

Departmental Assessment Statement

Section 1: Assessment Aims

Undergraduate: Our two Undergraduate degree programmes of three years duration provide courses in pure mathematics and mathematical methods to the national standard in these areas, complemented by courses mainly from the Departments of Economics, Finance and Statistics. These programmes enable students to learn logical argument, problem solving and mathematical modelling, appropriate to applications in Social Sciences. The learning of a logical framework also requires a facility with abstraction and rigorous formal developments, as well as an examination of the validity of assumptions and the validity of conclusions. As to applications, these include primarily economics, finance, operational research, and optionally some actuarial science. The teaching programme, whose details are published in the [Programme Regulations](#), is designed so that the mathematics and the areas of its application both support each other, the latter providing a firm context for the former.

Graduate (Masters level): The two MSc programmes, similarly, provide taught courses in mathematics, suitable for high quality graduates, which can be applied to problems in various fields, particularly economics, business and the social sciences. The programmes prepare students for further study and doctoral research, or for professional and managerial careers, particularly in areas requiring the application of advanced quantitative skills. Finally, the students are supported towards the writing of substantial piece of work on a mathematical subject.

Learning outcomes: knowledge and understanding; skills and other attributes

At the appropriate level students will be able to demonstrate:

- Competence in the application of mathematical techniques.
- A sound knowledge of the principles underlying standard applications of mathematics.
- Knowledge and understanding of the fundamental aspects of economics (for the BSc programmes).
- The ability to think in a critical manner.
- Skill in making formal and informal inferences on the basis of quantitative and qualitative data.
- The ability to formulate and develop mathematical arguments in a logical manner.
- The ability to understand, formulate and use quantitative models arising in social science, business and other contexts.
- Skill in acquiring new understanding and expertise.
- An understanding of pure mathematics, and of the role of logical argument in mathematics.
- A good knowledge and understanding in advanced areas of mathematics, chosen by the student from a range of topics, including a high proportion relevant to economics and finance.

In addition, on completion of the MSc Financial Mathematics degree, students will be able to demonstrate:

- knowledge of the mathematical foundations of quantitative finance;
- understanding of standard and advanced quantitative methodologies and techniques of importance to a range of careers in financial institutions;
- appreciation of emerging theory and techniques in the area of financial mathematics;
- ability to address critically practical problems of a quantitative nature arising in the financial sector;
- enhanced computational skills and ability to develop numerical solutions to problems arising in finance;
- ability to formulate and develop mathematical arguments in a logical manner.

Further resources on Assessment Aims:

For a more detailed list on a course by course basis visit the LSE Course guides online for [undergraduate](#) and [MSc](#) (Masters) courses. For an overview of the educational aims of this and similar degrees see the very informative site: [QAA benchmarks](#). The official statement of the programme aims may be seen here: [Programme specifications](#). Information relating to careers can be accessed [here](#).

Registered students are provided with detailed course choice advice at the appropriate time of the year. This information is updated annually and provided on Moodle, look for "Options for Second Year Students in 20xx/xx" and the equivalent document for 3rd year students.

Section 2: Assessment process

Formative assessment, graded in level (e.g. “Very good, good, satisfactory, poor”) is provided through weekly assignments and assessments which build core skills and conceptual understanding. Feedback is principally in the form of brief comments written into the submitted work which is handed back in class and expanded by class discussion usually a week after the submission due-date; this is supported by model answers posted on Moodle and additional one-to-one discussion in office hours (which are available to students every week).

Students are prepared for summative assessments by a variety of means including some or all of: mock examination-style assignments, revision classes (which may include discussion of recent examination papers), supported by model answers and in some cases further commentaries.

The majority of summative assessment is by means of Summer Term examinations. Students sit a 3-hour paper for each full-unit module taken during the year, and a 2-hour paper for each half-unit. In both undergraduate and graduate programmes a few courses contain a small element of summatively assessed coursework. MSc Applicable Mathematics students are all required to complete a Dissertation; students in the MSc Financial Mathematics write a substantial report for one of their compulsory courses. Full details of the weighting of assessed elements are published in the School's Course guides online for [BSc](#) and [MSc](#) courses. Coursework and dissertations are submitted to the School's plagiarism detection software.

