

# Engineering education world

*Contributions are invited for this 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.*

## United Kingdom

### *Electronics industry closures motivate new university/industry initiatives*

The closure of the Fujitsu and Siemens semiconductor plants in the Northeast of England is bad news for local universities, but not as bad as for the hundreds losing their jobs. The problem is a world glut of computer memory chips, with prices dropping from \$60 to \$2. Other sectors of the electronics industry are healthy. For the University of Newcastle, the Siemens closure means lost opportunities but it is ready to help rebuild the electronics industry in the Northeast.

**Anthony O'Neill**, Siemens professor of microelectronics, University of Newcastle, says, 'I was involved in the negotiations that got Siemens here in the first place. One of the reasons they came was that they were impressed with the microelectronics research at Newcastle University. As a result of that the Tyne and Wear Development Corporation endowed a full chair. That will still be there for the future but I do not know whether it will continue to be the Siemens chair. We have three PhD students funded by Siemens—two funded from Munich and one from Tyneside. They get a much better deal than they would from the Engineering and Physical Sciences Research Council. Siemens agreed to continue the funding. The image of

microelectronics is dented by this. It does not help because engineering is not particularly the flavour of the month as a subject. Siemens agreed to an imaginative undergraduate sponsorship, which we will be losing. For us it is more a case of lost opportunities than real loss.'

**David Kinniment**, professor of electronics University of Newcastle, says, 'Of course we are disappointed that the current situation has made it uneconomic to manufacture DRAM devices at present, but we still have an involvement with Siemens and Fujitsu, as well as in applied materials (through an equipment supplier to the semiconductor industry, which has also set up in Newcastle) and with companies outside the region. We have also set up a £1m company, the North East Microelectronics Centre, NEMeC, jointly owned by the universities of Newcastle and Durham, that employs a number of engineers on research and development related to semiconductor test and reliability. We are confident that this will provide a focus for our links with the industry and for new investment in the region in the future, probably in activities such as semiconductor device design that attract more value-added products.'

See also: Hicks *et al.*, A Computer-based Teaching System for Electronic Design Education, *IJEE*, 13(1), pp. 64–71, 1997.

## Germany

### *Plans for an International Virtual University in English*

A professor at the University of Karlsruhe's Institut für Logik, Komplexität und Deduktionssysteme, **Peter Deussen**, heads the project of building a virtual university that, he hopes, will be accessible across the world. Three other universities in Southwest Germany—Freiburg, Heidelberg and Mannheim—are involved in the plan. 'We want to introduce IT and multimedia techniques for teaching on a virtual campus based in Germany,' Deussen said in June when he spoke at a conference on new media and information technology in higher education at Nottingham Trent University, UK.

The project may have some way to go before it becomes reality. It was refused federal funding in June, and finance remains a problem despite promises from the state of Baden-Württemberg and a number of German and international companies. But Deussen is confident of finding the support he needs. Before tackling the world, the commission that Deussen heads in Baden-Württemberg is putting in some practice with ViKar, a 'virtual association' of colleges in the Karlsruhe area which will pilot various ways of using the available technology. Soon these institutions—which include a technical college, a college of education, a centre for art and technology and a conservatoire—will share multimedia and distance learning courses. Four kinds of course are under development at the moment: an introduction to information and telecommunications technology; art, culture and technology; information systems; and maths for non-mathematicians. 'We will be able to partition courses into 'Lego elements' which can be put together as they fit different students,' said Deussen.

Deussen says the global virtual university project is intended to boost Germany's worldwide academic standing. Publicity documents for the international tele-university spell it out: keeping pace with market leaders in the United States is paramount. After referring to 'the increasing number of institutions of higher education competing for international students by employing global marketing strategies and customer-oriented educational services, often to the disadvantage of German universities', the prospectus for the international tele-university (ITU) specifically identifies the Internet-based Western Governors University set up in the US in 1996 as a rival to be emulated. As Deussen put it, 'In Hong Kong, it's completely usual that students get lectures from MIT. We will have to compete.'

It is for this reason that although the ITU 'will be producing courses from the best parts of our (German) universities', the language of instruction will be English. Students will eventually have to set foot in Germany. After a 'virtual phase', learning from their own homes, they will complete their

courses with a 'presence phase' at one of the German universities. As ITU's web site puts it, 'This two-tiered procedure will reduce costs for the students and at the same time give them the opportunity to spend part of their studies at a 'real' university in Germany and to get to know their host country.'

