is about ensuring that the applicant is acting in a professional manner in their work and in their dealings with others. An ICT Technician should set a standard and example to others with regard to professionalism.</p>	<ul style="list-style-type: none"> • Knowledge of IHE's Code of Conduct. • Awareness of legal obligations (duty of care). • Awareness of environmental management systems.
<p>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:</p> <ul style="list-style-type: none"> • Identify and take responsibility for own obligations for health, safety and welfare issues, • Apply systems that satisfy health, safety and welfare requirements. 	<p>In your submission, show evidence of:</p> <ul style="list-style-type: none"> • Demonstrating compliance with your Institute's Code of Professional Conduct. • Working within all relevant legislative and regulatory frameworks, including social and employment legislation. • 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 and company safety policies. • Recognising how sustainability principles can be applied in your day-to-day work. • Identifying actions that you can and have taken to improve sustainability. • Demonstrating awareness of environmental sustainability and the general recognition of sustainability. 	<ul style="list-style-type: none"> • Understanding and application of current safety requirements relevant to your own work (e.g. Health & Safety at Work Act 1974, COSHH, CDM, CSCS card, New Roads & Street Works Act 1991, Permits to Dig, Working in Confined Spaces, Regulation (EU) 2016/679 General Data Protection Regulation, Computer Misuse Act 1990). • Understanding and application of risk assessment methods and actions taken to minimise risk to data, health, safety, society or the environment.

<p>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.</p>	<ul style="list-style-type: none"> • Demonstrating awareness of environmental sustainability and the general recognition of sustainability. • 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 Engineering Council Statement of Ethical Principles. • Where you have applied or upheld ethical principles as defined by your organisation or company. • Undertaking reviews of your own development needs. • Planning how to meet personal and organizational objectives. • Carrying out and recording planned and unplanned CPD activities. 	<ul style="list-style-type: none"> • Environmental awareness. • Active engagement with IHE at a local level CPD record, including reflection on learning. • Protection of data through loss/ corruption, inappropriate access, breach of security, loss of system performance. • Evidence of system testing, training, project review. • Awareness of obligations for data disposal. • Awareness of hardware disposal and the disposal of hazardous components.
<p>E4. Carry out and record CPD necessary to maintain and enhance competence in ICT 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. 	<ul style="list-style-type: none"> • Maintaining evidence of competence development. • Evaluating CPD outcomes against any plans made. • Assisting others with their own CPD. 	

14. Document matrix

Please map how your evidence documents meet the Competency Standards in a document matrix. An example of this would be:

Doc No.	Doc Name	Question Number	A1	A2	B1	B2	B3
1	Drawing of a roundabout design	1	✓			✓	
2	CAD drawing of approach junction	2		✓			✓

15. Statement by applicant

You must sign and date the declaration in section 15. *We will not accept any application without this declaration signed.*

16. Completing your submission

Please follow the guidance in the application form regarding our required format for ICTTech submissions.

All submissions must be presented in a single ring binder or lever arch folder. Any other style of folder or binding, or without the coversheet affixed will be returned to you.

Please send your complete submission and this form to:

Membership, Institute of Highway Engineers, Floor 4, Euston House, 24 Eversholt Street, London, NW1 1DB.

Please note: We reserve the right to reject and return any submission that does not include all of the documents and attachments marked on the checklist at the back of this form, or with sections of this application form incomplete or left blank unless not required.

Important: ITAI and ACostE members should send your application as described above, to the following address.

ACostE members should send your application directly to The Association of Cost Engineers: ACostE Administration Office, Lea House, 5 Middlewich Road, Sandbach, Cheshire, CW11 1XL

ITAI members should send your application directly to the Institute of Accident Traffic Investigators at: ITAI, PO Box 16057, Solihull, West Midlands, B93 3GL

17. Electronic copy of your submission

Please follow the guidance in the application form and supply us with a digital copy of your ICTTech folder and any documents you have submitted on a writeable CD or USB memory stick.

18. Employer proposal statement

Section 18 details the employer proposal information we require from you. We cannot pass your submission to a reviewer without an employer proposal statement. Self-employed applicants should ask a recent Client to complete this section.

19. Proposer and seconder

Please ask your proposer and seconder to complete all fields in this section.

20. Payment form

The fee required as part of paying for your ICTTech application comprises of (2022 rates):

1. IHE ICTTech professional review fee: £85.00
2. Engineering Council EngTech registration entry fee (collected on their behalf by the IHE) £18.77

Please check our website for up-to-date fee information.

An additional upgrade to your membership fee might also be required. If you are currently a Student, Apprentice or Associate member, you will be required to pay the difference between your current annual membership fee and the annual fee for IHE Member grade of £137.00.

If you are a member of the Institute of Traffic Accident Investigators or The Association of Cost Engineers, an additional £65.00 administration fee is required to process your application.

Please note: ACostE and ITAI applicants should contact the appropriate Institute directly to arrange payment of your application fee. The IHE will receive your payment directly from ACostE or ITAI.

21. Checklist

This section provides you with an opportunity to ensure you have included all the applicable documents and paperwork we have asked for. It also helps us to ensure we have received all of your submission when we process your application.

