

The LSE logo consists of the letters 'LSE' in a bold, white, sans-serif font, enclosed within a white square. The background of the entire cover is black, featuring a repeating pattern of colorful, abstract circular designs. Each design is contained within a circular border made of small, multi-colored segments. The designs inside the circles include various mathematical and scientific motifs, such as fractal-like patterns, radial lines, and abstract shapes in vibrant colors like red, green, blue, and purple.

Department of
Mathematics

**Welcome to the
Department of Mathematics**

MPhil/PhD in Mathematics Handbook

lse.ac.uk/mathematics

Look after yourself. Look after others.



Wear a mask



Wash or sanitise
hands regularly



Keep a safe distance and
follow advice on campus



Cover coughs
and sneezes



Use learning
spaces safely



Let LSE know if
you feel unwell

Do you have symptoms?



High temperature, fever
shaking or chills



Loss of sense of smell, taste,
or breathing difficulties



Dry cough

Get a COVID-19 test, DO NOT go out
and you MUST self-isolate for ten days.



SCAN ME

Thanks. Together we help make LSE COVID-secure.
Campus safety, testing information and more: lse.ac.uk/coronavirus

Contents

Term Dates and LSE Closures	4
Welcome from the Head of Department	5
Key Staff	6
About the Department	7
Departmental Facilities	8
New Arrivals, Orientation and Registration	9
About the Programme	11
General Guidance from the DPD	13
Research Training	15
Skills Training	17
PhD Overview: Year by Year	19
Attendance, Vacations and Research Travel	24
PhD Academy	26
Study and Research Regulations	27
Financial Support and Funding	29
Student Representation	31
LSE Services to Support You with Your Studies and in Your Career	32
Equity, Diversity and Inclusion (EDI)	36
Codes and Charters	37
Systems and Online Resources	38
LSE Campus Map	39

Term Dates and LSE Closures

Academic Year 2021/22

Michaelmas Term (MT)

Monday 27 September – Friday 10 December 2021

Lent Term (LT)

Monday 17 January – Friday 1 April 2022

January Exam Period: Monday 10 – Friday 14 January 2022

Summer Term (ST)

Tuesday 3 May – Friday 17 June 2022

Summer Exam Period: Monday 9 May – Friday 17 June 2022

Christmas Closure

Thursday 23 December 2021 – Monday 3 January 2022

Easter Closure

Thursday 14 – Wednesday 20 April 2022

May Bank Holiday: Monday 2 May 2022

Spring Bank Holiday: Thursday 2 and Friday 3 June 2022 (including an extra day for the Queen's Platinum Jubilee)

Summer Bank Holiday: Monday 29 August 2022

Statement on Dates and Vacations

When you register for a research programme, you are expected to reside within the UK to attend supervision meetings and taught courses at LSE. In exceptional circumstances, the Research Degrees Subcommittee Chair might permit you to reside outside of the UK during the final stages of your research.

For full-time students, you will be registered for a maximum of four years, until you submit your thesis for examination. Part-time students are registered for a maximum of eight years.

For all registered research students, **vacations are the Christmas and Easter breaks** in each year of registration. You are considered a registered student, continuing your studies during each summer vacation; therefore **this is not vacation time**. You can request one short vacation (of up to 4 weeks) during each summer vacation in years 1 - 3 (or 1 - 7 if part time). This does not normally apply in the summer of your final year when you are expected to be completing your thesis for submission. Vacations during the summer must be negotiated with your supervisor and Doctoral Programme Director in good time before you plan to leave. Agreed vacation periods should be notified to the Research Manager and the **PhD Academy**. If additional vacation periods of this kind are granted to you, this cannot then be used as a reason for needing to extend your maximum period of registration in order to complete your thesis.

Welcome from the Head of Department

Welcome to the Department of Mathematics at LSE.

By joining one of our degree programmes, you become a member of a vibrant intellectual community, comprising excellent students (BSc, MSc and PhD), world-leading faculty, experienced professional services staff, and high-achieving alumni. By taking advantage of the rich and diverse learning environment at LSE, you will further develop your talents and advance your knowledge. We want to offer a supportive and friendly environment in which everybody can fulfil their potential.

The last 18 months have been a strange period, where most of our life seems to happen online. At the time of writing (June 2021) we are hopeful this coming year we can do a major part of our teaching and support activities face-to-face on campus again. Since the start of the COVID-19 pandemic we have been designing a portfolio of activities that gives our students a rewarding and supportive learning environment. Several of the activities are aimed at making sure that you get to know your fellow students and other members of the LSE community. We strongly encourage you to engage with those activities. Not everything will be “normal” again this year, but that doesn’t mean it shouldn’t be exciting.

The Department’s teaching and research are shaped to a large extent by its position within LSE, a world-leading social sciences institution engaging with the whole world. Within this environment we view teaching and research as complementary activities, each enhancing the other, and we want to be excellent in both.

In this handbook you will find a wealth of information about your degree programme, your studies, the support the Department and LSE offer, and much more. Our website (lse.ac.uk/Mathematics) provides further and up-to-date information, including news and events, and a section for current students in the Department.

Finally, if at any point during your time with us you feel that there is something I should be aware of regarding your experience in the Department of Mathematics or at LSE (good or bad), do not hesitate to contact me, by email or in person. My door is always open, whether it’s a virtual door, or the door of my office.



Professor Jan van den Heuvel

Head of Department

j.van-den-heuvel@lse.ac.uk

Key Staff



Professor Luitgard Veraart (l.veraart@lse.ac.uk) is the Doctoral Programme Director. After your individual adviser, she is your main contact for academic queries.

Room: COL.4.11



Enfale Farooq (E.Farooq@lse.ac.uk) is the Research Manager. She is your main contact for any administrative queries.

Room: COL.3.03



Professor Jan van den Heuvel (J.Van-Den-Heuvel@lse.ac.uk) is the Head of the Department. He is responsible for all academic activities, students, staff and programmes offered by the Department.

Room: COL.3.07

Other Professional Services Staff you may need to know are:

Kate Barker – Department Manager, COL.3.14

Rebecca Batey – Postgraduate Programmes Manager, COL.3.03

Jansa Begic – Teaching Support Officer, COL.3.03

Sharon Donegal-Grant – Finance, Projects & Facilities Officer, COL.4.01

Jackie Everid – Undergraduate Programmes Manager, COL.4.01

Sarah Massey – Communications & Student Experience Officer, COL.4.01

Please check the departmental website for a full list of academic staff, their research interests, office hours and contact details: lse.ac.uk/Mathematics/people

About the Department

The LSE Department of Mathematics is internationally recognised for its teaching and research. Located within a world-class social science institution, the Department aims to be a leading centre for Mathematics in the Social Sciences. The Department's growth trajectory reflects the increasing impact that mathematical theory and mathematical techniques are having on subjects such as economics and finance, and on many other areas of the social sciences. The Department offers seven degree programmes: at undergraduate, postgraduate and PhD level.

