

Engineering education world

Contributions are invited for this new feature. News items on policies that concern the engineering education world, new courses and curricula either of a unique nature or of international interest, new innovative laboratories and concepts, funding news for engineering research projects involving international participation, special international continuing education courses and news, industry-university interaction, engineering faculty news, and developments in engineering education of international interest. Please send news items and conference information to the Editor-in-Chief. Public relations offices of universities and human resources divisions in industry are requested to contact the Editor with news items concerning engineering education and training.

European Community

New academic supercomputer network

A \$4.6 billion comprehensive service computer network is planned for Europe under the Framework programme starting in 1994. This network is on parallel lines to the High Performance Computing Initiative (HPCI) launched this year with a budget of \$6 billion.

United Kingdom

Polytechnic lab quality

Her Majesty's Inspectors (HMI) regularly inspect polytechnic laboratories to check on standards and quality. Twenty-five per cent of these laboratories are below standard. Health and safety is a prime reason, in particular the standards of some laboratories working with radioactive materials require improvements.

Modern languages in demand

A substantial increase in demand for learning languages is being registered in polytechnics newly transformed into universities. This trend is especially pronounced for students who do not specialize in languages but study subjects such as engineering. A survey by the council for National Academic Awards has shown that 92% of polytechnics will not be able to cope with the new demand for languages. The traditional self-estimate of the

British that they are poor in foreign languages may have to be revised. Increased demand for modern languages is likely to be also a result of the open European market possibilities for UK graduates to take up positions in other countries of the EC. It is remarkable in this respect to note that the top administrative positions in the three major European educational programmes—ERASMUS, COMETT and TEMPUS—are held by UK nationals (**Alan Smith, Ed Prosser and Lesley Wilson**) with an outstanding command of French and German.

Buyers market for master's degrees

A study by the Engineering Professors Conference Research Unit has shown that the number of master's degrees in engineering is declining. Between 1987 and 1990 they fell from 1332 to 1229, and in electrical engineering from 465 to 411. Master's degrees in the UK are often supported by industry, and are taken as part-time degree courses. One reason for the decline is the economic recession—companies are more reluctant to avail themselves of the opportunities.

Spain

Getting college degrees without finishing college

A 25% level of dropouts from Barcelona Polytechnic has prompted the institution to offer a degree equivalent to a professional qualification for those receiving only 135 out of 225 credits in its telecommunications three-year degree courses.

The certificate will be equivalent to a third-level European Community professional degree standard. If students fail first-year theoretical subjects they may do more practical subjects in their second year and receive the consolation degree.

Israel

Engineering studies continue on Palestinian campus

Bir Zeit university on the West Bank is opening its doors again after years of disruption due to the protracted *intifada* action by Palestinians. Bir Zeit will begin with the resumption of studies in engineering and science as access to laboratories is of prime importance; studies in arts and business will be continued only on campus for the time being.

China

Science and technology support

The Chinese government is continuing its efforts to close the science and technology gap with the industrial world. In 1991 400 returning scholars received research support of over \$4 million, which should encourage Chinese students in Western countries to return to their homeland. A further stress is being laid by the authorities on continuing education as the majority of Chinese technical personnel are within ten years of retirement. Only a tenth of Chinese engineering personnel think that their current level of training is adequate for modern requirements.

USA-Europe

'Free' versus 'state' controlled higher education?

According to a new study from Holland the prevailing wisdom on the dichotomy between the American and European systems of education—namely that the American system is subject to free enterprise and the European systems are constrained by state bureaucracies—may not be entirely correct. The United Kingdom and The Netherlands have the most decentralized systems, whereas Denmark is the most centralized. Also in the USA there are considerable differences between states. The study indicates that the notion that Anglo-Saxon higher education is so different from the continental systems in principle needs to be revised. [Source: 'The Level of Government Influence on Higher Education', by O. McDaniel and W. Buisson, Dutch Ministry of Education and Science, Postbus 25000, Zoetermeer, The Netherlands.]

