

Summary report of the public consultation carried out in August to October 2018

The Standards Review

1. The Engineering Council is carrying out its five-yearly review of the Standard against which engineers and technicians are registered. The review is a key task in the Engineering Council's 2018-20 Strategic Plan.
2. The purpose of the review is to ensure that the Standard continues to be relevant, flexible and future-ready for the benefit of all stakeholders. To remain relevant, it must accommodate changes in the knowledge and understanding, skills and behaviours required of engineering professionals and in the ways in which these are developed throughout their careers; it must also maintain appropriate standards. It is therefore important that the review considers how these could be affected by changes in engineering and society.
3. The review is being conducted by way of a programme of linked and interdependent projects covering:
 - The categories of registration
 - The UK-Standard for Professional Engineering Competence (UK-SPEC)
 - Accreditation of higher education programmes
 - Approval of qualifications and apprenticeships
 - Higher apprenticeships
 - The Registration Code of Practice

Consultation

4. Each project is being managed by a project group that is actively seeking views from as many and as broad a range of stakeholders and other sources as possible.
5. During 2018 a consultation was published on the Engineering Council's website and circulated by email and through social media. Employers, education providers, government, professional engineering institutions, engineering professionals and members of the public were invited to respond.
6. The consultation covered issues of context, broad principle and direction as well as specific content of the Standards documents. Respondents were also invited to comment for clarification or to introduce new thinking.
7. The consultation generated over 100 responses through the online response form plus additional written responses by email. Overall, there was strong endorsement of the current edition of the Standard. Many respondents provided constructively critical inputs, with some areas of general consensus and others where opinion was split.

8. Appendix 1, below, contains an overview of the key themes emerging from the feedback that will inform the next phase of the review.

What happens next

9. The project groups will now move on to drafting revisions. The Engineering Council will publish and circulate widely the draft revisions for comment before final proposals are put to its Board of Trustees for approval.
10. The Engineering Council will also undertake a structured consultation with stakeholder groups and document users about whether the current four documents continue to be the most user-friendly format for publication of the Standard.
11. The Engineering Council expects to publish the fourth edition of the Standard early in 2020.

Summary of responses to the consultation

Key principles

1. The first section of the consultation sought to check that we have identified all the areas we need to cover in the review. Feedback generally confirmed the 'direction of travel' with valuable inputs on the changing industrial and societal context in which engineering professionals work. Many of the questions in this section were very broad and we appreciate the time and effort evidenced in the thoughtful responses we received.
2. Summary of responses:
 - a. A perceived need for more technicians and higher technicians, related to support for recognition of senior and higher technicians.
 - b. Automation is replacing 'routine' work, leading to the need for technicians to have higher skills.
 - c. The importance of engineering professionals having a broad view and awareness of the impact of engineering activities and decisions on society and the environment – 'why we engineer'.
 - d. The importance of systems-thinking and understanding the whole life-cycle were identified, along with the need for a greater emphasis on issues in and associated with the 'E' group of competences (relating to professional behaviour, ethics, sustainability, safety and commitment to maintaining competence through continuing professional development).
 - e. The impact of AI and digital developments on different types of engineering roles and decision-making.
 - f. The reduction in demarcation between and beyond traditional engineering disciplines, with an increase in multi- and inter-disciplinarity.
 - g. An emphasis on creativity, innovation and management of change.
 - h. The importance of international recognition, cultural awareness and language skills.
 - i. Changing work patterns: in particular agile, lean, team-based, non-hierarchical, cross-cultural working; entrepreneurship; 24/7 working; working across time zones; remote and home-working.
 - j. The increasing need for lifelong learning underpinned by a strong foundation of fundamental principles.
 - k. A move to shorter degrees and a need for more modular through-career learning; general support for apprenticeships and continued recognition of work-based and experiential learning; recognition of intermediate qualifications; one suggestion was to do away with the 'standard' route altogether, with all applicants assessed as individuals.
 - l. Support for achieving parity of esteem between academic and vocational education, with acknowledgement of the challenges of this.
 - m. Promoting IEng as 'equal but different', perhaps with a change of title; some concern over the future sustainability of IEng.

