

Programme Specification

MSc Medical Statistics

LONDON
SCHOOL of
HYGIENE
& TROPICAL
MEDICINE



For prospectus details about the programme, please see www.lshtm.ac.uk/prospectus/masters/msms.html

AWARD DETAILS

Title and name of final award(s)

Master of Science (MSc) Medical Statistics

Certificates awarded for the degree will state the following:

{Name}, having completed the approved course of study and passed the examinations has this day been admitted by *The London School of Hygiene and Tropical Medicine* to the University of London Degree of MSc Medical Statistics.

Level of the programme

All modules and awards offered under the programme are at Level 7 (also known as 'M' Masters level) of the Framework for Higher Education Qualifications in England, Wales & Northern Ireland (FHEQ).

For further information, please see

www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/FHEQ08.pdf

Relevant QAA subject benchmark

Not applicable

For more information on subject benchmarking, please see

www.qaa.ac.uk/AssuringStandardsAndQuality/subject-guidance/Pages/Subject-benchmark-statements.aspx

Awarding body:

University of London

- **Registering body:** The London School of Hygiene & Tropical Medicine (LSHTM)
- **Examination body:** The London School of Hygiene & Tropical Medicine (LSHTM)

For more information on LSHTM and the University of London, please see www.lshtm.ac.uk and www.lon.ac.uk

Accreditation by professional or statutory body (if applicable)

Royal Statistical Society

www.rss.org.uk/

Language of study and assessment

English

Please see 'English language requirements' further below regarding the standard required for entry.

ADMISSIONS INFORMATION

General entrance requirements

Applicants must normally satisfy LSHTM's general entrance requirements and additional programme-specific entrance requirements to be considered for admission. Applications must be submitted in accordance with the procedures and deadlines given in the web-based or printed prospectus.

- The normal **minimum** entrance qualification for registration is **at least** a second-class Honours degree of a UK university, or an overseas qualification of an equivalent standard, or a registerable

qualification in medicine, dentistry or veterinary studies appropriate to the programme. Applications with an appropriate technical qualification, or equivalent qualification and experience from overseas, are also welcomed.

- For the MSc Medical Statistics it is preferred that students should normally have obtained a mathematically-based first degree which includes some statistics. Graduates from other fields who have quantitative skills and some familiarity with statistical ideas may also apply.
- Any prospective student who does not meet the above minimum entry requirement, but who has relevant professional experience, may still be eligible for admission. The Registry can advise on eligibility to apply in such cases.

For further information, please see www.lshtm.ac.uk/prospectus/howto/applforstudy.html

English language requirements

It is essential to have an excellent command of the English language to benefit from studying for the programme. All students will be required to obtain an acceptable score in an approved English language test if their first language is not English or if their studies at university have not been conducted wholly in the medium of English. Any English language tests must have been taken no more than two years before the date a student commences the programme. LSHTM may also request that an applicant take a test even if the above conditions have been met.

Acceptable tests and scores are as follows:

<u>Test</u>	<u>Minimum overall score</u>	<u>Minimum in written component</u>
IELTS General/Academic *	7.0	7.0
Pearson Test of English (PTE Academic)	68	68
TOEFL Computer	250	5.0
TOEFL Internet	100	24
TOEFL Written	600	5.0

** Regarding IELTS: in addition to a minimum 7.0 in the written component of the test, students **must** achieve a minimum score of 5.5 in each of the other three components (listening, reading and speaking).*

For further information, please see www.lshtm.ac.uk/prospectus/english.html

Financial requirements

All students are required to have sufficient funds to cover programme tuition fees, living expenses and any travel and project costs for the duration of their studies. Tuition fees are payable in full on registration. The School is not able to provide financial assistance to any student whose funds prove to be inadequate at any stage during the programme. Students offered admission will be required to sign a financial declaration form confirming that they understand this situation and will have sufficient financial support for the duration of their studies. Evidence of available funds may be required.

For up-to-date information on fees and costs, please see www.lshtm.ac.uk/prospectus and click on 'Tuition fees'.