Section C

In this section we have provided some useful additional documents that will assist you in answering the three assessment questions.

1. Code of Conduct

Version 2.2 (Updated October 2021)

This Code of Conduct sets out the commitment of members of the Institute of Highway Engineers to a code of ethics and conduct. The IHE Code is based on Engineering Council (UK) guidance.

IHE members make a professional commitment to act responsibly with regard to safety and the environment, to act ethically, to maintain and develop their competence and to support new and prospective entrants. All members agree to abide by the IHE Code of Conduct which requires:

“Every Corporate Member of the institute at all times to so order his or her conduct as to uphold the dignity and reputation of the profession and to maintain his or her technical and professional competence and to safeguard the public in matters of safety, health and otherwise pertaining to the work of the Institute”.

The Memorandum and Articles provide for disciplinary action if a member is found to have breached the Code. However, the expectation is that members abide by the code because they recognise the duty they owe society and themselves to uphold the standing of their chosen profession. Copies of IHE's disciplinary procedures and Equal Opportunities policy are available from the office or the website.

- You are obliged as an IHE member to maintain and record Continuing Professional Development. Your CPD should be guided by, and recorded in, a Personal Development Plan. More information on CPD and the IHE's guide to planning your development, can be found in the member's area of our website. IHE is required to monitor members' compliance with this obligation by the Engineering Council (UK). Every Professionally Registered member, except those who have declared they are no longer professionally active in the profession, is required to submit a record of their CPD when requested by the Institute as part of an annual sample. Any member who persistently fails to engage with this process will automatically lose their IHE membership.
- IHE is committed to equality of opportunity for everyone applying for membership and for the Professional Review and to removing any barriers to applicants and members achieving their full potential. In turn we expect members not to discriminate and to promote equal opportunities.

Your Professional Ethics

Council has adopted the following statement of rules elaborating on the Code of Conduct. The statement is binding on all members.

Members are expected to:

1. Hold paramount the safety, health and welfare of the public and the protection of the environment in the practice of their profession.
2. Maintain and improve their competence:
 - Demonstrate commitment to maintaining professional competence through self managed CPD
 - Take responsibility for and manage their CPD
 - Support the learning and development of others:
 - Be prepared to act as a mentor

- Encourage employers to support professional development
 - Share professional expertise and knowledge
 - Provide support for the learning of others
 - Contribute to the activities of their professional body
3. Undertake technological tasks for others if qualified by training or expertise and after full disclosure of any pertinent limitations.
 4. 4Accept responsibility for work carried out under their supervision, treat subordinates fairly and without bias and advance their learning and competence.
 5. Avoid real or perceived conflicts of interest where possible and disclose them to affected parties when they do exist.
 6. Avoid disclosing confidential information acquired in the course of work, without the consent of the parties concerned or unless disclosure is clearly in the public interest, for instance under the Public Interest Disclosure Act.
 7. Provide objective and truthful information when giving advice or criticism, making public statements or advertising/publicising services; advice should include clear statements of the impact and consequences of engineering decisions and projects.
 8. Reject bribery in all its forms.
 9. Support any other person to whom they have a duty of care who in good faith raises any concern about a danger, risk, malpractice or wrongdoing which affects others (commonly referred to as “whistleblowing”).
 10. Make systematic assessments of environmental, health and safety risks related to their work and their individual legal liability and inform clients whether or not professional indemnity insurance is held.
 11. Report any violations of this code by another member to IHE.
 12. Notify the IHE of any convictions of a criminal offence (other than minor Road Traffic Offences) and, any adjudicated bankruptcy e.g. if a Director’s Disqualification Order is made against them or if they enter into an Individual Voluntary Arrangement with creditors.
 13. Respond promptly to any request from the Institute for comments or information on or documents relating to any disciplinary matter being investigated by a panel appointed by IHE whether in relation to themselves or to another member.

Any member convicted by a court or other competent tribunal of a criminal offence (see 12 above) that, in the opinion of a Disciplinary Panel or Council, renders him unfit to be a member shall be guilty of improper conduct.

The Institute’s remit extends to competence, conduct and professionalism, but not to contractual disputes or similar.

Exemplars

Below are some sample responses to the three assessment questions in section 13 of the ICTTech application.

Question One

Give an example of a project or task where you solved a technical problem, explaining your role and how you selected the appropriate techniques, procedures and methods used. Tell us about any scientific, technical or ICT principles you used and how you reported or made recommendations on what you did for your employer or other people involved such as clients or suppliers. Include anything you did to prevent harm to people, equipment or data.