The UK Standard for Professional Engineering Competence (UK-SPEC)

3. The questions in this section sought to confirm which specific areas in UK-SPEC the review needs to consider. It included questions on a number of principles on which UK-SPEC is currently based.
4. Summary of responses:
 - a. Professional registration was felt by a majority to be valuable/useful, particularly in terms of providing assurance. Professional engineering institutions were the most positive respondents, although it is possible that those who see less value in UK-SPEC were less likely to have responded.
 - b. International alignment is important. Responses suggested that UK-SPEC must serve UK first and foremost and not be 'watered down'. Majority want a UK standard that is globally recognised.
 - c. Views about the principles on which UK-SPEC should be based were mixed. Professional engineering institutions appeared to be strongly supportive of UK-SPEC as it was, while others were more mixed in their response. Key issues identified included professionalism; competence; integrity and relevance.
 - d. A variety of new descriptors of aptitude, attitude and behavioural characteristics of a professional engineer were identified, including good moral character; enquiring; goal-orientated; critical-thinking; creative; globally responsible; curious; inclusive; respectful; culturally-aware and unbiased.
 - e. The future needs of professional engineers that respondents identified included whole-life safety; awareness of disruption; more design and innovation skills; greater commitment to CPD; systems thinking/engineering; data skills; management; greater focus on environmental/sustainability; broader technological focus; awareness of new ethical challenges.
 - f. There was a general agreement that UK-SPEC should include a broad definition of 'engineer', although any such definition should not refer to competence (competence is already defined and used as the basis for the registration categories).
 - g. There was general agreement (more so among professional engineering institutions) that UK-SPEC should include a broad definition of 'technician'.
 - h. The consensus was that UK-SPEC recognises a broad spectrum of engineering professionals well, across technologies and disciplines.
 - i. While the summaries of the registration categories were well thought of, the descriptions of the competences themselves were thought to need improvement. A number of suggestions were provided.
 - j. Respondents expressed mixed views about the way in which UK-SPEC differentiates between registration categories, with particular concerns about the differentiation between IEng and CEng.
 - k. Additional information in UK-SPEC could be welcomed on topics such as career development; CPD; benefits of recognition; ethics; bullying; discrimination; UN Sustainable Development Goals and inclusivity.

- l. UK-SPEC is seen as having few barriers to inclusion. Some improvements could be to introduce images of inclusion, outline policies where they exist, use plain English or reduce emphasis on academic qualifications.
- m. The accessibility of UK-SPEC could be improved by providing access for the deaf, using plain English, cutting the word count, and ensuring much wider visibility of the document.

The accreditation of higher education programmes

5. This area focused on accreditation of degrees and other qualifications for registration as IEng and CEng. It covered the range and nature of accreditable qualifications, the extent to which The Accreditation of Higher Education Programmes (AHEP) adds value and the areas of learning and the learning statements within them.
6. Summary of responses:
 - a. Many but not all responses suggested that the range of qualifications that can be considered for accreditation should be broadened. Some respondents raised specific concerns about widening the breadth of accreditation and/or identified particular qualification types that they think should not be accredited.
 - b. A majority of respondents identified particular challenges with accreditation (for example, a need for greater consistency and alignment between the accreditation practices of the different Professional Engineering Institutions that undertake accreditation); 61% of respondents identified challenges with accreditation in the UK while 65% of respondents identified challenges with accreditation outside of the UK.
 - c. The majority of respondents (85%) believed that it is either very important or quite important that accredited degrees are recognised internationally.
 - d. Responses suggested that accredited degrees vary in how well they develop the underpinning knowledge and understanding that engineers need. Some respondents suggested specific improvements, while a number of responses highlighted the importance and difficulty of preparing graduates for future needs.
 - e. Just over 50% of respondents indicated that conformance with AHEP supports the development of excellence in degree content and delivery very well or quite well. Responses indicated that AHEP could be developed to provide greater support in this area and included suggestions for changes to accreditation processes.
 - f. There was a lack of consensus on how far conformity with AHEP helps providers innovate in terms of degree content and delivery, with similar percentages of respondents feeling this works quite/very well and quite/very poorly.
 - g. In respect of the six learning areas and the learning objectives within them, the majority of respondents indicated that:
 - i. the six learning areas in AHEP generally cover the learning required by engineers adequately;
 - ii. the six areas of learning should not be listed in an order that indicates relative priority;