Students with disabilities (including dyslexia and mental health issues)

LSHTM welcomes applications from students with disabilities – which may include sensory impairment (visual/hearing), mobility or dexterity impairment, chronic medical conditions (e.g. diabetes, HIV, epilepsy, asthma) or chronic pain/fatigue, mental health difficulties, specific learning difficulties (e.g. dyslexia or dyspraxia), Aspergers Syndrome and other autism spectrum disorders, or any other condition which has a long-term and adverse effect on studying.

The School aims to offer as much appropriate assistance as possible to accommodate individual needs, and will take all reasonable steps to ensure that both the application procedure and the programme itself are organised and delivered to offer all students the opportunity to participate fully.

Applicants are encouraged to disclose any specific disability at the time of application (via the 'Equal Opportunities' and 'Investigating Access' forms), and let the Registry know if anything further can be done to make the application and selection process as accessible as possible. This helps the School to ensure that applicants' specialist needs can be understood, and any obstacles minimised, throughout the application and admission process.

Once registered, the School can provide specific support to students with disabilities throughout their studies. Students are encouraged to disclose any disability from as early as possible; the Student Adviser can answer queries and provide confidential advice at any point. Any special arrangements, for example regarding examinations, may be made via the Student Adviser.

Please see further information at www.lshtm.ac.uk/prospectus/disability. Applicants should e-mail registry@lshtm.ac.uk with any specific queries. Registered students should contact disability@lshtm.ac.uk

Intake quota

There is no specific intake quota for the programme, but numbers admitted each year are limited. All applications for places are reviewed for selection for interview in the order in which they arrive. Prospective students are therefore encouraged to apply as early as possible, as admittance to the programme may close up to several months ahead of the start of each new academic year. Applicants wishing to be considered for School scholarships are advised to apply as early as possible.

For information about sources of funding and scholarships, please see www.lshtm.ac.uk/prospectus/funding

PROGRAMME AIMS AND OBJECTIVES

Educational aims of the programme

The aim of the programme – consistent with LSHTM's mission to improve health worldwide – is to train students from a variety of academic backgrounds to work as statisticians in various sectors including higher education, research institutions, the pharmaceutical industry, central government and national health services. It provides a training in the theory and practice of statistics with special reference to clinical trials, epidemiology and clinical or laboratory research.

For further information, please see www.lshtm.ac.uk/prospectus/masters/msms.html

Learning, teaching and assessment methods

The programme is taught through a variety of teaching methods including: lectures, small group seminars, practicals, and groupwork with peers. All elements of the programme have specific learning objectives, with content designed to help students achieve these outcomes. Students are expected to learn through both directed and self-directed study.

The programme is assessed through individual module assessments (which may include essays, other written coursework, short written exams, practical exams, groupwork, presentations or other methods), formal summer exams, and a project report. Such tasks are designed to assess, via the most appropriate method, whether learning objectives have been met.

For further information, please see www.lshtm.ac.uk/edu/qualityassurance/qualitymanagement.html

Learning outcomes

By the end of the programme, students will be expected to achieve the following learning outcomes – drawing on material taught across different elements and assessed in a variety of ways.

<u>Learning outcome</u>	<u>Programme element</u>	<u>Assessment methods</u>	<u>Other points to note</u>
(i) Select appropriate study designs to address questions of medical relevance	Basic Epidemiology (2001); Clinical Trials (2033) plus optional modules selected in Terms 2 and 3 (e.g. Epidemiology of Non-	Unseen exams In-course assessment	

