

THE NUCLEAR TECHNOLOGY EDUCATION CONSORTIUM



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Established in 2005 to address the serious decline in nuclear education in the UK, the Nuclear Technology Education Consortium (NTEC)¹ brings together 9 UK universities, plus the Defence Academy, College of Management and Technology, to offer Master's level education in Nuclear Science and Technology. A report in 2002 by the Health and Safety Executive on Nuclear Education in British Universities² had concluded that "If nuclear education were a patient in a hospital it would be in intensive care" and recommended that "Immediate action is needed; otherwise nuclear education will slowly disappear". The report stated that "the focus of nuclear education should be on postgraduate courses" and "the move towards modular postgraduate courses and the introduction of postgraduate certificates and diplomas should broaden the appeal of nuclear subjects and attract more students".

Pockets of expertise and enthusiasm for nuclear teaching and research still existed within the universities but with the general decline of the UK nuclear sector from the late 1980s and through the 1990s the strength of the teaching and research groups at the individual universities was quickly diminishing. A consortium approach was therefore seen to be the best way forward. With four years of funding obtained from the Engineering and

Physical Sciences Research Council (EPSRC), NTEC was established. The consortium now has ten members:

- University of Birmingham;
- University of Central Lancashire;
- City University;
- Imperial College London;
- Lancaster University;
- University of Leeds;
- University of Liverpool;
- University of Manchester;
- University of Sheffield;
- Defence Academy, College of Management and Technology.

These partners offer twenty modules across all aspects of Nuclear Science and Technology relevant to the UK's nuclear energy programme, including courses to suit students looking to enter the new build or decommissioning sectors. A key feature of the NTEC programme is that it was developed in response to the requirements of industry, and in collaboration with industry. This means that not only is the content of the course matched to their needs but the "short course" format of one-week concentrated modules is also the preferred delivery method. This allows full-time students to complete the Master's programme in one year and part-time students who are already employed by industry to finish in three years.

To qualify for the Master's degree, students must pass eight of the modules and

submit a dissertation. Part-time students study four modules in each of their first two years and submit their dissertation after project work in the third year. Full-time and part-time students can also obtain a Postgraduate Diploma by omitting the dissertations and a Postgraduate Certificate by completing four core modules. All modules are also suitable for Continuous Professional Development so companies can send their employees on an intensive one-week course on a specific subject.

A development in 21st century education is the provision of university courses via e-Learning, sometimes known as Distance Learning, as the student does not attend the sessions, but accesses them via their computer. The ten most popular NTEC modules are available in this format which has allowed students from all over the world to study, as well as increasing the flexibility to allow more UK based employers to take the course. The Learning Outcomes of both delivery methods are identical so students qualify with the same degree and, if they wish, can mix Distance Learning with attendance to balance their workload over the one year or three year period. The programme is accredited by the Engineering Council on behalf of the main engineering Learned Societies, which allows the students to use their qualification towards Chartered Engineer status.

Industry input has been a vital component of NTEC since its establishment and continues

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... self-sustainable on the fee income ...

to be so today. Major nuclear companies from the UK are represented on the External Advisory Board to provide guidance and feedback to the Steering Group, which is made up of representatives from each of the partner institutions. There is also student representation on the Steering Group to ensure there is transparency to all the decisions, and to provide feedback from current students. All policy decisions are made at Steering Group level and implemented by the NTEC Co-ordination Centre which is based in the School of Physics and Astronomy at The University of Manchester. The NTEC Management Structure is shown in Figure 1.

The UK nuclear industry also contributes in a number of other ways:

- Providing an industry location for the Master's projects;

- Industry lecturers support the programme to provide real case studies;
- CPD and part-time student fees support full-time students;
- Industry recruitment of NTEC students after graduation;
- The mix of young professionals with full-time students on the modules helps the students to make good career choices.

Due to the integrated nature of the industry support, the NTEC programme is now self-sustainable on the fee income – in particular the fees obtained from the UK nuclear companies. This income enables NTEC to offer full fee waivers and a £7,500 stipend to full-time students with an upper second class degree or above, and a reduced fee of £4,000 for students with a lower second class degree. In this way industry is increasing the skills of their

current workforce and increasing the number of students they can recruit with the required qualification in Nuclear Science and Technology.

