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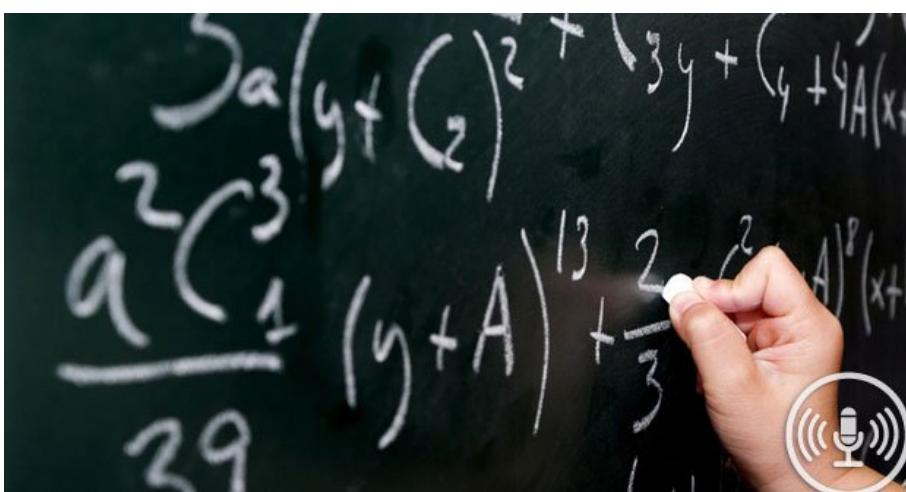
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Tougher uni prerequisites could help arrest maths decline: AMSI

By: James Wells in Industry+Reform, News, News, Podcasts, Radio+TV, Top Stories September 22, 2016 0

University course prerequisites are one remedy to the decline in Year 12 students taking harder maths subjects, a representative from the Australian Mathematical Sciences Institute has said.

AMSI has released data showing that the number of Year 12 students taking on higher-level maths subjects dropped gradually between 2006 and 2015.

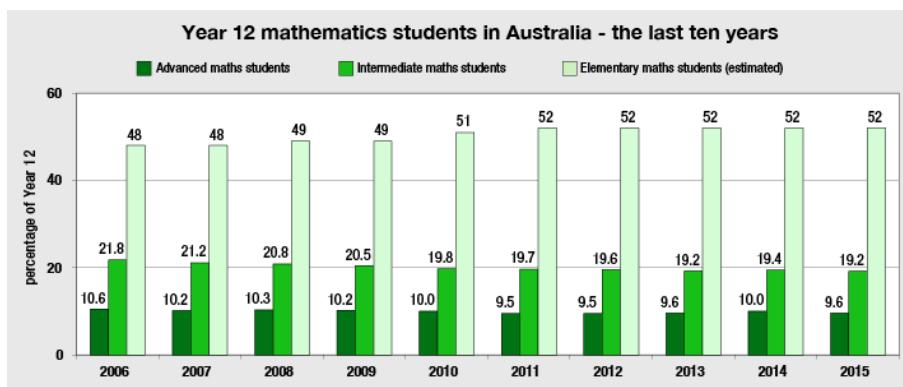


Illustration: AMSI.

Figures from the New South Wales Board of Studies, Teaching and Educational Standards (BOSTES) show

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the number of Year 12 students taking at least one maths subject for their Higher School Certificate is at its lowest level since the state-wide exam was established 50 years ago. Of the 69,350 students on track to complete their HSC this year, only 77.6 per cent are studying maths.

Janine McIntosh, AMSI schools program manager and Choose Maths program director, said students shouldn't be forced to take Year 12 maths because it's not helpful to force these students into subjects they don't enjoy and where they don't perform strongly. Rather, she said, the students who are good at maths should be encouraged to take it at higher levels.

Many students don't take the harder mathematics subjects because they feel they can achieve a higher ATAR doing the easier ones. McIntosh said this can backfire on them.

"[What] they're told when they go speak to somebody about their career [is], 'The course that you want doesn't require this [subject] as a prerequisite, so play the ATAR game and go and get a better mark in a different subject,' " McIntosh explained. "Sometimes they choose the low-level mathematics as that different subject. Anecdotally, that doesn't always work, because they relax. They think, 'I don't have to work very hard in this subject because it's the easy maths.' And they don't actually do very well in it anyway."

McIntosh said university prerequisites for the harder maths subjects would certainly help, as they'd force students to take them. The University of Sydney has implemented this for 62 of its degrees. The University of Western Australia, Edith Cowan University, Curtin University and Murdoch University have [implemented a bonus ATAR point scheme for Year 12 students who take harder maths](#).

One pitfall related to this issue is that prerequisites and assumed knowledge are often confused with each other, McIntosh said. Assumed knowledge means information students will need to know in order to complete a course, even though they may not be required to take a formal subject.

"Parents, teachers, career advisers and the students themselves don't understand the difference between a prerequisite and assumed knowledge," McIntosh said. "In all the study guides for all the courses, they will say that mathematics is assumed knowledge for this course, but it's not a prerequisite, so those students don't choose maths, and they find themselves in first year, and they're struggling, with either the maths subjects that they have to do, or with the maths components of other subjects."

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