USA

Reorientation of defense spending

The Department of Defense is redirecting some of its activities in support of engineering education. A

\$25-million program is intended for funding of manufacturing engineering education at ten universities. A further program, 'Manufacturing Managers in the Classroom', is providing matching funds for technical and community colleges to improve qualifications of students for manufacturing industries.

The news is—academic teaching doesn't pay

Or didn't we know? Now there is proof from **Professor James Fairweather** at Pennsylvania State University's Department of Education. His study of the matter shows that academics who teach less, earn more. Those who spend only a third of their time or less in class earned an average of \$54,200 a year; those who teach only, earned \$34,300 a year. It is hard to envisage a rapid change of attitude towards teaching, says Fairweather. Research brings in prestige, money and infrastructure. Cultural acceptance of the university structures of research has been nurtured strongly since 1945.

Germany

Shorter study times?

The agile Minister of Science in North-Rhine Westphalia, Anke Brunn, is determined to throttle back the long sojourns of students in German universities. This is the result of evidence that in most subjects students need longer to obtain a degree than laid down in a diffusely applied 'regular study time' concept. This time of nine semesters—equivalent to 4.5 years—is set against an average of 13.4 semesters in information sciences, 13.1 in civil engineering and 12.5 in electrical engineering. Seldom do German students graduate below the age of 27. Ms Brunn intends to adhere to 8 semesters in Fachhochschulen and to 10 semesters for engineering at universities. There will be an adjustment of semester hours to 177 for engineering; current hour loads are running at over 200. Weekly loads at universities need to be limited to 25, with Fachhochschulen to 33. The number of examinations and a more streamlined examination procedure is also envisaged. All these honourable intentions are being hampered by the overloading of higher education with students without proper facilities and staff. The overloading has created a mass of students lacking in supervision and direct access to instructors and professors. [See also the survey reported by M. Fries on length of studies in German universities (*Int. J. Appl. Engng Ed.*, 6, 617-640).]

Crisis in higher education

Demands are getting louder from circles of higher education for substantial reforms of the system. 1.8 Million students are currently enrolled in universities and Fachhochschulen with a planned capacity for only 850,000 students. **Professor Hans-Uwe Erichsen**, Chairman of the German

Rectors' Conference has presented a number of developments with negative repercussions for higher education, which was the theme of the recent meeting of German rectors in Rostock. The shift of high-quality research to Max-Planck and Fraunhofer Institutes, and away from universities, limits the potential for science progress, and neglect by the federal states of infrastructure for higher education leads to protracted study periods (see paper by M. Fries cited above). Study periods in Germany are 2–3 years longer than in other European countries with over 30% of students not even completing their degrees. Thirty per cent of university courses and 85% of Fachhochschule courses have admission restrictions, i.e. Numerus Clausus (NC). Professor Erichsen calls for 30,000 new scientific and 15,000 other new positions in

higher education. The financial cost of reform measures is 6 billion Deutschmarks (nearly \$4 billion). Furthermore, the academic system is in need of fundamental reforms—shorter degree courses and a retreat from the strict binary system are the order of the day, otherwise it is likely that getting a higher education will drift into a second-rate choice. The editor comments that with political and financial pressures mounting in Germany after unification, a reform of higher education, traditionally a slow mover, strongly depends on political pressures, and a clear, unified and determined approach by the higher education community. With this year's DM 12 billion Federal budget deficit, the fight for an improved higher education faces steep political as well as financial hurdles.

COURSES AND CONFERENCES

Courses

Hatfield Polytechnic (now the University of Hertfordshire) in the United Kingdom and the Fachhochschule Hamburg, Germany, announce a new modular European inter-university course in vehicle engineering. The course is scheduled to begin in Autumn 1992 and is intended as a part-time course to be given in a modular scheme for graduates who are interested in a higher degree in vehicle engineering. The course will be shared between the UK and German locations with participation of other European institutions in this area also planned. Degree is an M.Sc. in vehicle engineering.