Department Office

The Department's main office can be found on the 4th floor of Columbia House in COL.4.01. The team is available to assist with general enquiries as well as student support, submission of course work and other non-academic queries.

During a normal term time, the office would be open between:
10am – 12 noon and 2-4pm.

Postal address:

Department of Mathematics, COL.4.01
The London School of Economics and Political Science
Houghton Street
London
WC2A 2AE

Email: maths.info@lse.ac.uk

Email

The School will use your LSE email address to communicate with you so you should check it regularly. You can access this off campus using **Webmail**. If on campus, the email program Microsoft Outlook is available on all student PCs on the LSE network.

Twitter, LinkedIn, Blog & Student Hub

- You can follow the Department of Mathematics' Twitter account here: [@LSEMaths](https://twitter.com/LSEMaths)
- You can also follow our [LinkedIn page](#) and connect with our alumni community
- The Department runs a research blog: blogs.lse.ac.uk/math/

We are also on the **Student Hub app**! Our main departmental page can be found here: studenthub.lse.ac.uk/channel/56

Departmental Facilities

Research Student Study Area – COL.3.15 and COL.3.16

The Department of Mathematics has areas for research students located on the 3rd floor of Columbia House (COL.3.15 and COL.3.16). We hope these areas provide you with a comfortable working environment. We do ask you to keep the areas clean and tidy and to be respectful of your peers and individuals' work space. If you have any suggestions about how these rooms can be improved, please let the Research Manager know. You also have access to lockers in the PhD area for personal use.

Printers

All research students are able to print for free to the shared printer on the 3rd floor (named 'MAT-COL-B320' on the LSE network). An all-in-one printer/copier/scanner can be found in **COL.4.16/Kitchen**. It can scan anything from a book page (on the flat bed) to a long, double-sided document (via the feeder). When you scan something, it is emailed to any email address of your choice as a PDF file by default but there are other options. The attachment will arrive in an email from math.scan@lse.ac.uk.

Kitchens

The Department has kitchens on the 3rd and 4th floors of Columbia House. Tea, coffee and milk are provided free of charge and you can find a water cooler, kettle, fridge, coffee machine and microwave oven provided in both kitchens. A dishwasher can also be found on each floor; all members of the Department share the loading/unloading duties so please do take your turn. It is important we keep these areas hygienic and tidy.

Mailbox

Located in the 4th floor kitchen, please check your mailbox regularly. You are welcome to use the Department's address for your mail to be delivered to.

Stationery

Stationery stores are located on the 4th floor. We carry a selection of pens, notebooks, diaries, white board markers, etc. Please let the Research Manager know if you need anything that is not in stock and they will put in a new order.

Accessing the Department

Access to Columbia House, as well as all secure areas within it (e.g. 2nd, 3rd and 4th floors, PhD room, Departmental Office, etc.) is readily available from 09.00–17.30 on weekdays. Beyond this, your student ID card will provide you with access:

- 07.00–midnight during the week
- 08.00–22.00 at weekends

LSE will be closed during some periods. For details, please see the 'Key Dates' information on page 3.

Research Visitors

The Department hosts a steady stream of Research Visitors, who work with us for a fixed period of time, usually in connection with research grants awarded to the Department. Anyone based in the Department will normally be happy to discuss research with interested students so please do take the opportunity to contact them. You can find details [here](#).

New Arrivals, Orientation and Registration

Welcome Week will be your opportunity to make friends and learn more about studying at LSE and living in London. You will be invited to attend a number of events throughout the week – some of which are optional and others compulsory.

You'll also find information regarding what to expect after you arrive, how to open a bank account, what to do if you arrive early or late to LSE, crucial health information, how to set up your LSE IT account, School support services and much more [here](#). For those students joining the LSE in January of the academic year, the School holds a smaller series of orientation events.

Registration

At the start of the academic year, you will need to formally register on your programme of study with the PhD Academy. New students need to do this in person, whilst most continuing students will be able to do so online. To ensure new students are able to complete the registration process as quickly as possible, each programme is allocated a specific time slot in which to register at the beginning of the academic year. At Registration, you will be asked to provide proof of your eligibility to study in the UK in order to receive your LSE ID card. This card will, amongst other things, allow you to access your library account and to the Department outside core hours.

Each student will register initially for an MPhil programme. Such a programme will not result in examination for a PhD unless the student has been upgraded in accordance with the School's Regulations for Research Degrees (further details on this process can be found in this Handbook under "The PhD Review" section). For more registration information, including schedules, how to provide your eligibility to study in the UK and information for continuing students, please see [here](#).

Your LSE Card

Your LSE card provides access to buildings and acts as your Library card. It is important that you keep it safe and never share it with anybody else. If your LSE card is lost, stolen or damaged, you can replace it by visiting the PhD academy.

Student Status Documentation

A certificate of registration provides proof to organisations, such as council tax offices, embassies and banks, that you are registered as a current student at LSE. For more information about what a certificate of registration shows visit this [website](#). You can obtain a certificate of registration from the Student Services Centre during our opening hours (normally 11am to 4pm, Monday to Friday). The Department will not be able to produce a certificate of registration for you. If you are planning to use this document to open a bank account you will need to specify which bank it needs to be addressed to.

The Student Services Centre also offer a range of other documents to prove your student status including certificates of course choice and intermediate transcripts. Some can be

produced immediately and others need to be ordered in advance. For more information about the options available please see [here](#).

IT Account Activation

Before you can use LSE IT facilities, you need to activate your IT account, which will give you a network username, password, and email address. This will enable you to log on to the LSE network and access your email at mail.lse.ac.uk. You can activate your IT account in the library on registration day or from any LSE public computer room, in order to do this, visit this [webpage](#). If, for some reason, the activation procedure fails, go to the IT Help Desk on the first floor of the Library.



About the Programme

Departmental Orientation

New research students are given a series of orientation meetings during their first few days at LSE, at which point they will usually meet the following people:

1. **Your lead supervisor**, to discuss academic matters. Initial supervisory arrangements are made and an explanation given of the general intentions with regard to research, training and monitoring.
2. **The Doctoral Programme Director**, who will introduce you to your fellow research students and other members of the Department, and make you aware of the areas of specialisation of the academic staff.
3. **The Research Manager**, to discuss funding and departmental facilities. An introduction to the departmental responsibilities of various members of staff will also be provided, alongside information on general School orientation, School registration, use of the Library, obtaining a computer account, and other appropriate School facilities.
4. **The Departmental Manager**, to discuss graduate teaching opportunities within the Department.

Supervisors

If not already ascertained during the application process, a research student's lead supervisor will be allocated during their first few days within the Department. It is expected that the student will conduct research in an area where their lead supervisor has some expertise. It is also anticipated that the lead supervisor and student will develop a good working relationship, meeting and communicating on a regular basis.

