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Sydney University takes a stand on maths



University of Sydney students will need to pass maths to enter science, engineering, business and IT courses. Michel OSullivan

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by Tim Dodd

The University of Sydney will lead the attack on declining standards and falling enrolments in maths by requiring students in a range of courses, including science, engineering, commerce and IT, to have passed maths, at minimum of intermediate level, in year 12.

Tyrone Carlin, the university's deputy vice-chancellor (registrar), said the new policy will apply to students starting bachelor degrees from 2019 so that students currently in year 10 can choose their year 11 and 12 subjects with full knowledge of the new rules.

Professor Carlin said the move would lift academic standards at the University of Sydney, which had suffered due to students' poor maths skills.

"The data we have is pretty emphatic: there is a very measurable difference in academic success, in programs with a quantitative element, between students who have two-unit Mathematics [in year 12] and those who don't," he said.

Currently no universities in NSW require students to have studied year 12 maths to

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enrol in a maths-related bachelor degree. Nationwide, a minority of universities have maths prerequisites for such courses.

According to the Australian Mathematical Sciences Institute, 41 per cent of Australian universities require maths at an intermediate level in year 12 to enrol in engineering, while only 14 per cent require it for science and 13 per cent for commerce.

Professor Carlin said that from 2019 students will need to have passed the NSW Higher School Certificate (HSC) two-unit Mathematics subject to enrol in any engineering or IT bachelor degree, nearly all science bachelor degrees, and bachelor degrees in economics, commerce, pharmacy and veterinary science.

The new policy was decided by the university's academic board in December.

The decision makes the University of Sydney the first to move against the trend – which started in Australian universities two decades ago as a ploy to boost enrolments – of lowering the standard of maths prerequisite subjects needed to study maths-related bachelor degrees.

'ASSUMED KNOWLEDGE'

Currently in NSW most universities list maths as "assumed knowledge" for maths-related degrees and offer bridging courses for students who don't make the standard.

The director of the Australian Mathematical Sciences Institute, Geoff Prince, who has campaigned strongly for maths prerequisites for university, praised the decision.

"It's very pleasing that the University of Sydney is taking the lead in NSW where 'assumed knowledge' is almost universal and by far the worst in the country. I urge the other NSW universities to immediately follow with prerequisites from 2019," Professor Prince said.

Professor Carlin acknowledged that the lack of maths prerequisites at universities had contributed to the move away from higher-level maths in senior school as students chose the lower-level general maths subject, or no maths at all, in the hope of gaining a better ATAR (Australian tertiary admission rank) score.

"We are very concerned about reports, which we have heard over and over again, about schools pushing able students into general maths," he said.

In the past 20 years the proportion of Australian students studying intermediate maths in year 12 has fallen from about 27 per cent to 19 per cent, and the number studying advanced maths (which builds on intermediate) has fallen from about 14 per cent to 10 per cent.

Professor Carlin said it was particularly concerning that female students were moving away from higher-level maths.

He said the university knew it was taking a risk in raising maths standards because it could lead to fewer enrolments unless the number of students studying the higher

growing as fast as they used to be

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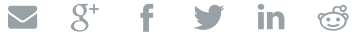
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levels of maths in year 12 started to increase.

"If we don't see a commensurate response we are limiting the pool of eligible students," he said.

He said the university would spread word of the change to students, schools and the community. "We are very hopeful the message will be received."



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