

Media release

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For immediate release

Mathematics degrees, their teaching and assessment

The London Mathematical Society, the learned society for mathematics in the UK, has issued support for those teaching mathematics in higher education. The *Teaching Position Statement* aims to explain to non-mathematical colleagues some of the distinctive features of the assessment and teaching of mathematics, both as a subject in its own right and in a service teaching context.

The statement comes after numerous requests from LMS members and colleagues. It addresses four areas where the mathematical sciences differ significantly from many other subjects and where, consequently, mathematicians may be asking their universities for flexibility in procedures.

Professor Chris Budd, LMS Education Secretary, explained, "Maths is a very special subject, both in its own right and as part of many other subjects. The LMS wants to support and encourage all those teaching mathematics in universities to help them ensure their students receive the best possible instruction."

To read the full statement, please see the LMS website at www.lms.ac.uk. The statement refers to material from Quality Assurance Agency's subject benchmark statement for undergraduate programmes in mathematics, statistics and operational research (2007).

ENDS

Teaching Position Statement (Précis)

1) *A student who fails a small number of individual modules, but has an overall satisfactory average, should not be deemed to have failed a degree programme in mathematics.*

In mathematics, raw marks over 90% and under 20% are not uncommon, whereas a range from 50 – 75% would be normal in humanities subjects. Even the best learners may find some topics difficult to grasp and may achieve some low marks in a profile that is clearly of overall excellence. Requiring students to pass all modules to gain a degree, regardless of their overall score (as is expected in some universities), skews the nature of the study of mathematics. It encourages the removal of challenging material from modules and leading students to 'play safe' in their choice of subjects.

2) *On occasion, a specific module should be available to more than one year of a mathematics degree.*

Not all mathematics modules have a natural year of study in the undergraduate programme. Mathematics is a cumulative and sequential subject, so it can sometimes be difficult to assign a clear level to a particular topic. Some topics fit quite naturally into a modular system with pre-requisites, and in turn many more modules may require it. Hence, a module may quite naturally be studied in different years by different students, and yet still make appropriate contributions to the two students' differing sub-webs of connected modules.

3) *Masters degrees in mathematics should not necessarily be obliged to reach the frontiers of knowledge.*

Mathematics is a very advanced and highly developed subject so it is unsurprising that, in some areas of the subject, reaching the cutting edge of research could require five or more years of rigorous study. Thus, while MMath programmes will have developed students' mathematical maturity, and given them some sense of the nature of the research frontier, they will certainly not have reached it along a broad front.

4) *Despite the agreed importance of modern, computer-based teaching and learning, lectures delivered using clearly visible boards should continue to play an important role.*

Software packages provide practical aids to learning mathematics, but to understand the process of doing mathematics, students need to see someone else working through and creating the results. Consequently, during a lecture, the lecturer must be able to create and write out a large body of argument. Ideally, most of what is written during a fifty-minute lecture will still be visible at the end: the lecturer will often be referring back to earlier material. Lecture boards (often chalkboards in large lecture theatres) remain an important technology for teaching mathematics in an exciting and interactive way, promoting a good understanding of the subject.

In addition, there is growing concern that the practice of putting lecture notes on websites is encouraging students not to attend lectures. Printed notes are no substitute for attending a lecture and seeing maths being created.

Notes for Editors

1. The **London Mathematical Society (LMS)** is the UK's learned society for mathematics. Founded in 1865 for the promotion and extension of mathematical knowledge, the Society is concerned with all branches of mathematics and its applications. It is an independent and self-financing charity, with a membership of over 2600 drawn from all parts of the UK and overseas. Its principal activities are the organisation of meetings and conferences, the publication of periodicals and books, the provision of financial support for mathematical activities, and the contribution to public debates on issues related to mathematics research and education. It works collaboratively with other mathematical bodies worldwide. It is the UK adhering body to the International Mathematical Union.

2. The **Quality Assurance Agency's** Subject benchmark statements set out expectations about standards of degrees in a range of subject areas. They describe what gives a discipline its coherence and identity, and define what can be expected of a graduate in terms of the abilities and skills needed to develop understanding or competence in the subject. To read the Quality Assurance Agency's Subject benchmark statement for Mathematics, Statistics and Operational Research, see <http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/Maths07.asp>

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