- iii. the learning outcomes are set at an appropriate level; the number of learning outcomes and coverage of topics within them, as well as the distribution of learning outcomes between the six learning areas, is appropriate.
- h. Respondents indicated that the AHEP learning outcomes, used in accreditation, could also be useful for other purposes. 38% believed that they could be used for recognising qualifications other than degrees, 43% that they could be used for recognising apprenticeships and 48% that they could be used to assess knowledge and understanding during Professional Review.
- i. Respondents indicated that there are credit transfer issues associated with degree accreditation, particularly when some or all of the degree is completed outside the UK. However, respondents were broadly split on whether AHEP should specify European Credit Transfer and Accumulation System (ECTS) credits (or equivalent) for accredited programmes (41% yes, 37% no).
- j. Only 11% of respondents indicated that one or more aspects of AHEP could act as a barrier to inclusion (for example, ensuring that language is understandable to non-UK readers and in other cultural contexts).
- k. Only 21% of respondents indicated that additional information is needed in AHEP; suggestions included the principles of equality, diversity & inclusion and risk & security.
- l. Respondents also made suggestions regarding the AHEP document that included a request for the numbering of learning outcomes and the inclusion of a glossary.

The approval of qualifications and apprenticeships

- 7. This area focused on approval of qualifications, apprenticeships and other qualifications for registration as EngTech. It covered the range and nature of approvable qualifications, the extent to which the Approval of Qualifications and Apprenticeships Handbook (AQAH) adds value and the areas of learning and the learning statements within them.
- 8. Summary of responses:
 - a. A majority of respondents identified few challenges associated with the approval of qualifications in the UK, but 47% of respondents identified difficulties when approving qualifications outside the UK (examples included the difficulty of accrediting to UK requirements in countries which operate differently). The comments were useful in identifying the complexities of qualification approvals.
 - b. Almost all respondents indicated that international recognition of qualifications and apprenticeships is important.
 - c. Most respondents indicated that approved qualifications develop the skills that technicians need now and are likely to need in the future. Similarly, respondents indicated that approved apprenticeships develop skills quite or very well, although they were not as positive about how well they develop the underpinning knowledge and understanding needed for the future.
 - d. Respondents were positive about conformance to AQAH supporting the development of excellence in apprenticeship content and delivery, but less positive about its value in supporting innovation in apprenticeship content and delivery.

- e. Most respondents indicated support for AQAH including approval for qualifications and apprenticeships at levels that do not lead to EngTech registration.
- f. Strong support was received for the emphasis within AQAH on learning outcomes rather than inputs (e.g. students' entry qualifications, curriculum content).
- g. The majority of respondents indicated that the six key areas of learning identified in AQAH adequately cover the learning required for EngTech, although there was no clear majority with regard to whether the six learning areas should be listed in an order that indicates relative priority. The majority of respondents also indicated that the number of learning outcomes within these six areas is also appropriate, as is the coverage of topics, while all respondents agreed that the distribution of learning outcomes between the six areas of learning was appropriate and that the learning outcomes are at an appropriate level.
- h. There was a largely positive response to the question about whether the Engineering Council should provide some form of recognition for different types of apprenticeships. A very positive response was received regarding recognition of the apprenticeship standard, with slightly less support for recognition of the delivery provider/partnership. It was also noted that some respondents also felt that both the apprenticeship standard and the delivery provider/partnership should be recognised.
- i. Strong support was indicated with regard to professional engineering institutions being required to formally notify the Engineering Council when they are involved in developing an apprenticeship, delivering an apprenticeship or assessing an apprenticeship.
- j. A majority of respondents believe that no aspects of AQAH act as a barrier to inclusion but emphasised the importance of clear English.
- k. The majority of respondents indicated that no additional information was needed in AQAH.

Proposals for the recognition of higher apprenticeships

9. This area focused on recognition for higher apprenticeships. A [high-level model for apprenticeship recognition](#) had been developed and this was shared for comments.