Deussen's Nottingham audience seemed to be divided between those who saw him as a visionary—or at least someone who was doing his bit to ensure that Europe stayed competitive with America—and those with a more sceptical attitude. As one put it, 'Multimedia is very expensive. The cost curve is much steeper than you think, and I'm not sure how much of a market there is out there. Perhaps I am a little naive', Deussen said. 'But without naiveté you will never start a new idea.'

## France

### *French higher education plans concentrate on technology*

Expansion is over for France's universities. After a decade of rapid growth they face at least five years of stability. The emphasis will be on developing research and technology, and renovating campuses, particularly in Paris. These are among measures in the 'Universities of the Third Millennium' plan (U3M) unveiled by education minister **Claude Allegre**. Next year's budget has set aside FFr1b (\$170m) for the first stage of it. It succeeds the Université 2000 expansion programme under which student numbers rocketed to more than two million, most of them in the universities. New establishments were created and existing ones became larger to keep pace with enrolments of young people who left school armed with the baccalaureate, their passport to a university place.

Now numbers are dropping off and universities are improving their seriously underequipped facilities, according to M. Allegre. Only Paris, neglected under Université 2000, will receive preferential treatment. Plans include a new university site in a Left Bank redevelopment zone. Some other campuses, particularly those dating from the 1960s, will be renovated, with priority for student housing and facilities for foreign students.

Some universities considered as 'centres of excellence' will be strengthened, and underused outposts in smaller towns will close. Research and technological innovation, absent from Université 2000, will be central to U3M.

M. Allegre envisages that development of new technologies will save having to construct new lecture halls. He refused to discuss the total cost of U3M, planned to cover the next five years or more but central government and regional authorities will share it. Education is still a major budgetary priority, with higher education receiving over FFr51b, 5.4 per cent more than last

year. Despite declining student numbers, M. Allegrè has prevented any axing of university posts—though, apart from 800 administrative and service jobs, there will be no new ones. The new student social plan, which starts this academic year and awards higher grants to more students, will cost an extra Ffr808m bringing total support to over Ffr7b. The research budget has risen to Ffr53.9b, up 1.6 per cent which is still above the rate of inflation (1.5 per cent). It is tilted in favour of public research, including medicine, agronomics and CNRS, the national council for scientific research. Another Ffr500m will set up a national science fund to co-ordinate studies between various institutions that will redeploy some of their resources to fund research.

Government commitment to promoting industrial innovation is reflected in the increased allocation of Ffr670m for the technological research fund, to stimulate action in small and medium-sized firms and industries. Networks will link laboratories and enterprises in such fields as food, transport, civil engineering, telecommunications, health, the environment and computer science.

### Hungary

#### *Getting in and getting out of tuition fees within three years*

Hungary's state universities began to charge tuition just three years ago, but the country's new government has decided to buck a European trend and reverse that decision. Starting this semester, higher education in Hungary is again free—at least for most students. Not surprisingly, the move has been warmly received by students. Educators, however, remain sceptical of the decision, and opposition politicians call it a mistake. 'I'm concerned that it is more of a political message than any real help for the students,' says **Ferenc Voros**, vice-rector of the Technical University of Budapest, which, with 11 500 students, is Hungary's second largest post-secondary institution. Abolishing tuition was one of the promises the centre-right Fidesz-Hungarian Civic Party made during its election campaign this past spring. When it ousted the ruling Hungarian Socialist Party in May, it quickly set about making good on that pledge. Since 1995, students had been paying about 2200 forints a month in tuition—about \$10 (the average monthly salary in Hungary is about \$300). The new government estimated that having to pay tuition was a financial hardship for about two-thirds of the country's 250 000 post-secondary students. However, only 152 000 students will be absolved from paying tuition: students working on a second degree, those taking longer than the allotted five years to complete their degree, or whose scores were below average on the entrance examinations, will still have to pay the fee.

**Adam Kiss**, deputy state secretary for higher education and science, says it is going to cost less to do away with tuition than it would have cost to identify financially needy students and offer them aid. Mr Kiss notes that once Hungary's economy improves, tuition fees can be reinstated. He says that to truly improve the financial standing of Hungary's universities, major changes in the higher-education system must be made. Right now, he adds, the government is in the early stages of developing a plan to merge some of the country's 88 universities and colleges.