The role of the lead supervisor is to direct the student's research programme. That will normally involve proposing an area of study, suggesting research papers or books to read, pointing out particular research problems for the student to work on, and providing detailed feedback on work done. The lead supervisor will also offer advice and guidance on how to get research published, how to prepare and give talks, which conferences to attend, and which taught courses to take. The exact nature of the lead supervisor's role will vary to some extent from student to student, depending on their needs. More formally, the lead supervisor is responsible for making regular reports on a student's progress. Once the student is ready to submit their thesis, the lead supervisor will recommend the appointment of the examiners, and arrange for the examination to take place.

Each research student is also assigned a second supervisor. This is another member of the Department, normally with research interests or expertise related to the area of the student's research. If the student's lead supervisor has limited experience of PhD supervision, then a second supervisor will be appointed who has such experience. Typically, a second supervisor will be assigned within the student's first term of registration, following consultation with the student and the lead supervisor. The second supervisor is an additional source of advice and guidance for the student. They will keep themselves informed about the student's progress, and will be able to act, in most respects, as a back-up if the lead supervisor is away from the Department for a period of time (for instance, on sabbatical leave). In some instances, a

student will consult with their second supervisor about research topics, but this is not always appropriate or necessary.

Some students in the Department have two co-supervisors instead of a lead supervisor and a second supervisor. It is possible for supervisory arrangements to change in the course of a student's studies, with the agreement of all parties, for instance if the student's research interests change or if the lead supervisor leaves the Department. In exceptional circumstances, it is possible to arrange for a specialist working outside LSE to take the role of a student's second supervisor, following a successful application to the PhD Academy.

Doctoral Programme Director (DPD)

Professor Luitgard Veraart, our Doctoral Programme Director, has overall responsibility for all aspects of the PhD programme. She appoints supervisors, approves continued annual registration and makes recommendations about any change of status (e.g. transfer from full-time to part-time, or interruption of study) and about upgrading from MPhil to PhD. She also monitors the progress of individual students, by receiving regular progress reports and, when necessary, by meeting with the student and their lead supervisor. When the DPD is also the student's lead supervisor, they may ask another member of the Department to stand in for them in this capacity (for example, the Head of Department).

The DPD is also available to give advice and guidance of a general nature: research students are welcome to approach her (for instance by sending an email to L.Veraart@lse.ac.uk at any time. If, for some reason, a student is unable to resolve an issue with the DPD, they should see the Head of Department.

Mentor

In addition to your supervisor, second supervisor and the Doctoral Programme Director, every PhD student can consult one of our PhD mentors. Mentors are Departmental academic members of staff who are not involved in your studies. You can arrange to meet with whoever you prefer by contacting them directly (or the Research Manager can arrange this on your behalf, if you prefer).

The role of a mentor is that of a trusted advisor who can provide counsel, encouragement and career advice: someone who will generally take an interest in **your** development (as opposed to your academic progress). A mentor is independent of your supervisors and takes no responsibility for performance or assessment of your progress. The 2021-22 Mentors are:

Mentor	Room	Email
Prof Julia Böttcher	COL.4.03	J.Boettcher@lse.ac.uk
Prof Andy Lewis-Pye	COL.3.12	A.Lewis7@lse.ac.uk
Prof László Végh	COL.2.02	L.Vegh@lse.ac.uk
Dr Nicola Wittur	COL.2.11	N.Wittur@lse.ac.uk

General Guidance from the DPD

This is a necessarily vague description of what conducting research in mathematics is all about, and what skills a student can expect to acquire as part of their research training. The details of the training, and of the student's experience, will inevitably vary enormously from student to student. As ever, it is imperative for a student to take responsibility for their own learning.

A PhD is awarded on the basis of a student's ability to carry out independent, original research of high quality and to submit a thesis within a maximum of four years. A research student typically grows into the role of an independent researcher, under the guidance of their lead supervisor and others within the Department, rather than first being formally 'trained' to perform research and then setting out to do it.

There is a vast amount of mathematical literature on an enormous range of topics, and a student beginning their research career cannot be expected to be familiar with even a small corner of this literature. A student should begin with some idea of what areas of mathematics they find appealing, and possibly what tools they are comfortable with, but they will normally be reliant (at least initially) on their lead supervisor for information about the frontiers of current knowledge, and about the previous work and techniques they will have to familiarise themselves with in order to tackle a specific research problem. A student should not be surprised if they find themselves devoting most of their time at the beginning of their studies to reading and understanding existing literature.

On the other hand, research requires an active willingness to 'attack' mathematical problems, which should be started early with small toy problems or variations of examples discussed in research papers. This active mode, rather than just 'learning' from the literature, should be practised early on; it is a danger to postpone this in favour of 'ever more learning', which can be an excuse not to get down to conducting research. The lead supervisor will give guidance on this. It is a known marker that a PhD will be more successful if the student has a research result of their own (which may only be small) at the end of their first year, and has not simply just passed their courses.

One of the skills that a student should acquire by the end of their studies is how to go about searching for information on a given mathematical topic, and how to appraise and assess research papers. For example, the website "Google Scholar" lists papers on a topic together with other papers which cite it, which allows students to find cross-connections beyond the references listed in the paper itself.

It is normal in mathematics, more so in some fields than others, for two or more people to collaborate in research. For a student, this will normally involve working with their lead supervisor, but sometimes they will have the opportunity to work with others as well (joint work may be included as part of a PhD thesis, provided it is declared as such). One arrangement is for the student and lead supervisor to sit together and discuss how to attack a problem in fairly general terms, working out what is likely to be true, and what methods are likely to be successful, and then for the student to try and work through the details, and report back at the next supervisor meeting.

Of course, one goal of such joint research is for the student to learn about the research methods applicable in their particular field. A general lesson is that it helps to be familiar with a wide variety of techniques, including some from entirely different branches of mathematics. During the PhD, students are strongly encouraged to broaden and deepen their knowledge of mathematics in general, partly in case what they learn is relevant to their own research, but also generally to prepare them for a career as a mathematician. As described in the "Research Training" section of this handbook, there is a formal requirement for students to take taught courses in their first year, and students are strongly encouraged to continue to attend courses in future years as well.

It is normal in mathematics for research to be published as a paper in a specialist journal. A student will learn the particular skills of mathematical writing, partly by reading papers written by others, but mostly by writing up their own results and getting feedback from their supervisors and peers. Eventually, these skills will also be put to use in writing the thesis.

Writing mathematics is a skill that needs to be learned and improved. A few rules are useful to remember always: Revise frequently and do not get attached to your writing, but consider it as the basis for the improved text (it is hard to revise a blank page). If your English needs improvement because you are a non-native speaker, take a language course as offered by LSE. Learn to use LaTeX well. Remove trivial errors such as typos, grammatical errors, or incomplete references immediately - these distract your reader (like your supervisor) and you want comments on the substance of your work, not on these errors. This is a good habit, and it always helps to make a good first impression. You will also be confident that the final form of your thesis is error-free.