The real test of the success of any vocational programme is whether or not the students are recruited by industry at the end of their course. With the majority of students successfully managing to find an MSc project placement in industry it acts as a

by the Energy Secretary Ed Davey that planning consent had been granted for the construction of a new nuclear power station at Hinkley Point, the 500 students that have passed through the NTEC programme are ready, enthusiastic and above all educated, to contribute to the new build programme in the UK, as well as the safe decommissioning of the existing

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long-term job interview. Both employer and employee get to know each other during the three-month project period. This increases the prospect of both students and employers finding the best fit, leading to the student having a flying start to their career.

With the recent announcement in March 2013

fleet. In addition to this contribution to the UK nuclear industry, NTEC has also paved the way for a renaissance of nuclear courses at UK universities³. The success of NTEC and the parallel resurgence of the UK nuclear sector has encouraged many universities to hire more staff for their nuclear research groups. This has in turn led to a number of the universities establishing their own undergraduate or postgraduate nuclear courses, taught in the traditional manner. These provide additional places to educate the UK nuclear workforce of the future; a future where the UK nuclear universities collaborate with the UK nuclear industry for the benefit of the UK nuclear industry, and therefore ultimately the whole of the UK.

References

1. www.ntec.ac.uk
2. Nuclear Education in British Universities 2002, available at www.nuclearliaison.com
3. www.nuclearliaison.com.

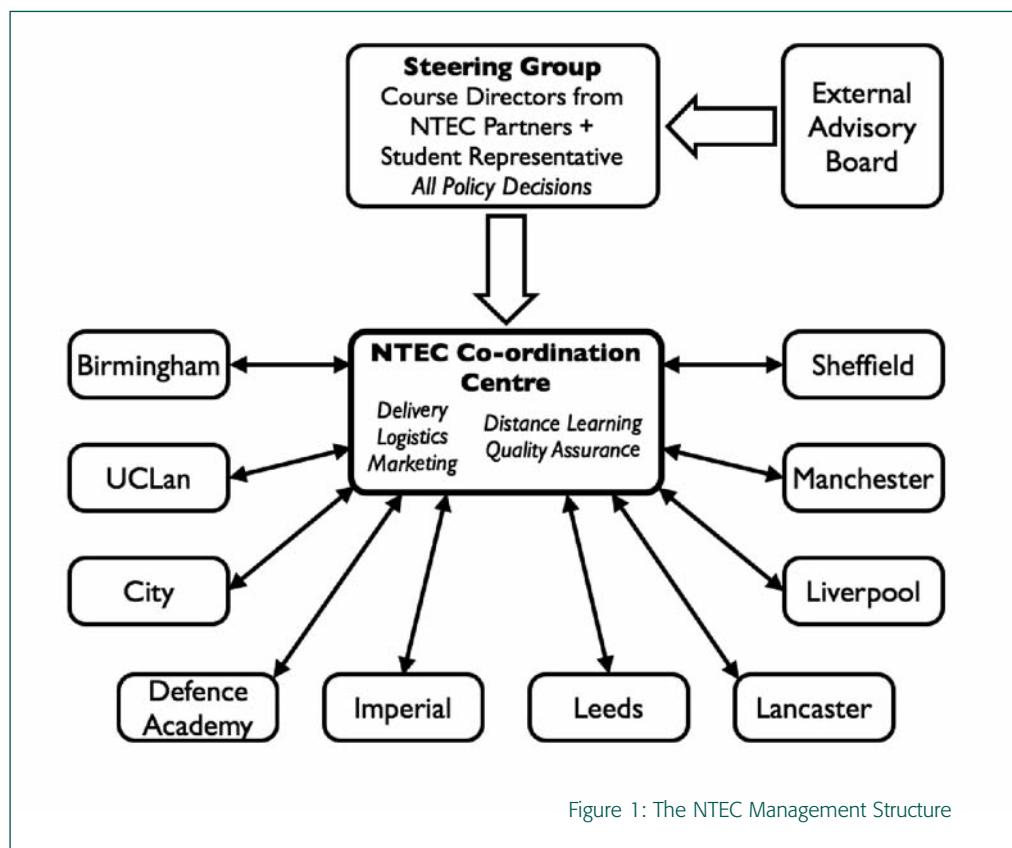


Figure 1: The NTEC Management Structure