Your Answer	Engineering Council statement of competence Ref.
<p>I am employed by ICT TECH to carry out AutoCAD works as part of the company's overall business to supply multi discipline highway projects in the north of England. My general works include the production of drawings using the AutoCAD suite and other associated software. I also conform to the Company's CAD standards set in the Drawings Manual.</p> <p>I also assist in site surveys and support engineers with the development of design solutions. Although I work as part of a team I am responsible for ensuring all assigned tasks are completed to time and cost estimate.</p> <p>In a recent project which involved the realignment of a local highway network I was tasked to produce drawings and layouts to allow multi vehicle movements to be achieved which included HGV deliveries to the future site which included a major supermarket development. My task was to ensure that the swept path analysis following the design allowed access by these vehicles without interference with other road users and street furniture. The designs have been undertaken following the DMRB and I have to ensure that I have appropriate knowledge of this and also that team members understand the design elements.</p> <p>I used the software produced by Keysoft Solutions AutoTURN to overlay the preliminary design and to simulate a typical vehicle movement. From the initial analysis it was clear that a traffic island would be crossed. (Drawing 1.1 indicates) I discussed with the Design Engineer a number of options which could allow the design to be implemented including the use of demountable sign posts and traffic bollards. However, the ongoing requirement to always have to undertake this post completion lead to a revision of the layout by altering the radii of several sections of access road. I was able to prove that no conflicts would occur through re applying the AutoTURN software. (Drawing 1.2 indicates).</p> <p>Following agreement to the revision I proceed to apply the necessary road markings, traffic signs and signal locations to the layout using guidance notes for TSRGD 2016 and the TA 84/06, Additional design included determining the location of traffic signal detection equipment and I produced an additional drawing which indicated the position of proposed underground ducts, cables and pipes. I determined the most suitable location for the detectors.</p> <p>The final task undertaken during this project was to prepare signal phasing diagrams, I calculated the Intergreen timings to ensure maximum use of the signalised junction. In this situation I used the software KEYsignals and confirmed my calculations with the Senior Engineer</p>	<p>A1</p> <p>A1, A2</p> <p>A2</p> <p>B1, B2</p> <p>B3, B4</p>
Description of your supporting documents	
<p>EV1 AutoTURN design EV2 Email suggesting revision to design EV3 KEYsignals calculations</p>	

Question Two

Give an example of how you have identified, planned, and organised the resources needed to effectively complete a project, explaining how you took into consideration cost, quality, safety and any environmental impact. Remember to think about what equipment was used, how data was gathered and analysed and how you initiated the project to produce the desired outcome.

Your Answer	Engineering Council statement of competence Ref.
<p>As the CAD lead for the team of technicians within my section of ICTTech I am responsible for the allocation of task to other members of my team, training new members and ensuring that tasks are completed to time and cost estimate.</p> <p>The Company receives many requests for submissions both as tendered works or direct commissions and I am involved in determining the appropriate element of my team's resource required to complete the project.</p> <p>Recently there has been a significant surge in design workload leading to the intake of new staff members both as trainees or on agency contracts. This has increased the resources available by approximately 33%, however the management of the resource has become critical to the company fulfilling its contractual obligations.</p> <p>I have completed a full skills audit of my team including the new entrants to establish their strengths and weakness and to enable to most appropriate resource to be allocated to each task.</p> <p>I have also developed a more detailed resource chart with key dates, milestones using a version of Microsoft Project. Each Technician has different charge out rates and I need to ensure that the allocated costs are not exceed as well as the works being completed on time.</p> <p>To develop a more streamlined approach to the tasks I work closely with each of the design teams and where possible assist with the design process. I am required to have knowledge of the construction process to ensure designs can be built safely. Knowledge of site conditions is essential and the team and myself regularly visit locations to gather additional data not always available from the design brief. This time away from the CAD monitor is often useful but requires careful managing to ensure it is not abused. However, a recent example of site works improved the communication between the office and site teams and lead to a change in the information supplied to the benefit of both parties</p>	<p>C2, C3 C1, D1</p> <p>C2, C3, C4</p> <p>D2 B2</p> <p>C4</p> <p>D1</p>
Description of your supporting documents	

Question Three

Give an example of how you have complied with the Institute of Highway Engineer's Code of Conduct (as found in Section C of the accompanying guidance booklet) and how you keep in touch with developments in your technical area and how you have continued to develop your knowledge and skills?

Your Answer	Engineering Council statement of competence Ref.
<p>I ensure that I follow the Company's code of conduct in every aspect of my work. Confidentiality of information which can often be financial sensitive in planning application is required and I ensure that myself and my team of technicians carry out their tasks appropriately. In addition, in tendering for works it is important to ensure that confidentiality is maintained throughout the process.</p> <p>I ensure that any design produced is to the relevant code of practice or design guidance and that any design can be delivered without harm to the construction team and ongoing maintenance teams. The Company carries out Quality Audits of schemes and I represent my team in such activities.</p> <p>On a personal level I have the opportunity to undertake an annual appraisal as part of the Company's commitment to staff development where I can discuss my training, workload, management of the team and future requirements, With ICT there is an ever-ongoing requirement to maintain skills and knowledge and I regularly access technical publications, web session and trade events.</p> <p>My commitment to career development will be enhanced by the award of ICTTech which is a standard I hope the industry will recognise. I have recently joined the IHE and am committed to its Code of Conduct and will apply its requirements to my work.</p> <p>Whilst my current job role gives little opportunity for contact with the general public it is important to note that many of the completed designs can affect them.</p>	<p>E1</p> <p>E2, E3</p> <p>E4</p> <p>E5</p> <p>E5</p>
Description of your supporting documents	
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