



IPD Online: Changes to ICE Attributes from October 2021

ICE Attributes: a guide for trainees using IPD Online

This document presents the current and “old” ICE Attributes that have been updated on ICE’s IPD Online platform from 1 October 2021, with commentary on the differences between them.

Key changes

The individual attribute statements under each Attribute heading are no longer numbered, as they are expected to be demonstrated in a holistic way at professional review.

The current Sustainable Development Attribute requires trainees working towards IEng or CEng registration to become familiar with the United Nations’ Sustainable Development Goals (UNSDGs) and to align the sustainable development aspects of their experience in that context.

In addition, continuous improvement attributes look for evidence of change as well as managing process, while the engineering and sustainable development attributes look for evidence of solutions in the context of the whole project life cycle.

You can see the complete list of current attributes at www.ice.org.uk/attributes.

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Technician Attribute changes in IPD Online

To assist trainees preparing for a Technician Professional Review (TPR).

“OLD” – Technician-level standards in 2021	CURRENT – Technician-level Attributes from 1 October 2021 in IPD Online	Comments on changes
A. Use engineering knowledge and understanding to apply technical and practical skills.		-
A1. Review and select appropriate techniques, procedures and methods to undertake tasks.	Review and select appropriate techniques, procedures and methods to undertake tasks.	-
A2. Use appropriate scientific, technical or engineering principles.	Use appropriate scientific, technical or engineering principles.	-
B. Contribute to the design, development, manufacture, construction, commissioning, operation or maintenance of products, equipment, processes, systems or services.		-
B1. Identify problems and apply appropriate methods to identify causes and achieve satisfactory solutions.	Identify problems and apply appropriate methods to identify causes and achieve satisfactory solutions.	-
B2. Identify, organise and use resources effectively to complete tasks, with consideration for cost, quality, safety, security and environmental impact.	Identify, organise and use resources effectively to complete tasks, with consideration for cost, quality, safety, security and environmental impact.	-

“OLD” – Technician-level standards in 2021	CURRENT – Technician-level Attributes from 1 October 2021 in IPD Online	Comments on changes
C. Accept and exercise personal responsibility		-
C1. Work reliably and effectively without close supervision, to the appropriate codes of practice.	Identify tasks and organise resources to complete them effectively.	
C2. Accept responsibility for work of self or others.	Work reliably and accept responsibility for their work or the work of others.	The new attributes blend current attributes C1-C3 and parts of B2, including ‘quality’.
C3. Accept, allocate and supervise technical and other tasks.	Complete tasks with due consideration for quality.	
D. Use effective communication and interpersonal skills.		-
D1. Use oral, written and electronic methods for the communication in English of technical and other information.	Communicate effectively with others, at all levels, in English.	The wording has been simplified in line with the latest version of Engineering Council’s UK-SPEC.
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.	Work effectively with colleagues, clients, suppliers or the public; Demonstrate personal and social skills; Demonstrate awareness of diversity and inclusion.	D2 has been split out to assist with progression to the equivalent IEng and CEng attributes.

“OLD” – Technician-level standards in 2021	CURRENT – Technician-level Attributes from 1 October 2021 in IPD Online	Comments on changes
E. Make a personal commitment to an appropriate code of professional conduct, recognising obligations to society, the profession and the environment.		-
E1. Comply with the Code of Conduct of your institution.	Understand and comply with the ICE Code of Conduct.	Trainees should demonstrate understanding as well as compliance.
E2. Manage and apply safe systems of work.	Understand the safety implications of the role; Complete tasks with due consideration for safety; Comply with safe systems of work.	E2 has been split out to assist with progression to the equivalent IEng and CEng attributes.
E3. Undertake engineering work in a way that contributes to sustainable development.	Understand the principles of sustainable development and apply them in work.	Trainees should demonstrate understanding as well as application.
E4. Carry out and record CPD necessary to maintain and enhance competence in own area of practice.	Carry out and record the Continuing Professional Development (CPD) necessary to maintain and enhance competence in their own area of practice.	-
E5. Exercise responsibilities in an ethical manner.	Understand the ethical issues that may arise in their role and carry out their responsibilities in an ethical manner.	Trainees should demonstrate understanding as well as application.