By the end of the PhD, a student should have become an expert in the particular area of their research. They should have a good working knowledge of the literature, and should be keeping abreast of the latest developments in the field.

In the course of their studies, students should take the opportunity to attend seminars, workshops and conferences, and to meet with other researchers in their field. Part of the purpose of this is to learn about what problems in the area are attracting attention, and what interests other people. It is also important for a student to see their own research in a wider context, and to become part of a community of researchers. To this end, it is crucial for a research student to take every opportunity to present their own research at seminars and conferences; especially for the first few presentations, the lead supervisor will normally give advice on how and what to present in a talk.

At LSE students working towards their PhD are usually initially registered for the MPhil programme and will then be upgraded to the PhD programme after a formal review, typically once the first substantial research results have been obtained and put into writing. At the end of their PhD programme, after submitting the PhD thesis, students will be examined by two independent experts in a so-called viva. The purpose of the viva is to orally defend the submitted work and to determine if it justifies the award of a PhD.

Throughout the programme, communication between the student and the supervisor(s) is vital. The student should regularly update their supervisor on their progress and towards the end of the programme agree on a timeline for the submission of their thesis. It is the supervisor's responsibility to offer regular meetings to the students, and to provide feedback on drafts of papers and the thesis. The first supervisor will also suggest the examiners for the viva to the school.

Luitgard Veraart, Julia Böttcher and Bernhard von Stengel
Doctoral Programme Directors 2021 – present, 2018-2021 and 2012-2018

Research Training

Research training is likely to vary to some extent, dependent upon the research topic and the preferred methods of the lead supervisor. What is described below should be considered a standard minimum.

Supervisory Meetings

A research student should meet with their lead supervisor on average once a week during term-time to discuss progress. These regular meetings with the lead supervisor will constitute the major part of a student's research training on a mathematics PhD; their purpose is to review work done and to agree further work. Advice or guidance may be given regarding directed reading and in election of taught courses to be followed, as well as to participate in conferences and graduate schools, when appropriate. **All meetings must be recorded in the PhD Log**, available via LSE for You.

Student Progress Report

Two formal progress reports should be submitted to the Doctoral Programme Director each academic year; one in the Michaelmas Term and the other in the Summer Term. They should include a record of meetings with the lead supervisor, a review of work carried out, including information about any research articles that the student has produced, a review of courses and conferences attended and a brief plan of work to come. They should be signed off as a fair record by the student. In the case of first-years, the form in the Summer Term leads to decisions concerning their major review. Information on Student Progress Interviews can be found under Year One information further in the book.

Taught Courses for PhD Students

Taught courses comprise an important part of a student's training, as they are intended to provide a broader knowledge of mathematics, including areas outside of the specialised domains of a student's own individual research project. **All first-year research students are required to attend a minimum of four taught courses.** For those students working in financial mathematics this will usually comprise a number of units organised by the London Graduate School in Mathematical Finance (LGSMF). Students working in other areas of mathematics will be required to take courses from the selection offered by the London Taught Course Centre (LTCC). Lead supervisors will advise on taught course selection.

A student may, with the agreement of their lead supervisor and the Doctoral Programme Director, substitute one or more LSE Masters Course for courses offered by either the LGSMF or the LTCC. Some courses will have restricted access and you will need to apply to the department teaching the course for permission. For students joining us part-way through the academic year, some taught courses will not be available until the start of the following academic year.

There will be examinations for most of the courses offered by both the LGSMF and LTCC. Students should be aware that their Major Review, which usually takes place within the first fifteen months of registration, will take into account performance in these examinations. Where examinations are not held, students will be expected to provide clear evidence of their

attendance and achievements to their lead supervisor and the Doctoral Programme Director at the Student Progress Interview (further details on this process can be found in this Handbook under "Reviews and Upgrade from MPhil to PhD"). Evidence will take the form of feedback, certification of attendance and performance in course assessments.

Postgraduate Taught Course Choice at LSE

LSE Course Finder will help you to choose which courses to take within your programme regulations. Once you have selected your courses, you must choose all of your courses in LSE for You. Some of the courses related to your studies are Methods training, and Academic and Professional Development Courses. More information on courses can be found [here](#).

London Graduate School in Mathematical Finance

The London Graduate School in Mathematical Finance (LGSMF) is a consortium of the mathematical finance groups of Birkbeck College, Brunel University, Cass Business School, Imperial College, King's College, UCL and LSE. Its main purpose is to provide a programme of advanced courses in mathematical finance, primarily but not exclusively for first-year PhD students in the various groups.

Ideally, students will attend all modules provided by the LGSMF during the course of their MPhil/PhD studies. In a student's first year, we recommend you attend a minimum of four taught courses, to be agreed with your lead supervisor.

In general, each course will be given at the lecturer's home college. A mixture of long and short courses is offered. The duration of long courses is typically 20-30 hours across eight to ten weeks. The duration of short courses is 8-15 hours across four or five weeks (not necessarily consecutive). More information can be found [here](#).

To register on any of the courses, you should then email lgs-fm@kcl.ac.uk to register as a participant in the programme. The message should state which Department and college you are from, who your PhD supervisor is, and should be sent from your LSE email address. Please also notify Enfale Farooq (E.Farooq@lse.ac.uk) of your choices.

London Taught Course Centre

The London Taught Course Centre (LTCC) was formed to foster the training of doctoral research students in the Mathematical Sciences. Its courses cover key areas of statistics, applied mathematics and pure mathematics, with the goals of providing students with an overview of these areas. There is a wide range of expertise among the staff of the institutions currently in the LTCC consortium: UCL, Queen Mary (QMUL), Imperial College (Statistics), King's College, City, Kent, Brunel, Royal Holloway, The Open University and LSE.

The LTCC is one of six networks supported by the EPSRC. The programme has an emphasis on direct teaching and personal contact rather than distance learning – taking advantage of the excellent transport links in the London region. The programme includes modular lecture courses and short intensive courses. First-year Discrete Mathematics, Operational Research and Game Theory research students will be expected to attend four of the LTCC's basic courses, which run for five weeks each and usually take place on Monday (although exceptions may apply in individual cases; please check with your lead supervisor to confirm how many courses you should be taking). They will cover a variety of topics and be taught by staff from the different partner institutions. The courses are usually taught at De Morgan House, a few minutes' walk from the LSE. For more details, please visit this [website](#) or contact the Centre Administrator on office@ltcc.ac.uk

Skills Training

Students will be encouraged to attend appropriate conferences, both nationally and internationally. Information about summer schools, research competitions and poster/abstract calls will be publicised, and applicants will be supported by the Department. Opportunities to teach our undergraduate students and represent the Department on committees are also provided.