### USA

#### *Virtual universities*

In the USA as well as in other countries (see Germany, above) the Virtual University establishments are gaining momentum. Although initial enrolment figures for one publicised consortium, Western Governors University have been disappointing, a number of consortia are pursuing distance learning with increasing engagement. The electronic universities have varying structures and operating modes. These range from those which use the Web to guide their students to and through their courses, to those that have a complete administrative structure and grant full degrees using the Web. The main consortia in the regions of the country are:

- Western Governors University—<http://www.wgu.edu>
- Southern Regional Electronic Campus—<http://www.srec.sreb.org/>
- Common Market for courses in the Midwest—<http://www.cic.uiuc.edu>
- Community colleges:—<http://ccdin.rio.maricopa.edu/>

The following are bound to individual states:

- California: California Virtual University—<http://www.california.edu/>
- Florida—<http://www.flcsampus.org>
- Indiana—<http://www.icn.org>
- Massachusetts—<http://www.umass.edu>
- Pennsylvania—<http://business.ship.edu/vu/>

State systems which co-operate:

- California State University—<http://www.csu.csstateu.edu/onlinecsu/>
- State University of New York: SUNY Learning Network—<http://sln1.suny.edu/sln>

#### *Copyright matters*

A ruling by a federal judge in California has established that publishers of collective works do not own the rights to sell individual journal articles without the authors' approval. Although for now the ruling applies only in one case, it could have a significant effect on university faculty. While making the process of obtaining copies of

articles more cumbersome for educators and scholars, it could also give journal authors more control over their own published works. With most academic journals now, the custom is that authors sign over all their rights. This ruling, however, might encourage more authors to retain certain rights for themselves so that they are free to use their works in their teaching or future publications.

A number of provosts have recently called on academic authors to seek more control over copyright when submitting articles. The Association of Research Libraries, has also been pushing alternatives to traditional journal publishing practices.

The ruling on authors' rights came in a copyright infringement case brought in October 1997 by four freelance writers against a document-delivery company called UnCover, a Denver subsidiary of The Dialog Corporation. UnCover also has a license to provide this journal's papers to clients. UnCover maintains a database of more than eight million articles from about 17 000 journals and publications. For a fee, the company provides requested copies of articles to libraries and individuals.

The freelance writers, who are hoping to convert their lawsuit into a class action, claim that UnCover has been seeking permission only from publishers—and not from authors—before providing the articles. According to the ruling, publishers of a journal have rights to reproduce material in a revised edition or a later series, but that does not apply to the act of copying individual articles. 'No reasonable argument can be made that defendants in this case are 'revising' their collected works when they photocopy individual articles,' the ruling says.

The judge also acknowledged that the interpretation could create burdens for educators and others. 'Defendants are correct, that academic use of articles will be made more difficult by the adoption of plaintiffs' construction, which will require obtaining permission from both the publisher and the author. The Court, however, is not free to construe the statutes in the manner most efficient.' **Nancy E. Egan**, general counsel for Dialog, in Mountain View, Cal., said the company believes that the law favours the company's contention that publishers own broad rights to the copyright of materials in collective works. She also disagreed with the notion that the ruling would be good for authors. Rather than giving authors more rights, Ms Egan said, the ruling could result in publishers' demanding 'stronger rights or more rights' as a condition of publishing their works.

## Conferences

### **Pedagogics in Design Education**

19–20 November 1998  
State Scientific Library  
University of West Bohemia  
Pilsen, Czech Republic.  
Contact: Prof. Stanislav Hosnedl,  
Dept. of Machine Design,  
Univerzitni 8,306 14 Pilsen, Czech Republic.  
Tel: +420 19276253; Fax: +420 19279990  
e-mail: boruskio@kks.zcu.cz

### **CAL 99**

#### **Virtuality in Education**

28–31 March 1999  
The Institute of Education, London, UK.  
Contact: Phillipa Orme,  
12 Church St., Wantage OX12 OLN, UK.  
Tel: +44 1235 868811; Fax: +44 1235 868811  
e-mail: p.orme@dial.pipex.com  
<http://www.elsevier.nl/locate/cal99>

### **10th International Conference on College Teaching and Learning**

14–17 April, 1999  
Jacksonville FL, USA.  
Contact: Bill Martin  
Tel: +1 904 646 2150; Fax: +1 904 646 2188  
e-mail: wmartin@fccj.org  
<http://www.fccj.cc.fl.us/conf/>

### **The 4th European Forum for Continuing Engineering Education**

9–11 June 1999  
Trondheim, Norway.  
Contact: Mari Saeterbakk,  
SEVU Congress Department,  
N-7034 Trondheim, Norway.  
Tel: +47 7359 5669; Fax: +47 7359 5150  
e-mail: mari.saterbakk@sevu.ntnu.no  
<http://www.ntnu.no/sevu/4thforum>  
American Society for Engineering Education

### **Annual Conference**

20–23 June 1999  
Charlotte, North Carolina, USA.  
Contact: Dyanne Hughes.  
1818 N. St. NW,  
Washington DC 20036, USA.  
Tel: +1 202 331 3522  
e-mail: d.hughes@asee.org  
<http://asee.org>