Incorporated Engineer Attribute changes in IPD Online

To assist trainees preparing for an Incorporated Professional Review (IPR) or a Chartered Professional Review (CPR).

“OLD” – Incorporated-level Attributes in 2021	CURRENT – Incorporated-level Attributes from 1 October 2021 in IPD Online	Comments on changes
1. Knowledge and Understanding of Engineering		This attribute has been edited to improve clarity, but the overall requirements have not changed.
1A. Maintain and extend a sound theoretical approach to the application of technology in engineering practice.	Maintain and extend knowledge of engineering theory and practice, and how technology assists its application.	-
1B. Use a sound evidence-based approach to problem solving and be able to contribute to continuous improvement.	Solve engineering problems using a sound theoretical approach, based on evidence, and contribute to continuous improvement.	-
2. Technical and Practical Application of Engineering		-
2A. Identify, review and select techniques, procedures and methods to undertake engineering tasks.	Identify, review and select techniques, procedures and methods to undertake engineering tasks.	-

“OLD” – Incorporated-level Attributes in 2021	CURRENT – Incorporated-level Attributes from 1 October 2021 in IPD Online	Comments on changes
2B. Contribute to the design and development of engineering solutions.	Contribute to the design and development of engineering solutions;	-
2C. Implement or construct design solutions and contribute to their evaluation.	Implement engineering solutions, and evaluate their effectiveness in the context of the whole project life cycle.	Note that trainees should be able to evaluate the effectiveness of their solutions in the context of the whole project life cycle.
3. Management and Leadership		The new attribute has been edited, but the overall requirements have not changed.
3A. Plan for effective project implementation.	Plan the work and resources needed to enable effective implementation of engineering tasks and projects.	
3B. Manage the planning and organisation of tasks, people and resources.	Manage the planning and organisation of tasks and resources.	Note that the word ‘people’ has been removed as managing people is covered as part of the revised 3C attribute statements.

“OLD” – Incorporated-level Attributes in 2021	CURRENT – Incorporated-level Attributes from 1 October 2021 in IPD Online	Comments on changes
3C. Manage teams and develop staff to meet changing technical and managerial needs.	Manage teams or technical specialisms; Assist others to meet changing technical and managerial needs.	The attribute has been split out to look at managing people and helping them develop separately. In addition, it recognises that trainees may manage and develop people outside their formal line management chain or manage technical specialisms.
3D. Manage quality processes.	Manage quality processes and contribute to quality improvements.	The new attribute looks for trainees to provide examples of how they have contributed to improvements.
4. Independent Judgement and Responsibility		-
4A. Identify the limits of personal knowledge and skills.	Identify the limits of personal knowledge and skills.	-
4B. Exercise sound independent engineering judgement and take responsibility	Exercise sound independent engineering judgement and take responsibility	-
5. Commercial Ability		-
5A. Prepare and control budgets.	Manage, prepare and control costs/budgets of engineering tasks or projects.	Trainees may be responsible for costs and/or budgets and looks for evidence of managing as well as preparing and controlling them.