Address for enquiries to: Dr. P. R. Bullen, School of Engineering, University of Hertfordshire, Hatfield, Herts AL10 9AB, UK.
Tel: +44-71-389264. Fax: +44-707-279115.

Educational Technology in Higher Education

Loughborough, UK, 15–27 November 1992.
Information: Ms J. Coghiel, The British Council, 10 Spring Garden, London SW1A 2BN, UK.
Tel: +44-71-3894264. Fax: +44-71-3894154

Conferences

Expedition '92: New Learning Technologies

Prinzregententheater, München, Germany, 9–11 September 1992.
Information: FWU Institut, Bavariafilmplatz 3, 8022 München, Germany.
Tel: +49-89-6497350. Fax: +49-89-6497270.

Qualifications for New Technologies

Educational and Training Centre, GDI Rüschlikon, Zürich, Switzerland, 9–11 September 1992.
Information: GDI, Langenhaldenstrasse 21, 8803 Rüschlikon, Switzerland.
Tel: +41-1-7246111. Fax: +41-1-7246262.

International Conference on Design Theory and Methodology

Phoenix Arizona, 13–16 September 1992.
Contact: Dean L. Taylor, Sibley School of Mechanical and Aerospace Engineering, Cornell University, Ithaca, NY 14853, USA
Tel: +1607-255-0900.

Third World Conference on Engineering Education

Portsmouth, UK, 20–25 September 1992.
Information: Professor T. V. Duggan, Faculty of Engineering, Portsmouth Polytechnic, Portsmouth PO1 3DJ, UK.
Tel: +44-705-842012. Fax: +44-705-842584.

IGIP International Association for Engineering Pedagogics: Annual Conference

Esslingen, Germany, 21–24 September 1992
Information: IGIP Sekretariat, University of Klagenfurt, Universitätstrasse 65, A-9022 Klagenfurt, Austria.
Tel: +43-563-531731. Fax: +42-463-5317100.

Multimedia and CD-ROM

European conference and exhibition sponsored by Microsoft. Wiesbaden, Germany, 7–9 October 1992.
Information: Reed Exhibition, Heedter Sandberg 32, 4000 Düsseldorf, Germany.
Tel: +49-211-556281. Fax: +49-211-556231.

3rd International Forum on Technology Management

Santa Monica, California, USA, 11–14 October 1992.

Information: Professor Richard C. Kaehler, Pepperdine University, 400 Corporate Pointe, Culver City, CA 90230, USA.
Tel: +1-310-5685730. Fax: +1-310-5685727.

European Training Technology Event (ETTE)
27–29 October 1992.

Information: ETTE Conference Office, Novop Conference Organisers, Potterstraat 40, 1071 DB Amsterdam, The Netherlands.
Tel: +31-2067511808. Fax: +31-206628136.

ENTREE—A Development Conference on Environmental Training in Engineering Education

Karlsruhe, Germany, 9–13 November 1992
Information: Engineering Society of Finland STS, Ratavirtijakatu 2, SF 00520 Helsinki, Finland.
Tel: +358-0-159054. Fax: +358-0-1590306.

4th Annual Convention and Conference: Australasian Association for Engineering Education

University of Queensland, Australia, 13–6 December 1992

Information: Conference Secretariat, University of Queensland, Adelaide, Australia.
Tel: +61-7-3657100. Fax: +61-7-3657099.

8th World Conference on Co-operative Education

Dublin, Ireland, 30 August–3 September 1993

Information: Adrienne Joly, Dublin City University, Dublin 9, Ireland.
Tel: +353-1-7045424. Fax: +353-1-7045505.

2nd East-West Congress on Engineering Education

Technical University Lodz, 20–24 September 1993

Information: Z. Pudlowski, Electrical Engineering, University of Sydney, Sydney, NSW 2006, Australia.
Tel: +61-2-6922000. Fax: +61-2-6604706.