	communicable Diseases (2407)		
(ii) Select and apply appropriate statistical methods for analysing data typically encountered in medical applications, including binary, categorical, count, quantitative data; survival data; hierarchical data; data affected by measurement error and missingness	Foundations of Medical Statistics (2038); Robust Statistical Methods (2475); Generalised Linear Models (2462); Survival Analysis and Bayesian Statistics (2463); Statistical Methods in Epidemiology (2402); Analysis of Hierarchical and Other Dependent Data (2465); Advanced Statistical Modelling (2450).	Unseen exams In-course assessment	Feedback from in-course assessment and the supervision received for the completion of the Project Report contribute towards this
(iii) Use a range of software packages for statistical analysis and data management	Introduction to STATA & SAS (2031); Foundations of Medical Statistics (2038); Robust Statistical Methods (2475); Generalised Linear Models (2462); Survival Analysis and Bayesian Statistics (2463); Statistical Methods in Epidemiology (2042); Analysis of Hierarchical and Other Dependent Data (2465); Advanced Statistical Modelling (2450).	Informal assessment	Project Report
(iv) Interpret correctly the results of statistical analyses and critically evaluate the use of statistics in the medical literature	All modules	Unseen exams In-course assessment Project Report	In-course assessment, feedback from in-course assessment and the Project Report supervision all contribute to this
(v) Communicate effectively with other statisticians and the wider medical community, including the ability to present results of statistical analyses through written and oral presentations	Students' talks; Project Report	Project Report	
(vi) Understanding the principles behind statistical methods to allow future adoption and appreciation of new methodology, to develop problem specific solutions to new problems, and to provide a basis for the understanding of limitations and issues surrounding currently used methods	All modules	In-course assessment	Modules are constantly updated to match methodological developments

For further information, please see the programme handbook.

Distinctive features of the programme

The mission of the School is to contribute to the improvement of health worldwide through the pursuit of excellence in research, postgraduate teaching, advanced training and consultancy in international public health and tropical medicine. The School has been active at the highest level in this for many

years and has one of the largest groups of epidemiologists in the world.

For further information, please see www.lshtm.ac.uk/prospectus/masters/msms.html

LEARNING TIME

Modes of study and duration of study

The main part of the programme is taught 'face-to-face' at LSHTM in London.

After the end of formal teaching in May, the final part of the programme is a period of up to three months intensive project work.

The programme may be taken on a full-time or part-time basis, as follows:

<u>Mode</u>	<u>Standard period of registration</u>	<u>Maximum period of registration</u>
Full-time (involves attending the School five days each week during term-time)	49 weeks	2 academic years
Part-time (involves attending the School at least two days each week during term-time)	1 year 49 weeks	3 academic years

The standard period of registration is also the minimum. Any exemptions from this must be agreed on an individual basis.

Mode of study information is also given at www.lshtm.ac.uk/prospectus/mode_study.html

Estimated number of study hours

The programme comprises a total of 1,800 notional learning hours (180 UK credits at Masters level), based on a mix of contact teaching time, directed study, and self-directed study time plus assessment.

- It is generally expected that full-time students will spend on average 35-40 hours a week on study, including face-to-face sessions and private study. During term-time, each week will typically include 30 hours of contact time within the School and 10 hours of self-directed study.
- Part-time students usually study approx. 18-20 hours per week over two years, including face-to-face sessions and private study. During term-time, each week will typically include 15 hours of contact time within the School and 5 hours of self-directed study.

For further guidance on study patterns, please see the programme handbook.

CREDIT AND ASSESSMENT REQUIREMENTS

Credit scheme

The programme operates a credit system which is consistent with the Higher Education Credit Framework for England, and compatible with the European Credit Transfer and Accumulation System (ECTS). LSHTM credits are awarded for successful completion of modules and the project – all of which are at Level 7, Masters level, of the Framework for Higher Education Qualifications in England (FHEQ).

Award of the MSc degree is based on successfully obtaining 180 credits in total, equivalent to 90 ECTS credits. It is normally required that all credits be obtained from approved LSHTM modules.

Further information about the credit systems used by universities in the UK and Europe is available in:

- The Higher Education Credit Framework for England, www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/creditframework.pdf
- The Framework for Higher Education Qualifications in England, www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/FHEQ08.pdf
- The European Credit Transfer and Accumulation System, <http://ec.europa.eu/education/lifelong-learning->

Assessment

Assessment at LSHTM uses a Grade Point Average (GPA) scheme, running from 5 (excellent) to 0 (very poor fail) and with a pass threshold of 2 (satisfactory).

For students who have obtained sufficient credit and are hence due an award, degree classifications of Pass or Distinction are determined by combining grades from modules, exams and the project to calculate a degree GPA.