“OLD” – Incorporated-level Attributes in 2021	CURRENT – Incorporated-level Attributes from 1 October 2021 in IPD Online	Comments on changes
5B. Use sound knowledge of statutory and commercial frameworks within own area of responsibility and have an appreciation of other commercial arrangements.	Use sound knowledge of statutory and commercial frameworks within their own area of responsibility and have an appreciation of other commercial arrangements.	-
6. Health, Safety and Welfare		-
6A. A sound knowledge of legislation, hazards and safe systems of work.	Demonstrate a sound knowledge of legislation, hazards and safe systems of work	
6B. Manage risks.	Manage risks.	-
6C. Manage health, safety and welfare within own area of responsibility.	Manage health, safety and welfare within their own area of responsibility; Contribute to improvements in health, safety and welfare.	Trainees should demonstrate how they have contributed to improvements.
7. Sustainable Development		-
7A. A sound knowledge of sustainable development best practice.	Understand the principles of sustainable development and apply them in work.	Trainees should demonstrate understanding as well as application.
7B. Manage engineering activities that contributes to sustainable development.	Manage engineering activities that contribute to sustainable development and the United Nations’ Sustainable Development Goals (UNSDGs).	Trainees should be familiar with the UNSDGs and be able to align the sustainable development benefits of their experience to those goals.

“OLD” – Incorporated-level Attributes in 2021	CURRENT – Incorporated-level Attributes from 1 October 2021 in IPD Online	Comments on changes
8. Interpersonal Skills and Communication		-
8A. Communicate well with others at all levels including effective use of English ¹ , orally and in writing	Communicate well with others at all levels including effective use of English ² , orally and in writing.	-
8B. Discuss ideas and plans competently and with confidence.	Discuss ideas and plans competently and with confidence.	-
8C. Effective personal and social skills.	Demonstrate effective personal and social skills.	-
8D. Manage diversity issues	Demonstrate awareness of diversity and inclusion.	-
9. Professional Commitment		-
9A. Understanding and compliance with the ICE Code of Conduct.	Understand and comply with the ICE Code of Conduct.	Trainees should demonstrate understanding as well as compliance.
9B. Plan, carry out and record Continuing Professional Development and encourage others	Plan, carry out and record Continuing Professional Development (CPD) necessary to maintain and enhance competence in their own area of practice.	-

¹ Please note: All assessments and reviews for Engineering Council registration will be conducted in English, subject 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.

² Please note: All assessments and reviews for Engineering Council registration will be conducted in English, subject to the provisions of the Welsh Language Act 1993.

“OLD” – Incorporated-level Attributes in 2021	CURRENT – Incorporated-level Attributes from 1 October 2021 in IPD Online	Comments on changes
9C. Engage with ICE activities	Engage with ICE activities.	-
9D. Demonstration of appropriate professional standards, recognising obligations to society, the profession and the environment.	Demonstration of appropriate professional standards, recognising obligations to society, the profession and the environment.	-
9E. Exercise responsibilities in an ethical manner.	Understand the ethical issues that may arise in their role and carry out their responsibilities in an ethical manner.	Trainees need to demonstrate understanding as well as application.



Chartered Engineer Attribute changes in IPD Online

To assist trainees preparing for a Chartered Professional Review (CPR) or a Chartered Professional Review Progressive (CPRP) review. Note that CPR candidates will also be expected to demonstrate the IEng attributes (see table above), while Chartered Professional Review Progressive (CPRP) candidates, who will already have passed an Incorporated Engineer level review, will be asked to demonstrate only the CEng attributes below.

“OLD” – Chartered-level Attributes in 2021	CURRENT – Chartered-level Attributes from 1 October 2021 in IPD Online	Comments on changes
1. Knowledge and Understanding of Engineering		The attribute has been edited to improve clarity, but the overall requirements have not changed.
1C. Maintain and extend a sound theoretical approach in enabling the introduction and exploitation of new and advancing technology.	Maintain and extend a sound theoretical approach in enabling the introduction and exploitation of new and advancing technology.	-
1D. Engage in the creative and innovative development of engineering technology and continuous improvement systems.	Engage in the creation and/or introduction of new, advancing or improved techniques and technology.	-