Student Seminar Series

The following seminar groups are intended to form an important part of a research student's formal training:

- Financial Mathematics Reading Group
- PhD Seminar on Combinatorics, Games and Optimisation

They provide students with a regular opportunity to make presentations on topics they are interested in. This may take the form of a survey of current knowledge or an explanation their own work. Your lead supervisor will be able to help guide your choice of seminar topic. The aims of the seminars are to improve students' presentation skills, to provide structure to students' research reading, to foster communication within the research group and, inevitably, to broaden their knowledge.

Attendance at the PhD Seminar on Combinatorics, Games and Optimisation is compulsory for PhD students working in the areas of discrete mathematics, operational research, game theory and probability theory; Financial Mathematics and Game Theory students are required to attend their Reading Groups. Students are expected to give at least one talk per academic term; this should not be a daunting prospect - rather than being additional workload, giving talks is an opportunity to discuss your work and progress in a responsive environment.

You can find a full list of our seminars and events [here](#).

Please note that although there are separate meetings aimed at different research areas, students are strongly encouraged to attend talks at meetings not specifically aimed at them. In addition, students will be advised to regularly attend:

- **Seminar on Combinatorics, Games and Optimisation**
- **Joint Risk & Stochastics and Financial Mathematics Seminar**
- **London Mathematical Finance Seminar Series**

PhD Workshops

We run an occasional personal development workshop for PhD students, designed to provide tailored support for specific areas of interest, such as careers, impact, final year processes, etc. You will find materials relating to these workshops in the specific 'Department of Mathematics Research Students' Moodle course.

Class Teaching

In addition to the research training provided, all our research students are offered the opportunity to teach for the Department (graduate teaching is a requirement of all LSE Studentship recipients), subject to a successful interview. This is an opportunity to acquire some valuable skills and experience, especially for those students intending to go on to an academic career (as well as to earn some additional money, if you are not an LSE Studentship

recipient). The majority of class teaching opportunities are in introductory mathematics courses; it will rarely be possible for research students to teach within their own specialised area.

LSE provides comprehensive certificated class teacher training to support new teachers. If you opt to teach, you will be provided with a copy of our Class Teaching Handbook; an extensive document detailing what we expect from our class teachers and the support you should expect from the Mathematics Department and LSE as a whole; the Handbook also provides useful guidance and advice on teaching and marking.

Women in Mathematics Seminar Series

The Department of Mathematics recognises that women traditionally have been and still are an under-represented group in Mathematics. To learn and discuss why this is the case and what can be done about it, we regularly organise Women in Mathematics Seminars. For these seminars we invite speakers to talk about their background, experiences, and sometimes research, related to the position of women studying

or working in mathematics. All members of the Department (students and staff), whatever their gender, are encouraged to attend these seminars. Announcements are made via email and on our [website](#).



PhD Overview: Year by Year

The Department expects each registered student to be able to complete a PhD within the School's four year time limit; the length of time available gives a strong indication of the amount of work required to achieve the goal of carrying out PhD-level research and submitting your thesis.

The Department has a formal process of reviews to check whether a student is on course, to provide timely guidance if not, and, ultimately, to determine whether registration may continue. If a student's studies are proceeding well, it is possible that some stages of review may be more 'light-touch' than is suggested. Each step is highlighted below.

Year One

Registration and orientation (as mentioned above) occurs in the first few weeks of your arrival. There are a variety of activities and events to get involved in. Whilst you are registered, you are expected to be in regular attendance at the LSE for workshops, seminars and supervisory meetings (usually held weekly and reported in the PhD Log). If you are going to be absent from the School for more than 2 weeks you will need to notify your Department and the PhD Academy, see page 27 for more details.

At certain times you may need to apply for a change to your student registration (e.g. study interruption). You can speak to your supervisor or the Research Manager about any questions you may have before submitting your request.

Progress Monitoring

The PhD Log on [LFY \(lfy.lse.ac.uk/portal/p/\)](https://lfy.lse.ac.uk/portal/p/) should be used to record meetings with your supervisor throughout your time at the School. You will also be able to find your submission deadline and other information on the Log. You should discuss with your supervisor how you will use the Log. The Regulations for Research Degrees set out School-wide requirements for progress review can be found [here](#).

Student Progress Interview

Towards the end of a student's first year, they will be interviewed about their academic progress by two members of staff who have not been at the forefront of the student's supervision. These might, for instance, be the Doctoral Programme Director (unless they are directly involved in the student's supervision) and the student's second supervisor. The first supervisor is encouraged to attend, as well.

One week prior to the interview, the student will be expected to provide the Research Manager with:

- a short document outlining the research problem(s) they have been or will be working on, and the progress they have made to date
- their taught course marks / attendance record to demonstrate that they have performed to at least a satisfactory level (roughly, an average of B) in their examinations.

The lead supervisor will also be asked to comment in writing on the student's progress.

The outcome of the meeting will be a decision as to whether progress is sufficient to permit re-registration for the following academic year. In addition, a statement of when Major Review will take place, and what the student needs to achieve in order to be upgraded at Major Review will be issued. In extreme cases, if progress is deemed to be wholly unsatisfactory, registration may be terminated following this meeting.

Year Two

Regarding re-registration, the Department will confirm with the PhD Academy whether or not you have met the academic progression requirements from your first year and can be re-registered for year two. The Academy will email you to confirm that either they have re-registered you automatically (which means you do not need to attend in person to do so) or to let you know that you need to visit their office with the relevant documents in order to complete the re-registration process. The rules remain the same for attendance, tier 4 visas and other regulations as they did for Year One.

Major Review/Upgrade

The timing of Major Review will vary for each student but we aim to upgrade all students between 15 months and two years from the date of their enrolment. Exceptionally, if the Student Progress Interview was wholly satisfactory, the Review may take place at the beginning of the second year, and the student upgraded to PhD status with no requirement for a further meeting. If the student was given a target of work to be completed by a certain date, then the Review should take place soon after that date, ideally conducted by the same people who attended the Student Progress Interview. If a student cannot be upgraded by the end of their second year of registration, they will not normally be permitted to re-register.

As a general guide, in order to be upgraded, a student will:

- be expected to have produced an advanced draft of a piece of work that will be suitable for inclusion as a chapter of their thesis (preferably an article submitted to a conference or published as a preprint on arXiv) – this should be sent to the Research Manager one week before their upgrade meeting.
- provide the meeting with their taught course marks / attendance record at the meeting to demonstrate that they have performed to at least a satisfactory level (roughly, an average of B) in their examinations.
- be prepared to give a short presentation (approximately 15 minutes) on what he/she has achieved.

The aim is to indicate that the student is well on track to produce a PhD with original research. However, it is acknowledged that there will be variation in expectations depending on the topic: e.g. taking into account that more preliminary reading is required in some subjects than in others.

The Regulations for Research Degrees set out School-wide upgrade requirements [here](#).

