

CETL-MSOR Conference 2015

Stephen Lee: When, what and how are changes being made in 14-19 mathematics education – repercussions for higher education.

Do you know what is going on with pre-university maths qualifications? Is your information up-to-date? This presentation will outline some of the ongoing reforms to pre-16 and post-16 mathematics qualifications and their possible impact, particularly on Higher Education (HE), over the coming years. It is an update of the Higher Education Academy commissioned, MEI-written, 'Understanding the UK Mathematics Curriculum Pre-Higher Education (2010)' report and the subsequent article in MSOR Connections (2014).

Students starting HE courses in Autumn 2019 will have taken reformed, more demanding GCSEs in Mathematics (and English) – with more content and a greater emphasis on problem solving. There will be a different grading system that will be numeric, rather than alphabetical. If they did not succeed at GCSE Mathematics at age 16 they will have resat it as part of their post-16 programme of study.

Some students starting HE courses in Autumn 2017 (a small number in 2016) will have taken a two-year post-16 Core Maths qualification. This is designed for students who have passed GCSE Maths but choose not to proceed to AS/A level mathematics. .

Students starting HE courses in Autumn 2017 will have taken reformed, linear A levels in some subjects, but note this does not affect A level Mathematics and Further Mathematics until 2019. The content for reformed A level Mathematics will be the same for all exam boards, chosen by ALCAB. If a student chooses to take AS, AS marks will not be counted towards the A level, unlike in the present modular system. There will be a greater emphasis on problem solving, modelling, reasoning and proof. There will be a new approach to statistics; students are expected to explore in class a large real-world data set, using appropriate technology.

The presentation will explore some of the possible implications arising from these reforms – a major risk being whether there may actually be a decrease in the numbers taking A level Mathematics and Further Mathematics, for the first time since the curriculum 2000 debacle. What could HE expect of students who have studied these reformed qualifications? Finally, should HE be concerned as to the requirement for more teachers to deliver GCSE resit and Core Maths, as well as the CPD needs with mathematics A levels now having compulsory content?