“OLD” – Chartered-level Attributes in 2021	CURRENT – Chartered-level Attributes from 1 October 2021 in IPD Online	Comments on changes
2. Technical and Practical Application of Engineering		-
2D. Conduct appropriate research, relative to design or construction and appreciate its relevance within own area of responsibility.	Take an active role in the identification and definition of requirements, challenges, risks, and opportunities and undertake appropriate investigation and action.	Trainees should note the holistic nature of this attribute and use it to show that they can manage risk in its wider context i.e. the proposed solution as a whole and not just the technical engineering aspects.
2E. Undertake the design and development of engineering solutions and evaluate their effectiveness.	Undertake the design and development of engineering solutions and evaluate their effectiveness in the context of the whole project life cycle.	Note that trainees should be able to evaluate the effectiveness of their solutions in the context of the whole project life cycle.
2F. Implement or construct design solutions and evaluate their effectiveness	Undertake the implementation of engineering solutions and evaluate their effectiveness in the context of the whole project life cycle.	
3. Management and Leadership		The attribute wording has been edited to make it more relevant to a civil engineering context.
3E. Plan, direct and control tasks, people and resources.	Manage (organise, direct and control), programme or schedule, tasks and resources	Managing people is now covered by the revisions to 3F.

“OLD” – Chartered-level Attributes in 2021	CURRENT – Chartered-level Attributes from 1 October 2021 in IPD Online	Comments on changes
3F. Lead teams and develop staff to meet changing technical and managerial needs.	Lead or influence teams / technical specialisms, understanding the limits of their skills and knowledge. Develop others to meet changing technical and managerial needs.	3F has been split to look at managing people and helping them develop separately. In addition, it recognises that trainees may manage and develop people outside their formal line management chain, or manage technical specialisms. It also integrates 4C (Identify the limits of a team’s skill and knowledge).
3G. Demonstrate continuous improvement through quality management.	Demonstrate continuous quality improvement and promote best practice.	The new attribute asks for examples of promoting best practice.
4. Independent Judgement and Responsibility		-
4C. Identify the limits of a team’s skill and knowledge.	Identify the limits of a team’s skill and knowledge.	-
4D. Exercise sound holistic independent judgement and take responsibility.	Exercise sound holistic independent judgement and take responsibility.	-

“OLD” – Chartered-level Attributes in 2021	CURRENT – Chartered-level Attributes from 1 October 2021 in IPD Online	Comments on changes
5. Commercial Ability		
-	Manage, prepare and control costs/budgets of a significant engineering task or project.	- A new attribute to clarify the different expectations at IEng-level and CEng-level i.e. the complexity and scale of the task or project (the key word here is “significant”).
5C. Demonstrate sound judgement on statutory, contractual and commercial issues in relation to your area of responsibility.	Demonstrate sound judgement on statutory, contractual and commercial issues in relation to own area of responsibility.	-
6. Health, Safety and Welfare		
6D. Leading continuous improvement in health, safety & welfare.	Demonstrate leadership by promoting good practice and improvements in health, safety and welfare.	- The wording has been changed to explain the expectations more clearly.
7. Sustainable Development		
7C. Leading continuous improvement in sustainable development.	Take a professional and responsible role in improvements that support sustainable development and reduce resource demand, set in the context of a whole project life cycle.	- The wording has been changed to explain the expectations more clearly. Note that trainees should be able to place improvements in the context of the whole project life cycle and be able to identify opportunities to reduce resource demand.

“OLD” – Chartered-level Attributes in 2021	CURRENT – Chartered-level Attributes from 1 October 2021 in IPD Online	Comments on changes
8. Interpersonal Skills and Communication		-
8E. Communicate new concepts and ideas to technical and non-technical colleagues including effective use of English orally and in writing	Communicate new concepts and ideas to technical and non-technical stakeholders.	The use of the term “stakeholders” gives a broader view of possible audiences than the previous term “colleagues”.
-	Proactively manage diversity and inclusion.	A new attribute clarifying expectations of CEng candidates at professional review. For comparison, IEng candidates are asked to “Demonstrate awareness of diversity and inclusion”.
9. Professional Commitment		-
-	-	-