

the use of mathematics and statistics in higher education is widespread and growing

Students studying a wide range of subjects encounter mathematics or statistics within their courses.

For some, like engineers or psychologists, it is a clearly identifiable part of their course, usually with one or more specific modules.

For others, the amount of mathematics or statistics is smaller but nevertheless important: using a formula about population growth in geography; explaining data in journalism; performing a drug calculation in nursing or medicine.



why is mathematics support necessary?

The evidence base for the need for additional support is extensive.

Many students have low confidence in their mathematical abilities and the prospect of encounters with mathematics in their undergraduate or postgraduate studies or as part of job selection is very daunting.

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We estimate that of those entering HE 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.

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ACME report Mathematical Needs: Mathematics in the workplace and in Higher Education (2011)

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In 2006, the Royal Society argued that the gap between the mathematical skills of students when they entered HE and the mathematical skills needed for STEM first degrees was a problem which had become acute. ... The evidence we received suggested that the problem remains.

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House of Lords Select Committee on Science and Technology report Higher Education in Science, Technology, Engineering and Mathematics (STEM) subjects (2012)



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The UK is weak in quantitative skills, in particular but not exclusively in the social sciences and humanities... another reason for the poor skills of undergraduates is the dearth of academic staff able to teach quantitative methods.

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British Academy position statement Society Counts: Quantitative Skills in the Social Sciences and Humanities (2012)

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Many students require some additional academic support, especially in the mathematical skills required in science, mathematics, engineering and technology.

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National Audit Office report Staying the course: the retention of students in higher education (2007)

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Many biological science graduates have not studied mathematics beyond 16 ... their understanding of statistical techniques is low ... demand for statistics skills will increase.

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Association of British Pharmaceutical Industry (ABPI) report Skills Needed for Biomedical Research (2008)



what is mathematics support?

One of the roles of mathematics support is to provide opportunities for students to receive assistance in preparing for and dealing with mathematics or statistics that they encounter.

This support is in addition to any formal teaching that they receive as part of their course.

Mathematics support not only helps students who are struggling, it also helps to raise aspirations of better prepared students enabling them to progress from good results to excellent ones.

Support is offered in dedicated centres or in locations such as a Skills Centre or Library. It is non-judgemental and supportive and seeks to take students from "where they are" to where they need to be in order to succeed on their chosen courses.



what can you do?

If you are a **university leader** or **policy maker**, ensure you appreciate the scale of the challenge and work with **sigma** to ensure the availability of excellent support facilities and services in your institution.

If you **teach** students who are struggling with mathematics or statistics refer them to appropriate resources within your institution and from:

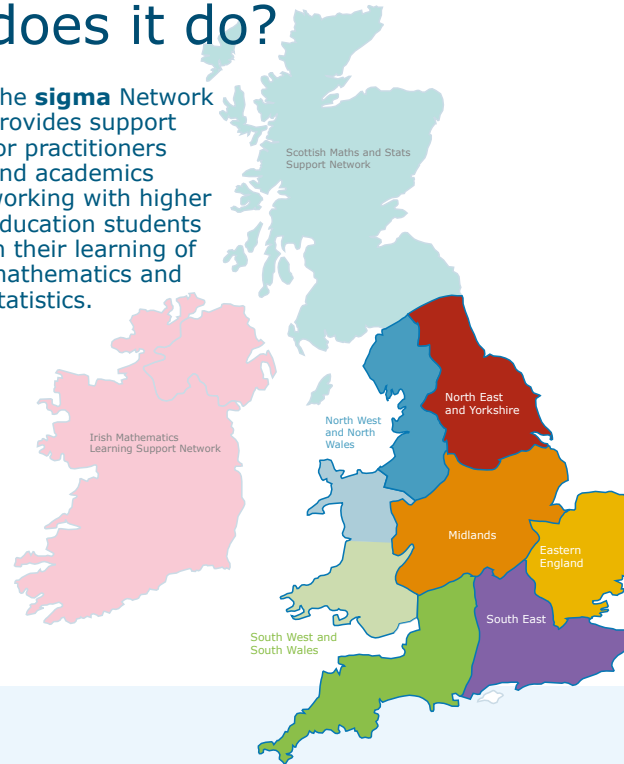
www.mathcentre.ac.uk and www.stats tutor.ac.uk

If you work in mathematics or statistics **support** get involved with your local **sigma** Hub events. Offer to run an event. Share your experience with and learn from others.

If you are a **university advisor**, publicise the work of the **sigma** Network.

what is the sigma network and what does it do?

The **sigma** Network provides support for practitioners and academics working with higher education students in their learning of mathematics and statistics.



sigma Network Hubs offer local advice, networking opportunities and events.

The **sigma** Network has a website with news, funding opportunities and resources for practitioners.

www.sigma-network.ac.uk

The **sigma** Network keeps you informed through the mailing list and the **sigma** Network quarterly e-Newsletter.

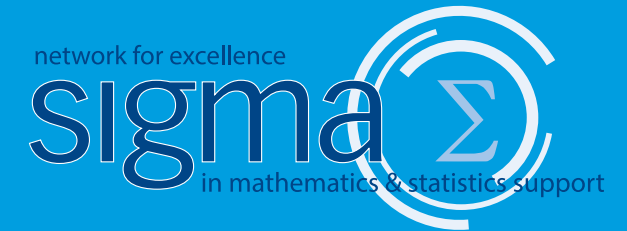
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sigma Network

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Why all your students need maths
What you can do to help them

Support for you from the **sigma** network
www.sigma-network.ac.uk