Students are all provided, in their annual [handbooks](#), with general guidelines in the Section entitled *Assessment criteria*. These provide broad descriptions of the meaning of marks awarded on our examinations. Programme regulations, course guides, School and academic regulations and a variety of support resources are listed at <http://www.lse.ac.uk/resources/calendar/>.

Depending on the level and objectives of the module, examinations are designed to test some, or all, of:

- knowledge of the subject matter, terminology and conventions covered in the course, understanding of the underlying principles,
- skill in analysis and interpretation of data,
- the ability to prove or derive mathematical results,
- problem-solving skills,
- the ability to apply knowledge and skills in new contexts,
- the ability to express arguments clearly and accurately.

Students select some modules from other departments, and thereby may experience variety in teaching and assessment methods.

The Department updates and distributes detailed documentation on Examination Procedures each year to all staff involved in examinations. This addresses matters such as detailed Marking Schemes and various forms of scrutiny (by Checkers, Second Examiners, and External Examiners). This documentation guarantees reliability and robustness, as do processes such as scrutiny meetings and standardisation meetings for dissertation markers.

Further resources on the Department's Assessment process:

- Detailed assessment criteria for Mathematics examinations are made available to students in their annually updated and distributed [student handbooks](#).
- A summary of the Department's assessment processes is published online on the Departmental Website, see “[Marking the examination](#)”.
- BSc courses and degrees in the Department conform to the description in the QAA ‘[Subject Benchmark Statement for Mathematics, Statistics and Operational Research](#)’ which sets out the expectations for any undergraduate degree course in the UK in these subjects.

Section 3: Feedback approach

Feedback is part of learning – providing ideas and information about how to improve work. It is a dialogue between students and all those other people they come across in their learning who help them to develop and understand ideas. It is a joint responsibility: students need to be active agents, not passive recipients.

Students are expected to attend two lecture-hours and one related class for each (Mathematics) course per week (this usually results in attendance at eight lecture-hours and four classes per week in total). In addition, there are exercises to undertake in the student's own time which are discussed in the weekly classes. The main way we give feedback is (a) in returning graded work with comments, weekly, (b) in discussing problems in weekly classes, and (c) in individual discussions during office hours of teaching staff.

Feedback provided by the Department helps students to improve the particular assignment they are working on. It gives useful pointers for subsequent work and helps them to understand the criteria that will be used to assess them in essays and exams where the grade counts towards their final degree result.

Students receive feedback, depending on the module, on: course essays, class presentations, problem sets, contributions to class discussions, participation in Moodle discussion forums, questions raised in lectures or online (Moodle fora), group projects, dissertation outlines, mock examinations, 'exam type' assignments and tests, work overall throughout the term. All class teachers are briefed about their marking and other feedback responsibilities and deadlines. Class teachers are provided with guidelines for assessment of the level achieved in weekly "homeworks". This is particularly observed where there is a large teaching team for one course, where solutions to homeworks are subsequently published. Completion and timeliness of feedback to students is monitored by dedicated administrative staff in consultation with the course lecturer. Quality of teaching is monitored internally by a comprehensive departmental class teacher observation scheme, and by a School wide questionnaire mechanism administered by the Teaching Quality Assurance and Review Office TQARO <http://www.lse.ac.uk/intranet/LSEServices/TQARO/Home.aspx/>.

Each student is allocated a member of staff as Academic Adviser. Among the duties of the Adviser is to give broad advice to individual students including a discussion of progress reports from classes, help with understanding any other feedback the student receives, and on choosing options to match their needs and interests. (See [Academic Regulations](#)).

Further resources on feedback: [Making feedback work for you](#) (PDF, LSE TLC) Information on study skills is provided on the web: general information from the Teaching and Learning Centre pages and information specific to mathematics courses via the Department's website. Advice on how to make the most of the resources made available may be found in the annual Student Handbooks.

Section 4: Communication strategy (how the Department will communicate this strategy to students and to other departments)

Guidance on the assessment and feedback arrangements is provided in general terms in Departmental handbooks, items on the Departmental webpages and at induction meetings, and in terms of individual course unit level on course-pages on Moodle, course-unit booklets, and directly both in regular lectures and classes, and in specially arranged revision classes. Students are also given the opportunity to discuss assessment and feedback in their termly SSLC meetings.

Departments with which we collaborate are consulted and informed, as appropriate, whenever a change or innovation is planned for any Mathematics course. We encourage representation from other departments whenever relevant, for example, at meetings of the SSLC, and at options meetings.