10. Summary of responses:

- a. A majority of respondents indicated that higher apprenticeships should be recognised, highlighting the need for the Engineering Council to be proactive and responsive to the changing landscape. Respondents identified the benefits of doing so, particularly in terms of promoting registration. However, there was nervousness about the impact of the extra work that professional engineering institutions would have to undertake.
- b. There was overwhelming support for recognition of higher apprenticeships that contained an accredited degree; there was also some (but less) support for the recognition of higher apprenticeships that contain an unaccredited degree or a non-degree qualification, with mixed views about whether higher apprenticeships that do not contain any qualification should be recognised.

- c. The majority of respondents supported the suggestion that the Engineering Council could identify the minimum competence (e.g. some or all UK-SPEC competences) to be delivered by a recognised higher apprenticeship.
- d. The high-level model for apprenticeship recognition proposed by the Engineering Council received support from the majority of respondents. The majority of respondents also supported the suggestion that the model should apply to apprenticeships at all levels, which would entail a change to current practice.

The Registration Code of Practice (RCoP)

11. This area focused on the regulations that govern the way in which Licensed Members of the Engineering Council assess and register engineers and technicians and accredit and approve education and training programmes, activities for which they are licensed by the Engineering Council. Due to the specific nature of these rules, this area of the consultation was made available only to the professional engineering institutions.

12. Summary of responses:

- a. The bulk of the responses agreed that global definitions of ‘approve’ and ‘accredit’ would simplify matters, both for those within and outside the profession. There are institutions for whom the proposed changes in terminology conflict with current practice. There were also references to the fact that both the current and proposed definitions might place undue emphasis on development of knowledge and should be defined to apply equally to acquisition of competence.
- b. The consultation responses clearly show that the Technical Report route to registration¹ is valued and this was echoed by working group members. However, opinion was split on whether the amount of specificity in the current Registration Code of Practice was appropriate.
- c. The consultation asked whether interim registration should require completion of an accredited or approved qualification, or of any relevant qualification. Responses tended towards the broadest possible interpretation: interim registration should be available to any candidate whose underpinning knowledge and understanding have been assessed by the Licensed Member and found to meet the standard. There were as many responses questioning the value of interim registration as there were seeking to offer opinion on how it should be covered by the regulations.
- d. The consultation asked whether there was an unmet need for enabling ‘partial approval’ of qualifications and programmes. While a number of responses affirmed that this would represent on-the-face desirable parity and equivalence at all levels and types of recognition, it was notable that no professional engineering institutions confirmed that there were current programmes that would ‘partially meet’ the AQAH learning outcomes but have not been approved as they do not ‘fully meet’.

¹ The Technical Report (TR) route is one of the routes a candidate can use in demonstrating that they have acquired the requisite underpinning knowledge and understanding for their intended section of the Register. While the TR route is only used by a minority of candidates, it remains the most appropriate route for many potential registrants, and in particular those who have acquired their underpinning knowledge in the workplace.

- e. The current Registration Code of Practice enables a Professional Review Interview (PRI) to be switched to a different category of the Register after it has started. This is intended to apply to candidates who do not meet the threshold for a certain category but might meet that of another. In practice, this means switching to interviewing for IEng when a candidate is demonstrably not meeting the competences for CEng. The consultation proposed that, for clarity's sake, PRI interviewers should make their intentions clear and announce the commencement of a new interview rather than segueing from one category to another. While the consultation question proposed this additional clause, the responses all concerned the more fundamental question about whether this mechanism was appropriate at all. Concerns centred around the fact that it is a panel that makes decisions on candidates' suitability for the Register, rather than the interviewers. Allowing interviewers to effectively 'fail' a candidate for the category in question would seem to short-circuit this process.
- f. Registration Code of Practice paragraph 13 specifies that the two professional review interviewers 'shall be registrants at or above the registration category in which the applicant is seeking registration, with at least one having substantial experience in the relevant engineering discipline'. One consultation response requested a review of this policy, on the basis that the most appropriate interviewer for some candidates might be a registrant in a different category.
- g. Paragraph 18 of the Registration Code of Practice specifies that "Each Licensed Member shall have an appeals procedure available to unsuccessful applicants". There is no additional regulation on this topic. The consultation survey question asked whether Licensed Members found this regulation to be adequate. In general, there was no appetite for additional regulation on appeals, though there were suggestions.