Year Three

Regarding re-registration, the Department will confirm with the PhD Academy whether or not you have met the academic progression requirements from your first year and can be re-registered for year three. The Academy will email you to confirm that either they have re-registered you automatically (which means you do not need to attend in person to do so) or to let you know that you need to visit their office with the relevant documents in order to complete the re-registration process.

Third Year Review

At the end of a student's third year of registration, students and their supervisors will be offered a progress review. This will normally be a formal meeting between the student, the lead supervisor and the Doctoral Programme Director.

For the meeting, the student will be asked to provide:

- a copy of all work produced to date
- a full statement of anticipated progress.

The outcome of the review should normally be a clear strategy and agreed timetable for completion of the thesis within a maximum of four years. If this is deemed not to be feasible, then a decision will be made on how best to proceed.

Year Four

PhD Examination

**Disclaimer: this is an informal account of a formal, regulated process. For further information, see the official LSE Regulations for the degrees of MPhil and PhD [here](#). **

The PhD (and the MPhil) is assessed on the basis of a dissertation, or thesis. This should be a sustained exposition of original research, typically around 100pp, sometimes significantly longer but with a maximum of 100,000 words. Often it will contain expanded versions of papers that are also submitted for journal publication. Your lead supervisor will advise you on when you have enough thesis material to prepare for your examination. You should be aware that, even when the material is prepared, writing the thesis will take several months.

Examiner Nomination

Your supervisor is responsible for **nominating your two thesis examiners**. At least one of the examiners is required to be external to the LSE. The examiners must not have had any involvement in your research. Your lead supervisor is expected to choose the examiners, and arrange the examination, but cannot be one of the examiners.

Examination Entry Form

At least three months before you plan to submit your thesis you should start completing the examination entry form with your supervisor. **Completed entry forms should be returned to the PhD Academy at least two months in advance of submitting your thesis:** this is to allow sufficient time for your examiners to be formally appointed (see below). If you are unable to

meet this deadline, please seek advice from a member of the Academy. Exam entry forms can be found at the link [here](#) under the 'Final year MPhil and PhD examinations' section.

Once your completed examination entry form is received, the examiner nominations will be sent to the relevant subject panel for approval. The Academy will then formally invite the examiners to act. Until the examiners have confirmed with the PhD Academy that they can act, they cannot be appointed as your examiners. Therefore, the Academy cannot send your thesis to them until that time and no arrangements for the viva examination should be agreed. Once the Academy approves all selections, your supervisor and the Research Manager will make viva arrangements. The oral exam should be held in London and should take place within three months of your examiners receiving your thesis.

Submitting Your Thesis

You will need to submit two soft-bound copies of your thesis to the PhD Academy formatted in line with the School's requirements. Details on how to format your thesis can be found [here](#) under the 'Thesis submission' section. The front pages of your thesis should contain certain information (template for thesis front pages [here](#)). IT Training (it.training@lse.ac.uk) can assist with formatting, creating a table of contents, the use of images, creating and editing tables or page numbering.

You must submit your thesis by the deadline (if you are unsure what your deadline is, please email phdacademy@lse.ac.uk). Theses that are submitted late cannot be accepted without an approved extension from the Research Degrees Subcommittee Chair. You should ensure you allow time for the final editing, printing and binding of your thesis within your deadline. If you are unable to submit your thesis (or a revised thesis) by the deadline, please see the information on applying for an extension [here](#).

You can choose to print and bind your thesis yourself or use a company to do this for you. Details on how to bind your thesis can be found [here](#) under the 'Thesis submission' section. Once the Academy has received your thesis, they will post it to your examiners and confirm with you once they have done so. If your examiners require an electronic copy of your thesis, the Academy will arrange to send this to them. Examiners are not permitted to accept a thesis, in any format, from any source other than from the PhD Academy. Once you have submitted your thesis, your registration status will change to unregistered, awaiting results (UAR).

Editorial Help with Your Thesis

You might wish to seek help from a third party in editing your thesis before you submit it for examination. You will need to read the School's [Statement on Editorial Help](#), provide a copy of it to any third party you use and declare what help you have received from a third party in the front pages of your thesis (see template for front pages of your thesis [here](#)).

Viva (Oral) Examination

Your viva examination will take place at the LSE unless, exceptionally, permission has been given for it to take place elsewhere. It should normally take place within three months of your examiners receiving your thesis. The examiners will have read your thesis, and will ask you questions about parts of it. If they are broadly satisfied, they will recommend that you be awarded the degree, but they are almost certain to demand that you make some 'minor' amendments first. These amendments should be made within three months with the amended thesis submitted to the examiners for confirmation that the amendments are satisfactory. If the examiners are not satisfied, they will tell you exactly why not, and you will

normally have a chance to re-present it in a revised form within 18 months. If the thesis is deemed to meet the relevant criteria but the oral examination fails to satisfy the examiners they can request that you re-present the same thesis and take a further oral examination within 18 months. You can find the possible outcomes from the examination at paragraphs 52 (for PhD awards) and 54 (for MPhil awards) of the Regulations for Research Degrees [here](#).

Confirmation of Your Examination Outcome

After your examination, the PhD Academy will email you to confirm the examiners' decision and give full details of what you will then be required to do. Examiners are asked to confirm their decision within two weeks of your viva and the Academy will normally email you confirmation of the examination outcome within a further two weeks. The Academy cannot confirm an examiners decision with you until they have received the relevant information from both of your examiners.

Special Arrangements for Students with Disabilities

Special arrangements can be made for examinations and assessment, if appropriate. This may include extra time to take an examination, the use of specialist equipment or an examination paper provided in an alternative format. Any student who requires special examination arrangements must contact the Adviser to Students with Disabilities and/or Dyslexia so that reasonable adjustments can be made. Applications for special exam arrangements should normally be made no later than seven weeks before the date of the student's first examination. Further information can be found on this [webpage](#).

Attendance, Vacations and Research Travel

Attendance and Absences During Your Studies

Being a full-time research student means just that: your time commitment is the same as if you were in full-time employment. There are no set 'vacations', and you are still expected to work on your research outside university term dates, although, of course, you are entitled to time off for holidays. Your goal is to carry out substantial original research and write it up as a thesis within a maximum of four years: the length of time available gives a strong indication of the amount of work you will need to put in to achieve this goal.

There are of course research-related reasons why you might need to be away from the LSE, for example to undertake field work, or a visit to another academic institution. In all of these cases, you need to apply for permission in advance of your travels.

Special considerations must be given if you plan to carry out field research in areas of the world that are subject to social or political unrest, or to areas with Foreign and Commonwealth Office warnings. You should contact the School's Health and Safety Team well in advance of your planned research trip; they will be able to provide specialist country or area threat assessments to help you make an informed decision about the viability of travelling to your destination. Please read the **Fieldwork Health and Safety Guidance** for further information.

