FMSP | Let maths take you further

FOCUS ON PREPARING FOR HIGHER EDUCATION

Focus of the Month
May 2016

Preparing for Higher Education

> *"We estimate that of those entering higher education in any year, some 330,000 would benefit from recent experience of studying some mathematics (including statistics) at a level beyond GCSE, but fewer than 125,000 have done so."*
>
> Mathematical Needs, ACME 2011

Our focus for this month is the support and advice that the FMSP provides relating to the importance of AS/A levels in Mathematics and Further Mathematics for transition to undergraduate studies across a range of degree subjects.

Why Mathematics is important

A large number of degree courses require or encourage AS or A level qualifications in Mathematics and Further Mathematics as part of their entry requirements. For example, some degree courses in Mathematics and closely related subjects, such as Engineering, make a differentiated offer for students who have studied AS or A level Further Mathematics. This means that students who have taken these qualifications get a reduced offer, for example:

Standard Offer: *AAA or A*AB;*
or AAB or A*BB or A*AC, including Further Mathematics A-level;
or AAB or A*BB or A*AC, Plus an A in AS-level Further Mathematics.

Other degree courses, such as Chemistry, encourage students to take Further Mathematics through their entry requirements:

Essential: Mathematics and Chemistry are required at A level. Preference will be shown to students who are taking any of the following as their third Subject: Further Mathematics, Physics, Biology. The majority of recent successful candidates have offered one of these as their third subject.

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For many other degree courses, it is beneficial for students to have well-developed mathematical skills. The 2014 HEA report Mathematical Transitions states: *"There should be clear signalling to the pre-university sector about the nature and extent of mathematical and statistical knowledge and skills needed in undergraduate degree programmes. As part of this signalling university tutors should consider recommending the benefits of continuing with mathematical/statistical study beyond the age of 16."*

So, for degree courses in subjects such as Psychology, Economics, Business, Geography and Sports Science, it is beneficial for students to continue to study Mathematics post-GCSE in order to sustain and extend their mathematical knowledge and understanding.

The Russell Group report Informed Choices lists Mathematics and Further Mathematics as 'facilitating subjects' - subjects which are required most often for entry to degree courses. The FMSP Universities page provides more information.

The FMSP liaises with Admissions Tutors in universities to find out more about the mathematical aspects of their undergraduate degree courses and how students can best prepare mathematically. A summary can be found on the FMSP website for each of Mathematics, Engineering, Physics, Biology, Chemistry and also for a range of other subjects.

Resources for students and teachers

When deciding what degree subject to choose, it is helpful for students to see examples of the material they will study. The FMSP website contains exemplar materials of the mathematics covered in a number of degree subjects, including Mathematics, Biology and Chemistry degrees. Students could use these independently or work on them in class with their teachers.

For students applying for Mathematics degrees there is additional information on applying for a Mathematics degree, including interview preparation.

Some Mathematics degree courses and related subjects require STEP (Sixth Term Examination Paper), AEA (Advanced Extension Award) or the MAT (Mathematics Admission Test) as part of the entry requirements. The FMSP provides resources and support to help students prepare for these examinations.
For students: furthermaths.org.uk/step-aea-mat
For teachers: furthermaths.org.uk/step_aea_support

Medical degrees

Some medical degree courses have specific entry requirements relating to A level Mathematics and Further Mathematics. A summary of guidance can be found on the medical degree page of the FMSP website.

Other useful links

- The NRICH website contains useful guidance on applying for degrees in mathematics and related subjects. The website also has useful guidance on how to prepare for degrees in a range of subjects that would benefit from having studied A levels in Mathematics or Further Mathematics.
- The official STEP, AEA and MAT websites provide detailed information about these qualifications and allow access to sample materials.
- Some students might choose to take a Core Maths qualification rather than AS/A level Mathematics alongside their other level 3 qualifications. More information about the Core Maths qualifications can be found on the Core Maths Support Programme (CMSP) website.
- General advice and guidance on applying to university can be obtained from the UCAS website.
- The importance of quantitative skills in the social sciences has been highlighted by the Q-Step Programme. The programme has 15 Q-Step centres and 3 Q-Step affiliates placed around the country who are working to develop specialised undergraduate programmes. Through their support programme, they are also working to promote quantitative skills training that will be accessible to students who may be progressing to the social sciences at university.

New UCAS tariff

For students applying to university from September 2016 onwards, a new UCAS tariff will apply. The points that will be awarded for A level, AS level, Core Maths and Extended Project Qualifications (EPQs) are shown in the table below.

	A*	A	B	C	D	E
A level	56	48	40	32	24	16
AS level	-	20	16	12	10	6
Core Maths	-	20	16	12	10	6
Extended Project Qualification (EPQ)	28	24	20	16	12	8

Teachers can download a factsheet for schools and advisers from the UCAS website and there is also a factsheet for parents about the new tariff.

Information for universities

The FMSP provides information for universities about A level Mathematics and Further Mathematics. FMSP information and guidance for universities includes links to the A level Mathematics and A level Further Mathematics briefing documents. There is also information about other relevant research publications and a link to the MEI Pre-University Mathematics Guide.