Role of Quality Assurance and Accreditation in a Learning Outcomes based Education

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Engineering Council

BACKGROUND TO OUTCOMES-BASED EDUCATION IN THE UK

Differentiator of degrees of same length:

- BSc 3 years
- BEng 3 years
- MEng 4 years
- BEng + MSc 4 years


University of Greenwich

ERDAL DOGAN

has been awarded the degree of
BACHELOR OF ENGINEERING
With SECOND CLASS HONOURS (2nd Division)
having followed an approved Honours programme in
COMPUTER NETWORKING

7th September 2004

Vice-Chancellor

Chancellor

Background to Outcomes-based Education in the UK

- Transparency (for students and employers).

Background to Outcomes-based Education in the UK

- Allows innovation and diversity.

Background to Outcomes-based Education in the UK

- Reflects competence and Commitment statements for professional qualification.

EngTech, IEng and CEng

A Knowledge and understanding

B Design and development of processes, systems, services and products

C Responsibility, management or leadership

D Communication and inter-personal skills

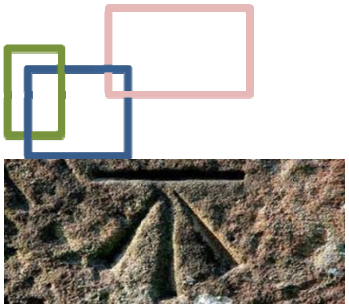
E Professional commitment

UK Quality Code

- To safeguard the academic standards of UK higher education
- To assure the quality of the learning opportunities that UK higher education offers to students
- To promote continuous and systematic improvement in UK higher education
- To ensure that information about UK higher education is publicly available.

UK Quality Code

- a framework for Higher Education Quality (FHEQ)



- Subject Benchmark Statements

Framework for Higher education Quality

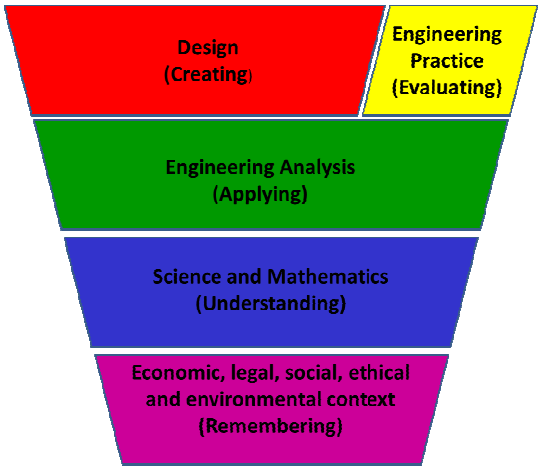
Typical Qualification	*FHEQ Level*
Doctoral degrees (eg PhD, EngD)	10
Masters degrees (eg MA, MSc, MRes) Integrated masters degrees (eg MEng)	7
Bachelors degrees with Honours (BEng)	6
Foundation degrees	5
Higher National Certificates (HNC)	4

Subject Benchmark Statements (Engineering)

Quality assurance agency (QAA) and Engineering Council (EngC) agree to use a single set of statements:

Accreditation of Higher Education Programmes
AHEP

Accreditation of Higher Education Programmes AHEP



Two global Overarching Frameworks

International Engineering Alliance:

- The Washington accord (1989-Engineers)
- The Sydney accord (2001-Engineering Technologists)
- The Dublin Accord (2002-Engineering Technicians)

The European Network for Accreditation of Engineering Education (2006-ENAEE) with the EUR-ACE Accord (2014):

- EUR-ACE label for the Bachelor degree
- EUR-ACE label for the Master degree

EUR-ACE Programme Outcomes

- Knowledge and Understanding;
- Engineering Analysis;
- Engineering Design;
- Investigations;
- Engineering Practice;
- Making Judgement Skills;
- Communication and Team-working Skills;
- Learning Skills.

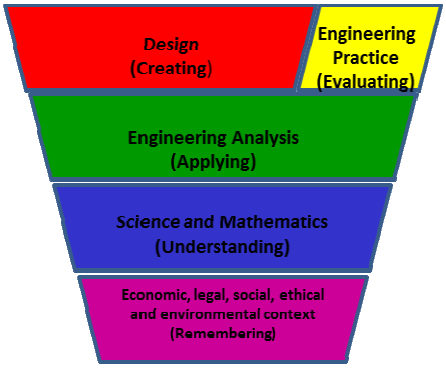
Learning outcomes in practice … Positive aspects

- Programme outcomes are well established and related to Subject Benchmark Statements;

- Accreditation in Engineering has substantial experience in using these to assess degree programmes;
- Evidence that Internal Programme Reviews and Accreditation Visits/Reports lead to positive changes;
- Academics feel less constrained and more able to innovate.

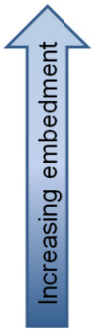
Learning Outcomes in practice … Challenges

- Differentiate between Threshold and Typical standards
- Focus on higher order of applying, evaluating etc rather than knowledge;
- Avoid plagiarism;
- Differentiate between collaboration and teamwork;
- Robust methods for assessing engineering practice;
- Skills and awareness often assessed indirectly.