For further information or advice, contact the Health and Safety Team by telephone: +44 (0)20 7852 3677 or email **Health.And.Safety@lse.ac.uk**

Should you wish to study at another institution for a short period whilst continuing your research programme at the School (for example, on a placement at another university) you should seek the support of your supervisors and Research Manager in the first instance.

If you are sponsored by the School for a Tier 4 student visa to study in the UK, you need to make sure you understand the conditions of your visa and are not in breach of them. You will find guidance and updates on rule changes on the **website**.

In all instances, advice on studying and researching away from LSE can be obtained from the PhD Academy and all forms can be downloaded from the **PhD Academy webpage**.

Vacations and Working While Studying

Having reasonable periods of vacation is an important part of the wellbeing of all researchers and should be a part of your overall plans towards progression and submission within the requirements and deadlines of your degree.

In each year of registration, you can take vacations during the School-wide Christmas and Easter breaks. During the summer months (which are not classed as vacation), you can request one vacation period (of up to 4 weeks) during each summer in years 1 to 3 (or 1 to 7 if

part time). This does not normally apply in the summer of your final year when you are expected to be completing your thesis for submission.

Vacations during the summer months must be agreed with your academic department, usually with your supervisors and/or Doctoral Programme Director in good time before you plan to leave. You are required to inform the PhD Academy by email of your vacation plans for approval: phdacademy@lse.ac.uk

Any agreed vacation periods longer than 2 weeks, during term time, should be notified to the Research Manager (e.farooq@lse.ac.uk) and the PhD Academy (phdacademy@lse.ac.uk).

You are likely to be offered the opportunity to work for, or on behalf of the Department. For instance, you may be offered the opportunity to teach classes, and possibly (once you have acquired some experience with teaching) to mark examinations. You may also choose to take on some paid part-time work outside LSE. This is permitted; indeed gaining some experience in teaching in particular is likely to be very beneficial for you, but studying at the LSE and completing an MPhil or PhD is intensive and demanding so it is up to you to ensure that you are not taking on so much paid work that you are unable to keep up with your research. As a rough guide, if you are spending an average of at most one day a week on non-research activities, then this is not generally a cause for concern, but you might choose to cut down at critical phases of your studies (e.g. when writing up your thesis). We recommend that all students limit work during term time to a maximum of 20 hours per week, and fewer if possible. You should also inform your supervisor and the Research Manager of any work or external task you undertake, no matter how small.

If you find yourself, for whatever reason, unable to devote yourself to full-time research, you may wish to discuss the possibility of moving to part-time status for some period, or interrupting your studies. You should talk to your lead supervisor first, or the Doctoral Programme Director.

Travel Insurance

The School's travel insurance policy covers MPhil/PhD students for travel on School business which includes going to conferences to give a paper, fieldwork, etc. It may be that you have an annual policy, which will still be of use to you for private travel; if that is the case, you are advised to claim on the

The School's policy if a problem arises on a research-based trip and to notify your other insurer that you have done so.

For use of the School's Travel Insurance Policy, you must obtain a cover note. Travel insurance is provided by LSE, please contact the Health and Safety Advice Team at Health.And.Safety@lse.ac.uk with the following information:

- where you are going (country + city)
- dates of your intended travel
- dates of the conference
- purpose of your travel (that you are presenting at a conference/seminar)

PhD Academy

Key central services relating to PhD students are united in one office - the PhD Academy, which aspires to be one of the best graduate schools for doctoral students. The PhD Academy is responsible for organising research and career development training to complement what is offered at departmental level. It is a hub for students from different disciplinary backgrounds to meet and interact, both socially and academically.

The PhD Academy is also responsible for managing degree registration and advising students and Academic Departments on rules, regulations and other issues that students face during their programme of study. It also provides support and advice to Research Council (ESRC and AHRC) funded students.

The PhD Academy works closely with other services relevant to research students, and therefore acts as an information hub, for example on financial support, visa regulations, careers advice, etc. Please do check out their **website** – they have some really useful resources, including an overview of your PhD, year by year.

English Language Support Surgeries in the PhD Academy

English Language Support Surgeries are primarily aimed at students who do not speak English as a first language, but are open to all students who may need support. Students can drop in (or make an appointment) to discuss any aspect of their PhD including:

- Issues with grammar, vocabulary or style in their writing
- Help with the language aspects (e.g. grammar or pronunciation) of speaking tasks such as presentations or vivas

See the PhD academy website for more information **here**.



Study and Research Regulations

You are advised to read through the relevant regulations as listed below as they will outline what you can expect from your programme of study and what is expected of you while you are registered at the School. You should direct any questions you have on the regulations to the PhD Academy. For all programme and regulatory information please consult the **School Calendar**.

The School Regulations (entitled Regulations for Research degrees); Programme Regulations; Appeals Regulations for Research Students; PhD Progress, Remediation and Withdrawal Policy; Statement on Editorial Help for students' written work can be found **here**.

Plagiarism

The work you submit for assessment must be your own and all source material must be correctly referenced. Plagiarism is not just submitting work with the intention to cheat. Plagiarism could occur simply as a result of failing to correctly reference the sources you have used. If you are found to have committed an assessment offence (such as plagiarism or exam misconduct) you could be expelled from the School.

Any quotation from the published or unpublished works of other persons, including other candidates, must be clearly identified as such. Quotes must be placed inside quotation marks and a full reference to sources must be provided in proper form. A series of short quotations for several different sources, if not clearly identified as such, constitutes plagiarism just as much as a single unacknowledged long quotation from a single source. All paraphrased material must also be clearly and properly acknowledged.

Any written work you produce must solely be your own. You must not employ a "ghost writer" to write parts or all of the work, whether in draft or as a final version, on your behalf. For further information and the School's statement on Editorial Help visit the **website**. Any breach of the Statement will be treated in the same way as plagiarism.

You should also be aware that a piece of work may only be submitted for assessment once (either to LSE or elsewhere). Submitting the same piece of work twice (regardless of which institution you submit it to) will be regarded as the offence of "self-plagiarism" and will also be treated in the same way as plagiarism.

Examiners are vigilant for cases of plagiarism and the School uses plagiarism detection software to identify plagiarised text. Work contained plagiarism may be referred to the Regulations on Assessment Offences: Plagiarism which may result in the application of severe penalties.

If you are unsure about the academic referencing conventions used by the School you should seek guidance from your Department, Academic Mentor, LSE LIFE or the Library as soon as possible.

The Regulations on Assessment Offences and Plagiarism can be found **here**.

Seeking Outside Help During Your Research

PhD students are encouraged to seek advice on the different aspects of their research in the form of 'peer review' (for example, by presenting at conferences). It is also legitimate for a student to seek outside help with particular aspects of their research. However, it is important that external input of this kind is not excessive. To ensure that the levels of outside help a student might seek are within acceptable norms, students should:

- discuss with their supervisor(s) any help they are considering using with any aspect of the research process
- discuss with their supervisor(s) any advice they are seeking from other departments at the School or from sources outside of the School
- credit any help received appropriately within his/her work.



