

Teaching engineering at Bournemouth University

Dr Philip Sewell PhD of Bournemouth University's school of design, engineering and computing tells *Impact* about why up-skilling is important

It is estimated that there are two jobs for every engineering graduate in the UK. So, how can universities encourage more young people to study engineering? This challenge has been laid down in a recent report by James Dyson, "Ingenious Britain – Making the UK the Leading High Tech Exporter in Europe" published in March 2010.

Bournemouth University are taking up this challenge by introducing new ways of teaching and learning in the technology-based subjects. This is to make the degrees more accessible to those students who may be put off studying engineering by the traditional 'chalk and talk' method of teaching. We are also not just looking to encourage those who are coming thorough the traditional routes to higher education but are also providing innovative degrees to up-skill the current engineering workforce.

The School of Design, Engineering & Computing at Bournemouth University currently have approximately 500 students studying at both undergraduate and postgraduate levels on the Design Framework. Approximately 150 undergraduates are recruited onto the framework each year with half of those onto Product Design and another fifteen percent onto the Design Engineering degree. In the last year we have seen our applications for places rise by twenty-two percent, which is above the national average.

The majority of our graduates will go onto have careers in design and engineering, however, we have found that recently more and more are coming back to us to further their education and want to gain the academic element

required to achieve Chartered Engineer (CEng) Status. A Chartered Engineer or Professional Engineer is highly regarded

"We must not forget employees already in the engineering workplace who would benefit from Higher Education."

in the engineering field and it is becoming more common that progression to management level in industry requires this status. It is also becoming more common that graduate engineering jobs require the student to have taken an IEng (Incorporated Engineer) or CEng accredited degree for them to be considered.

In response to this demand, the Institution of Engineering Designers (IED) has recently accredited both our undergraduate and postgraduate degrees enabling students to achieve MIED (Member of the IED), CEng (Chartered Engineer) and IEng (Incorporated Engineer) status. Achieving MIED, IEng and CEng accreditation confirms that our students are studying on a professional, internationally recognised degree that will enhance their employability in the design engineering field.

Whilst new engineering graduates are undoubtedly important to the future of the British economy we must not forget employees already in the engineering workplace who would benefit from higher education and who might not have previously had access to it. We are moving away from the traditional three year degree model to develop, with the support of industry, a two year flexible top-up engineering degree for engineers with apprenticeships, HNC/Ds or relevant experience. This will give them the opportunity to up-skill via distance



Dr Sewell's interests are in the areas of design simulation & modelling, mechanics of materials, artificial intelligence and medical engineering. He has published over 30 journal, conference and magazine articles in these areas.

learning supported by a small number of block sessions on site. It will not only give them a degree but also allow them to get on the path towards becoming Chartered Engineers.

As a result of these developments we have been able to strengthen our links with industry. Our enhanced reputation in STEM (Science, Technology, Engineering and Maths) courses has led to industrial research collaborations and enterprise activities such as Continual Professional Development (CPD) for industry.

So, what does the future hold for engineering in higher education? I believe the Government's commitment to STEM subjects will become evident when their Spending Review is published in late October. This review will set out the extent of the cuts to be made to higher education. A blanket cut in student funding will not encourage students to study engineering. In my opinion, cuts should be focused on non-priority areas. The government cannot afford to keep subsidising students who are studying degrees that ultimately will not benefit the UK economy.

Dr Philip Sewell BEng (Hons) PGCert PhD
Design Framework Leader
School of Design, Engineering &
Computing
Bournemouth University
Tel: 01202 961294
Email: psewell@bournemouth.ac.uk