Details of how degree GPA is calculated, and the GPA required to obtain a Distinction, are given in the detailed award scheme for the programme at intra.lshtm.ac.uk/registry/regulations/taught_regulations/

Programme components and requirements

The programme is split into 3 major assessed components:

<i>When</i>	<u>Term 1 (Oct-Dec) plus summer exams</u>	<u>Terms 2 & 3 (Jan-May)</u>	<u>Term 3 (June-Sept)</u>
<i>What</i>	A range of taught modules of different sizes	5 individual taught modules	Research project
<i>Credits</i>	60 credits (awarded as a block)	75 credits (15 credits per module)	45 credits (a single piece of work)
<i>Assessment</i>	Unseen written exams in the summer (Papers 1 & 2) plus 6 short projects in Term 1.	In-course assessment for each module	Project report (50 pages)
<i>Grades to be awarded credits</i>	Marks required: Papers combined = ≥ 2 , with Paper 1 = ≥ 1 and Paper 2 = ≥ 1	A minimum mark of 2 is required for each module; one module with a mark of 1 to 1.99 can be compensated provided the combined GPA for the 5 modules is ≥ 2	A minimum mark of 2 is required.

Further general information about MSc programme structures is given at www.lshtm.ac.uk/prospectus/masters/masters.html

CALENDAR AND CURRICULUM

Study calendar

The academic year is broken up into three terms. Students are also expected to continue their studies (through reading, revision etc.) during the breaks between terms.

Term 1 (Autumn) runs from September to December (12 weeks total).

- There is a compulsory orientation and induction week for new students at the very beginning of the term.
- Formal module teaching then runs for 5 weeks, followed by a Reading Week in early November (which may include some specific programme-level sessions), then a further 5 weeks of module teaching.

Term 2 (Spring) runs from January to March (11 weeks total).

- In the first 5 weeks, two modules are taken; one in the 'C1' slot running from Monday through to Wednesday morning, and one in the 'C2' slot running from Wednesday afternoon through to Friday.
- This is followed by a Reading Week in early February, which may include programme-level

sessions.

- In the next 5 weeks, two more modules are taken; in the 'D1' slot running from Monday through to Wednesday morning, and in the 'D2' slot running from Wednesday afternoon through to Friday.
- Student talks: students are required to give a short presentation in which they describe and critique an article from a medical journal. This normally takes place in Term 2.
- Visits to and from potential employers are arranged during Terms 2 and 3.

Term 3 (Summer) runs from April to September (5 weeks teaching, 2 weeks run-up to examinations, plus approximately 11 further weeks intensive project work).

- In the first 5 weeks, a final module is taken in the 'E1' slot running from Monday through to Wednesday morning; the rest of each week is set aside for revision, programme-level sessions and project work.
- After teaching finishes, there is a short gap for final revision ahead of exams in late May or early June.
- After the exams, project work should take place in earnest over the period from June to August, with a project report hand-in date at approximately the beginning of September.

Specific term dates are available at www.lshtm.ac.uk/aboutus/termdates ; more detailed guidance and deadlines are given in the programme handbook.

Modules

Modules are taken over all three terms. Those available through the programme are categorised as either compulsory (core modules), recommended (obvious choices highly relevant to the programme) or optional (alternative modules which may be more relevant to individual students' interests).

<i>Term</i>	<i>Compulsory modules</i>	<i>Recommended modules</i>	<i>Optional modules</i>
Term 1	<ul style="list-style-type: none"> • Basic Epidemiology • Clinical Trials • Foundations of Medical Statistics • Introduction to STATA and SAS • Robust Statistical Methods 		
Term 2, C1 slot	<ul style="list-style-type: none"> • Generalised Linear Models 		
Term 2, C2 slot	<ul style="list-style-type: none"> • Statistical Methods in Epidemiology 		
Term 2, D1 slot		<ul style="list-style-type: none"> • Analysis of Hierarchical & Other Dependent Data 	<ul style="list-style-type: none"> • Epidemiology of Non-Communicable Diseases • Modelling & the Dynamics of Infectious Diseases • Social Epidemiology
Term 2, D2 slot	<ul style="list-style-type: none"> • Survival Analysis and Bayesian Statistics 		
Term 3, E-slot		<ul style="list-style-type: none"> • Advanced Statistical Methods in Epidemiology • Advanced Statistical Modelling 	

In addition:

- Training sessions covering areas like introduction to computing, basic maths skills, English for

academic purposes, using library resources, study skills and more are offered during the programme of the year (most being available from early in Term 1).

