

More Mathematics and Further Mathematics A levels awarded than ever before

The further increases in the numbers of students taking A level Mathematics and Further Mathematics are a real cause for celebration, especially for independent charity Mathematics in Education and Industry (MEI). Today's results show continued increases in both Mathematics and Further Mathematics, taking the numbers to the best in the 20 years since records have been kept: a total of 98 937 A levels awarded. **Since 2003 A level Mathematics numbers have increased by 69% and A level Further Mathematics numbers by 149%**. At a time when our economy needs more highly-qualified young people to pursue careers in science, technology and engineering, it is very encouraging that they are rising to the challenge. The Further Mathematics numbers are particularly encouraging for MEI, who manage the Further Mathematics Support Programme. The dramatic increases since 2003 show the value of MEI's initiative in rescuing Further Mathematics and the wisdom of successive governments in supporting it.

Jon Prichard, Chief Executive Officer of the Engineering Council, said:

"MEI has played a significant role in delivering the increase in numbers of young people successfully continuing with mathematical studies, especially in the state sector. This opens up to them a far wider range of opportunities for further study, and at a time when the country needs more well-qualified engineers, this can only bode well in helping to increase the numbers going on to study engineering and technology."

Charles Tracy, Head of Education pre-19 at the Institute of Physics, said:

"We're delighted to see the further increase in students choosing to take Further Maths and congratulate MEI for the excellent work that it does to support the teaching of the subject."

Mathematics (including statistics) is embedded in a large majority of university courses, in a wide range of subjects. Those who wish to study for degrees in economically important areas such as sciences, technology, engineering and finance, as well as mathematics itself, all need a high level of mathematics. Further Mathematics, taken alongside A level Mathematics, provides young people with an excellent mathematical background for degrees in strongly mathematics-related subjects and many university departments of engineering, sciences and mathematics are now encouraging prospective undergraduates to study it.

Less than a decade ago A level Further Mathematics was generally only available to students educated in the independent sector, or in the best performing state schools and colleges. This meant that many students educated in the state sector were seriously disadvantaged when applying for prestigious degree courses at leading universities. The work of MEI's government-funded Further Mathematics Support Programme (FMSP) has revolutionised access to Further Mathematics.

Through the FMSP, every sixth-form Mathematics student in England has the opportunity to study for AS/A level Further Mathematics qualifications, even if their school or college is unable to offer them tuition directly. The FMSP's provision of free resources and expert advice has also enabled some schools and colleges that were not teaching Further Mathematics to start teaching Further Mathematics themselves.

Professor Chris Budd, Vice President of the Institute of Mathematics and its Applications, strongly welcomes the increase in the numbers of students doing Mathematics and Further Mathematics A levels:

"Maths has made the modern world possible and the training that A level Maths gives will be of great help for these students for the rest of their lives. I applaud the Further Mathematics Support Programme for giving this opportunity to so many students from every possible background."

Professor Matthew Harrison, Director of Education at the Royal Academy of Engineering said:

"Yet another increase in the number of people taking Further Mathematics A level after what looked like terminal decline just a few years ago is fantastic news. It is very rare that such a reversal in fortunes can be attributed to a single intervention but in this case my mind is made up. MEI have made this happen and those who care about mathematics owe them a debt of gratitude".

Compared with 2011:

- A level Mathematics numbers are up from 82 995 to 85 714, **an increase of 3.3%.**
- A level Further Mathematics numbers are up from 12 287 to 13 223, **an increase of 7.6%.**

Since 2003 A level Mathematics numbers have increased by 69% (from 50 602) and AS level Mathematics numbers have increased by 133% (from 63 841).

Increases at AS level are also strong, suggesting continued increases at A level next year.

- AS level Mathematics numbers are up from 141 392 to 148 550, **an increase of 5.1%.**
- AS level Further Mathematics numbers are up from 18 555 to 20 954, **an increase of 12.9%.**

Since 2003 A level Further Mathematics numbers have increased by 149% (from 5 315) and AS level Further Mathematics numbers have increased by 522% (from 3 371).

Further Mathematics is increasingly becoming a requirement for many prestigious courses at leading universities. Many employers look favourably on Further Mathematics as it shows clear skills of problem solving, analysis and logic, providing a good base for a range of careers including business and finance, insurance, accountancy, engineering, and information and communication technology.

The CBI/Pearson *Education and Skills survey* (June 2012) reported that:

“Businesses are well aware of the need to take steps to grow the talent pool of STEM skills, with 64% taking some action to encourage young people to pursue STEM subjects.

“More than two-thirds of employers (68%) think the Government can help future shortages by better promoting science and maths in schools, especially post-16.

“Recruiting staff with strong science, technology engineering and maths (STEM) skills will help underpin the UK’s ability to compete and achieve growth in many major sectors like manufacturing, construction and engineering.”

The Ofqual Summary Report: *International Comparisons in Senior Secondary Assessment* (May 2012) stated that:

“The depth to which a topic is studied is particularly significant in the judgement of demand. A level Further Mathematics was the broadest and the deepest qualification reviewed.”

Charlie Stripp, Chief Executive of MEI, said:

“The FMSP has boosted participation in AS/A level Mathematics and Further Mathematics by building partnerships with schools and colleges over several years. The FMSP provides tuition for students and specialised professional development for teachers. It also works with universities and employers to help ensure young people are aware of the opportunities made available to them if they take A levels in Mathematics and Further Mathematics.”

Notes for editors:

1. Mathematics in Education and Industry (MEI) (www.mei.org.uk) is an independent charity that is committed to improving mathematics education for all.
2. MEI is a major provider of professional development for mathematics teachers and leads the secondary strand of the National Centre for Excellence in the Teaching of Mathematics (NCETM).
3. The Further Mathematics Support Programme (www.furthermaths.org.uk) is a government-funded initiative, supported by the Department for Education and is managed by MEI. It follows on from the very successful ‘Further Mathematics Network’ initiative, which was set up following a successful 5 year pilot project that was developed by MEI and funded by the Gatsby Charitable Foundation.

4. The Further Mathematics Support Programme involves schools, colleges and universities working together collaboratively to widen opportunities for students. It uses a blended learning strategy that employs intensive tutorial input alongside independent study, supported by extensive, purpose-written, online resources. This model is proving very successful and, suitably adapted, could be used by other high-value shortage subjects such as physics and modern languages.
5. Further Mathematics reinforces the content of the standard AS/A level Mathematics and introduces students to important topics such as complex numbers and matrices, which are vital for many mathematics-related degrees.
6. For more information, please contact Sue Owen on 01225 716493 or by email at sue.owen@mei.org.uk

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7. For detailed background information on the Further Mathematics Support Programme and Mathematics in Education and Industry (MEI), please see www.furthermaths.org.uk and www.mei.org.uk