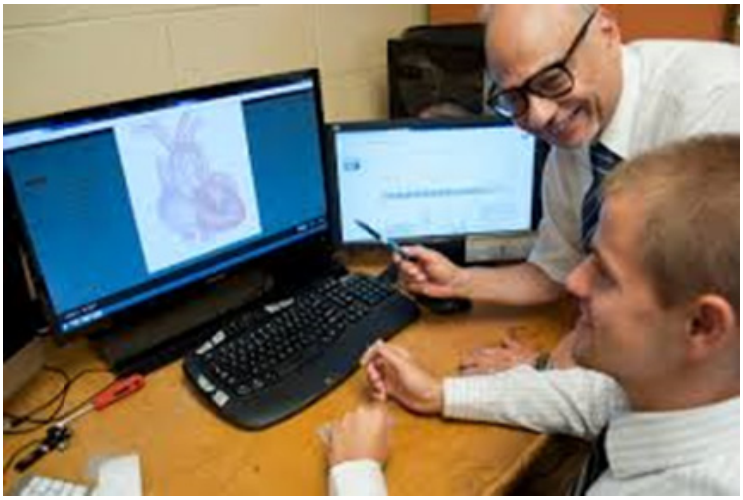
Learning Outcomes in practice … Challenges

- **Designing programme outcomes**
- **Module Learning outcomes aligned with Programme Outcomes**
- **Setting assessments to test that Learning Outcomes have been met**
- **Differentiating between failure to meet a Learning Outcome and Module failure**

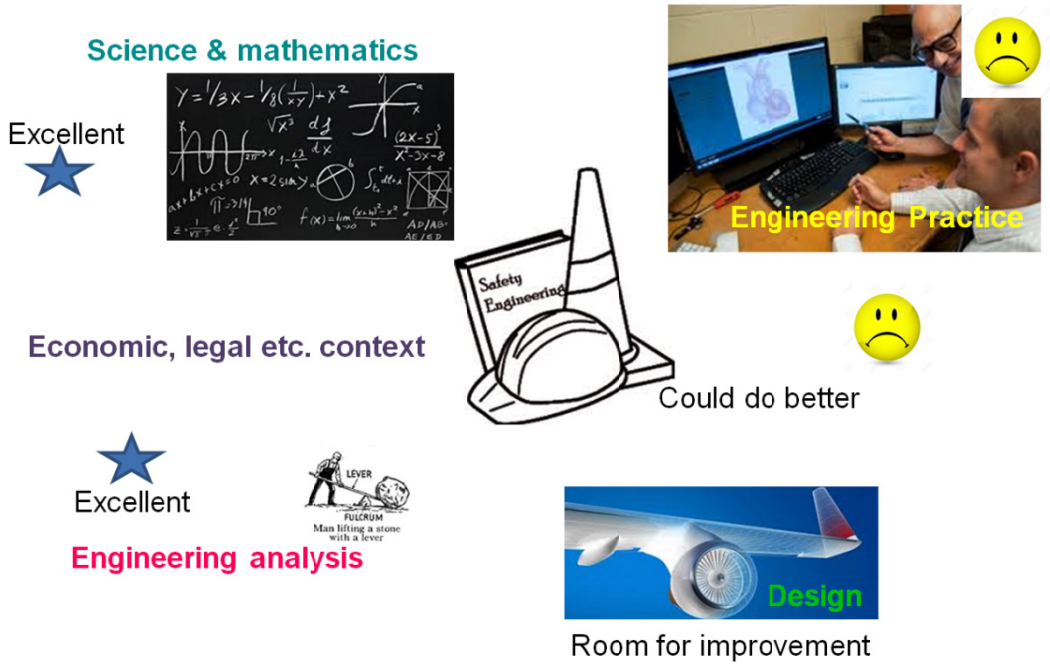


AHEP Learning Outcomes … Engineering Practice

- Understanding of context
- Knowledge of materials
- Ability in laboratory skills
- Understanding of technical literature
- Knowledge of legal issues
- Understanding of codes of practice
- Awareness of quality issues
- Ability to work with uncertainty
- Understanding & ability to work in different roles.



AHEP Learning Outcomes … Engineering Practice



THANK YOU

www.engc.org.uk

Prof. David Cleland

BSc Ph.D. CEng FICE FIStructE

Professor David Cleland is Professor of Civil Engineering in Queen's University, Belfast, United Kingdom where he has held the roles of both Head of School and Dean of the Faculty of Engineering. Outside Queen's he has been a member of the Board of the Engineering Council and the Construction Industry Training Board. He is currently the Engineering Council's representative on ENAEE's Label Committee and the Chair of the International Sub-committee of the Joint Board of Moderators (of ICE, IStructE, IHT & IHE). He has been active in accreditation for over 20 years. His research interests are in the behaviour of concrete structures and the durability of concrete. He has published over 150 papers in these areas and is a member of Federation Internationale du Beton Commission 5.