- Students are encouraged to attend the Global Health Lecture Series which runs weekly during term-time in Terms 1 and 2.

Further details about modules are given in the programme handbook and in the LSHTM-wide module handbook available at www.lshtm.ac.uk/prospectus/msc_module_handbook

Formal summer examinations

The formal examinations held in Term 3 consist of two unseen written examinations, known as Papers 1 and 2. Each exam lasts three hours. Paper 1 primarily examines specific content from Term 1 teaching, while Paper 2 tests the ability to integrate knowledge acquired from across the whole of the programme.

Further details about summer exams are given in the programme handbook.

Project report

As the last major component of the programme, students undertake a research project on a relevant topic – assessed through a written-up report. This usually consists of analysing a set of data and writing a report, but methodological research can also be undertaken. The project should be an independent piece of work, appropriately guided and supported by a supervisor and other relevant staff. The topic should be selected and a project proposal drawn up by the end of Term 2, for approval by the supervisor or personal tutor. Substantive work, including any travel or fieldwork, should start after the exams in the summer. The final report, to be submitted at the beginning of September, should be up to 50 pages in length.

Criteria and further details about projects are given in the project handbook for the programme.

STUDENT SUPPORT, GUIDANCE AND RESOURCES

Student charter

LSHTM has a student charter which summarises the standards of service the School expects and aspires to offer students, as well as the standards of conduct which students should expect and aspire to follow in turn. Students and prospective students are encouraged to read this.

The LSHTM student charter is available at www.lshtm.ac.uk/edu/qualityassurance/student_charter.pdf. A general summary of support and services offered to students is given at www.lshtm.ac.uk/prospectus/servsupp.html

The student community

All students on the programme are members of the LSHTM Student Representative Council (SRC). The SRC provides a focus for student opinion and identity across LSHTM, through representation on committees and by acting as a link between staff and students. In addition, the SRC organises LSHTM-wide social and sporting events. Students are also able to use the facilities of the University of London Union (ULU).

Students on the programme elect representatives to liaise with staff and help communicate student views, as well as to help arrange social activities.

For further information, please see www.lshtm.ac.uk/src and www.ulucol.ac.uk

Personal tutors

Students on the programme are allocated a personal tutor who can provide both academic guidance and more general support or pastoral care. The personal tutor relationship is not about direct teaching – although tutors can recommend or arrange for their tutee to see other specific members of staff regarding specific academic matters. Personal tutors mainly act as a point of contact to discuss

practical issues or questions regarding the programme, such as module choices or project selection, or as a first-line sympathetic ear for personal problems.

Further details about personal tutoring arrangements are given in the programme handbook.

Student advice and counselling

The Student Advice & Counselling Service offers advice and support for any practical or emotional issues students may experience during their time at LSHTM. The Student Adviser can offer impartial advice on a range of issues including accommodation, financial concerns and immigration. The Counsellor is available to talk to any student who is experiencing anxiety or stress, study-related or otherwise.

All appointments with the Student Adviser or Counsellor are strictly confidential, and no information volunteered by a student will be passed on to anyone else without permission.

For further information, please see <http://intra.lshtm.ac.uk/studentadvice>

Healthcare

LSHTM students can register with the Health Centre at 20 Gower Street (next to the main building), which offers an NHS GP (general practitioner) medical service and also a counselling service. Students who are not registered as patients can also access the services of the Health Centre during normal working hours.

For further information, please see www.gowerstreetpractice.org.uk

Learning resources and facilities

Students on the programme have access to comprehensive library and IT (computing) resources and facilities, as well as many other standard facilities such as the Refectory, common rooms, etc.

