

Accreditation of engineering degree programmes – current requirements and future challenges

Engineering Council conference, held 14 October 2009 at the Institute of Marine Engineering, Science and Technology, London.

Opening remarks by the Chairman, Professor Bob Cryan

In welcoming the 80 delegates, most of whom were from professional engineering institutions or academia, Professor Cryan referred to the IUSS Select Committee's recent praise for the engineering profession as being open, accessible and joined-up, and the emphasis that has been placed on the vital role for engineers in tackling the global challenges that we face.

Professor Cryan reminded delegates that the students of today will be the engineers of the future. The shift since 2004 to an outcomes-based system of accreditation has been welcomed by academics, and the engineering profession's accreditation process has been commended by the HE Regulatory Review Group as demonstrating good practice. The conference aimed to tackle the important issue of ensuring that students' education meets the standards set by the profession and equips them not only to be competent but also innovative and ground-breaking.

Accreditation is an accepted and valued process that is internationally recognised. The challenge is to maintain this as well as ensuring that the process deals satisfactorily with new and emerging types of HE provision and delivery methods, as well as changing student demographics, employer demands and government policy. Professor Cryan encouraged delegates to be open and honest in considering the issues related to current and future accreditation.

Presentations

After scene-setting by Richard Shearman, Engineering Council, delegates heard a range of perspectives from the conference speakers, and there was much interesting discussion. The distinction was made between quality assurance and accreditation, and the potential opportunities for closer working between these processes were highlighted. Delegates heard views from another profession, a university, a professional engineering institution and an employer, as well as an international perspective. The conference programme is

attached as Annex 1 and the presentations are available on the Engineering Council website at www.engc.org.uk.

Key points that emerged during the conference

There didn't appear to be a single major issue of concern, however a range of interesting comments and suggestions were made that warrant further consideration. These are outlined below.

Curriculum development

Can a single process of accreditation meet the aims of both meeting a threshold ie regulatory and spreading innovation ie enabling?

Identifying and sharing good practice, especially between universities, needs to be improved.

Facilitating an understanding of professional values at an early stage was supported, perhaps linked to wider promotion of student membership and/or student registration (GMC).

How to develop an understanding about what knowledge and skills employers require from graduates, and what can be developed in the employment and thus need not come from the degree programme?

Promoting accreditation

The need to focus on the value rather than cost of accreditation.

How important is the 'badge' of accredited status compared to, say, the process of getting there that includes self-reflection and being looked at by a third party?

How much of an added value to professional mobility is there as a result of accreditation?

A rough estimate of £10-20K was cited as the cost to an engineering department of an accreditation visit. Professional engineering institutions were encouraged to find ways of helping universities to protect the quality of courses in the face of severe pressures on budgets from 2010.

Standards

Is the intended non-prescriptive nature of UK-SPEC a reality? There is a perception amongst some academics that the scope for manoeuvre is limited when accrediting panels make demands.

Should we be concerned that in both the UK and elsewhere few engineering degree programmes are refused accreditation? Or does this suggest a need for accreditors to be more courageous in their decisions?

Is the student is the customer, the product (for the job market) or both?

The term 'employability' as applied to the programme outcome for engineering graduates was queried, and 'relevance to the job market' proposed as a better term.

It was suggested that only the intended competence of graduates, rather than their actual competence, and later their resulting performance are assessable.

Process issues

The sustainability of a process that is dependent on volunteers was queried.

SSCs might be helpful in identifying panel members from industry.

Ensuring that volunteers on accrediting panels keep up-to-date is crucial. The performance management of GMC accreditors was described. The inevitability of cultural mindsets in any a volunteer-based system was noted.

There is a need to encourage more continuing dialogue between the universities and the professional engineering institutions, rather than placing all the emphasis on the 5-yearly visit. Accreditation should be viewed as a developmental process rather than being judgemental. What sorts of partnerships are needed to enable this? To what extent can a university have a debate about planned courses?

The variation in accreditation practice between PEIs is sometimes hard to understand, given that all are working to UK- SPEC.

Currently the accreditation relationship is between the professional engineering institution and the engineering department. Engagement with the university itself as the awarding body may be welcomed and would present the opportunity for a university's QA staff to work alongside the department during the accreditation exercise, for mutual benefit.

All involved were encouraged to make greater use of a variety of existing reports produced for QAA purposes as similar documents and data exist.

Consideration should be given to coordinating the accreditation visit to occur with the university's periodic review process. It was noted that this has happened successfully in at least one instance, and a second is planned.

The QAA and GMC commended the involvement of students and others, such as lay persons, in their processes.

Requests to accredit franchise arrangements including outside the UK will bring challenges. QAA carries out such activity and has published a Code.

Transparency

There was a plea for greater transparency to ensure that the added value is clearly communicated to the key stakeholders. Examples cited included the publication of QAA reports on university websites, and publication by the GMC of its visit reports and also the medical schools' responses to these.

Workbased provision

It was noted that workplace learning is not a new concept in engineering, and theoretically an outcomes-based system of accreditation should be able to deal with such provision.

A challenge is to ensure that the workplace delivery of academic learning meets quality assurance and/or accreditation requirements. Engineering Council and some professional engineering institutions already have guidelines and frameworks in place, and there is the opportunity to share experience.

The way forward

The points raised will be considered by appropriate Engineering Council committees and also the Engineering Accreditation Board. Consideration will be given to establishing a webforum, with relevant stakeholder groups invited to comment on specific issues. In the meantime, any comments are welcome. Please forward these to desddon@engc.org.uk

27 October 2009



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14 October 2009 at IMarEST, 80 Coleman Street, London, EC2R 5BJ

PROGRAMME

09:45	Coffee and Registration
10:15	<p>Welcome by the Chairman of the Engineering Accreditation Board (EAB) <i>Professor Bob Cryan</i></p>
10:20	<p>EC^{UK}'s viewpoint <i>Richard Shearman, Director of Formation, EC^{UK}</i></p>
10.45	<p>An international perspective <i>Professor Jörg Steinbach, TU-Berlin and Past President SEFI</i></p>
11:10	Break
11:25	<p>Another profession's perspective <i>Martin Hart, Assistant Director for Education, GMC</i></p>
11:50	<p>Accreditation and its relationship to quality assurance <i>Sarah Butler, Assistant Director, Development and Enhancement Group, QAA</i></p>
12.15	<p>Discussion – all speakers <i>Summing up - Chairman</i></p>
12.45	Lunch
1. 30	<p>Employer's viewpoint <i>Patrick Kniveton, Head of Engineering Improvement, Rolls Royce Submarines (Nuclear Sector)</i></p>

1. 55	<p>A Professional Engineering Institution's viewpoint <i>Neil Atkinson, Director, Qualifications and International Development, Institution of Chemical Engineers/Dr Rob Best, Pro Dean (Operations), Faculty of Engineering Science & Built Environment, London South Bank University</i></p>
2. 20	<p>A university's viewpoint <i>Professor Helen Atkinson, University of Leicester</i></p>
2. 45	<p>Discussion – all speakers <i>Summing up - Chairman</i></p>
3.00	<p>Close of meeting (Tea/Coffee will be available)</p>