

Graduates say engineering programs need overhaul

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The teaching of undergraduate engineering programs could be radically overhauled following concerns graduates are ill-equipped for the workforce after learning "old" theory and getting little practical experience at university.

Engineering graduates identified a number of major changes that should be made to undergraduate programs, such as culling much of the maths component, more contact with practitioner lecturers, greater emphasis on project management, and more time on industry placements.

The responses were garnered from graduate workshops held over

three months in each state by the Australian Technology Network of five universities.

The critical feedback was in line with that from earlier interviews by the ATN, with senior executives who said universities were still concentrating on "old" maths and science skills that were now required to a much lesser degree. They said graduates had to be more work-ready because 21st century profit imperatives meant companies would not "carry" graduates as they once had.

ATN executive director Vicki Thomson said the next six months would be spent reviewing courses and "going through the detail of what this means in terms of concrete changes".

"Not everything will change, there are some good things that are being done," Ms Thomson said. Any changes to courses will be implemented by 2008.

The chief executive of Engineers Australia (which accredits all tertiary engineering courses in

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Australia), Peter Taylor, said it was an "unrealistic expectation" that all graduates be job ready.

"While universities should be alert to the changing needs of

industry, it's also a responsibility of industry to provide in-house continuing professional development for staff," he said.

The ATN workshops found graduates had different work experiences depending on the engineering stream they studied. Civil engineers were the most happy and believed courses provided the right mix of practical and theoretical skills. They also reported more industry placement time than other streams.

Telecommunication and aerospace engineers were least impressed and reported using very little of what they learned, especially the advanced maths of years three and four.

Graduates who had done double

degrees thought they were far more in touch with employers' demands and "climbed the ladder" more quickly.

Seventy per cent of graduates who attended the focus groups were doing postgraduate studies in business management and/or marketing and commerce — not all by choice. More than half were doing so because they believed the lack of this knowledge left them too exposed in the workplace.

A total of 126 graduates attended the workshops. The ATN comprises Curtin University of Technology, the University of South Australia, RMIT University, the University of Technology, Sydney, and the Queensland University of Technology.