For further information, please see www.lshtm.ac.uk/library (Library) and www.lshtm.ac.uk/its (IT Services)

English language support

While all students are required to demonstrate English language proficiency in line with the School's minimum requirements in order to be accepted on the programme, LSHTM provides free 'English for Academic Purposes' classes aimed at students whose first language is not English and who would like further support in adjusting to the demanding standards of postgraduate university study in Britain.

For further information, please see intra.lshtm.ac.uk/edu/taughtcourses/studentresources/english.html

Further learning support

In addition to programme-level activities and academic support from personal tutors and teaching staff, LSHTM offers specific training sessions in areas such as basic maths skills and introductory-level computing. A series of study skills workshops are held throughout the year on topics such as effective reading and coping with exams. Students with disabilities such as dyslexia should contact the Student Adviser for appropriate guidance and support.

For further information, please see www.lshtm.ac.uk/edu/studyskills.html . Please also see earlier sub-section on 'Students with disabilities' regarding disability support.

Careers advice and resources

The School's Careers Service can provide confidential advice and guidance appropriate to the diverse needs of students at the School, from those with established careers who wish to change direction to those who have come from their first degree and are looking to establish a career. Advisers can assist on an individual basis (including help with career planning, CV writing and interview technique), in small groups, or through School-wide events (arranging regular careers fairs and forums, talks by speakers from relevant organisations, and workshops on essential career skills).

The on-site Careers Centre offers a central reference point for job vacancies, careers information and literature and employer information. The LSHTM Careers Service is also part of the Specialist Institutions' Careers Service (SICS) of the University of London Careers Group, and students can access their even more extensive resources.

For further information, please see www.lshtm.ac.uk/careers and www.careers.lon.ac.uk

PROGRAMME QUALITY

Quality evaluation and enhancement

The programme is subject to LSHTM's rigorous quality assurance processes, including both standard annual monitoring and an extensive special review every five years.

As students reach the end of the programme, they are asked to give specific feedback both via class discussion sessions and an end-of-programme survey. Feedback on other topics, including the content of specific modules as well as more general issues like Library facilities, will also be sought at intervals throughout the period of study. Such feedback is anonymised, analysed, discussed and followed up by appropriate committees and functions within the School.

Operation of the programme itself is overseen by a dedicated committee. A range of further LSHTM committees and functions are responsible for identifying and resolving any problems, improving programme quality and enhancing the student experience on an ongoing basis.

For further information, please see www.lshtm.ac.uk/edu/qualityassurance

AFTER GRADUATION

Possible routes to further study

Successful completion of the programme may serve as excellent preparation for students who wish to go on to take a higher degree, such as a PhD, DrPH or MPhil – whether to be undertaken at LSHTM or elsewhere.

For further information on research degrees at LSHTM, please see www.lshtm.ac.uk/prospectus/research

Possible graduate employment routes

The programme is suitable for those aiming for careers in medical and epidemiological research, the pharmaceutical industry and various governmental institutions.

For further information, please see www.lshtm.ac.uk/careers/resources/graduate_destinations.doc

The Alumni Association

Membership of the LSHTM Alumni Association is free and open to all former students of LSHTM. This is a diverse community of over 15,000 alumni in more than 180 countries, including local chapters, and with regular events, communications and opportunities to meet fellow alumni in many different parts of the world. The Association aims to provide past students with lifelong links to the School and each other, and is keen to foster a vibrant and active alumni community. All alumni are encouraged to register their details and participate further.

For further information, please see www.lshtm.ac.uk/alumni or email alumni@lshtm.ac.uk

ABOUT THIS DOCUMENT

This programme specification applies for the academic year 2011-2012

Last revised 28/07/2011 by Tim Collier

This Programme Specification has been developed in line with the nationally agreed reference points for assuring the quality and standards of higher education in the United Kingdom, known as the Academic Infrastructure. For further information, please see www.gaa.ac.uk/AssuringStandardsAndQuality/Pages/default.aspx