Financial Support and Funding

PhD Student Research Fund

Each registered PhD student in the Department is entitled to claim up to £500 per academic year towards their research expenses relating directly to your studies, such as the purchase of books or conference attendance. Please note:

- Any claimable IT purchase over the value of £200 should be made via the IT Service Desk. Purchases made by IT Services remain the property of the School during your registration and must be returned to the School upon completion.
- Unfortunately it is not possible to arrange advance payments and therefore all payments must take the form of refunds.
- General maintenance and living costs cannot be covered by this fund.
- Students can only submit expenses whilst listed as registered students. Expenses cannot be claimed during student interruptions.

The PhD Student Research Fund operates on a cumulative year model, as follows:

- **Year 1:** £500 paid
- **Year 2:** £500 paid; able to hold up to £1000 in fund (i.e. can carry over £500)
- **Year 3:** £500 paid; able to hold up to £1500 in fund (i.e. can carry over £1000)
- **Year 4:** £500 paid; able to hold up to £2000 in fund (i.e. can carry over £1500)

PhD Student Exchange Programme

LSE has established PhD Student Exchange programmes with a small number of institutions around the world. These exchanges offer our research students a wonderful opportunity to visit another institution, to benefit from additional research resources (archival and advisory) and to experience the academic culture and professional networks of another country.

Find out more about the schemes the Academic Partnership Office offers [here](#).

Postgraduate Travel Fund

The Postgraduate Travel Fund is open to PhD students who have been invited to give a paper at the conference related to their research degree. Students will not normally be assisted with more than one conference per academic year.

Should an award be approved, it is unlikely to cover the full costs of attending the conference. Applicants are therefore encouraged to explore all other sources of funding. There are limited funds available in the Postgraduate Travel Fund and it is expected that funds will normally run out before the end of the academic year. Early application is therefore advisable, i.e. as soon as you receive an invitation to present a paper.

Completed applications should be submitted to the Financial Support Office at least two weeks before the departure date for the conference. Retrospective applications will not be considered. You will normally hear the outcome of your application within ten working days. Please speak to the Research Manager for more information. Full details of the scheme can be found [here](#).

Santander Travel Research Fund

The fund supports visits by LSE academic staff and PhD students to universities and other organisations in the Santander Universidades Network, which covers the countries comprising Argentina, Brazil, Belgium, Chile, China, Colombia, Germany, Mexico, Peru, Poland, Puerto Rico, Russia, Singapore, Uruguay, USA, Venezuela, Spain, Portugal and the UK.

There are a minimum of 12 awards of up to £2,000 each available for the 2019/20 academic year. Please speak to the Research manager for more information. Full details are [here](#).

Fees

All administration around your fees is handled by the Fees, Income and Credit Control Team.

LSE offers two options for payment of fees. You can either pay them in full prior to registration or by payment plan. If you have not paid your fees in full before you register you will be placed on a termly payment plan.

Information on how to pay your fees can be found at [here](#).

Financial Support Office (FSO)

FSO are responsible for the administration and awarding of scholarships, bursaries, studentships and School prizes.

FSO can also provide information about funds such as the Student Support fund and the LSE Access fund. You can find out more about FSO and download application forms [here](#).

FSO hold drop-in sessions in the Student Services Centre, can be contacted by phone on 020 7955 6609 or by email at financial-support@lse.ac.uk.

Cheque Collection

Some payments are made using cheques.

If you are asked to collect a cheque then you can collect it from the Student Services Centre during normal opening hours (usual 11am to 4pm, Monday to Friday). You do not need to wait for a drop-in session.

Student Representation

Student-Staff Liaison Committees and Student Consultative Fora

Student-Staff Liaison Committees (SSLCs) are one of the most important bodies in the School. Their purpose is to create a forum for students to discuss their experience, both in and outside of the classroom, with LSE staff. SSLCs are a shared, collaborative endeavour between Departments, the Students' Union, central School Services, and, most importantly, students themselves.

At the start of the year you will be asked by your department if you would like to represent your programme on the Student-Staff Liaison Committee (SSLC).

The role of an SSLC representative is central to ensuring that courses and programmes at LSE work effectively. Training will be provided for all SSLC representatives. These forums are a great way for students to make their voice heard at LSE.

Each SSLC also elects one representative to attend the relevant **Consultative Fora** which are School-level forums. Here representatives from around LSE will discuss matters that impact on students. More information, including access to minutes from SSLC's across the School can be found **online**.

Student-only Forums

LSE's Director, Minouche Shafik, holds Student-Only forums in Michaelmas and Lent terms. The forums are an opportunity for students from across the School to hear from the Director in person and gives you the chance to ask questions and share ideas. Look out for details of where and when forums will be happening on the Student Hub.



LSE Services to Support You with Your Studies and in Your Career

LSE LIFE

LSE LIFE is the place to develop the skills you'll need to reach your goals at LSE, whether it concerns your academic work or other personal or professional pursuits. LSE LIFE is here to help you find your own ways to study and learn, think about where your studies might lead you, and make the most of your time at LSE.

LSE LIFE offers:

- Hands-on practical workshops where you can get advice on key areas of university work, including effective reading, academic writing, critical thinking, managing your dissertation research, and organising your time.
- Workshops to learn ways to adapt and thrive in new or challenging situations, including the development of skills for leadership, study/work/life balance, and life beyond university.
- One-to-one appointments with our study advisers for personalised advice on any aspect of your studies at LSE, or simply to talk through your ideas for research or other projects.
- Drop-in sessions with specialists from around LSE covering areas like CV writing, English language advice, finding and referencing academic sources, and statistics support.
- A space to meet and work together with students from other courses and departments.
- Special events to take advantage of what LSE and London have to offer.

Find out more [here](#) and check out workshop materials and other resources on Moodle or just drop by – LSE LIFE is on the ground floor of the Library.

LSE Library

LSE Library holds one of the most important social science collections in the world and has all the material that you need for your studies and research.

Most items are split into collections to help you find what you are looking for:

- The course collection is located on the first floor, holding multiple copies of essential textbooks for your courses. It will have most of your required readings.
- The main collection is housed across three floors, holding wider items for social sciences research.

You can use Library Search to find books and other materials for your studies via the [website](#). Once you have found what you need, write down its location to help you find it in the Library. To borrow books, use your LSE card and the self-service machines on the ground floor. Taught students can borrow up to 20 books at any one time. You can renew your books online by logging into your Library account. If you do not return books on time, you will be unable to borrow any more until your overdue item is returned or renewed.

Academic Support Librarians provide subject expertise and personalised support. They also host workshops to help you identify, find, manage and evaluate the information needed for your studies and research. You can find out who your Academic Support Librarian [here](#).

Language Centre

Whether you are an international student looking for support with your English or want to learn or improve a language the Language Centre can help.

If English is not your first language, there are plenty of ways you can improve and practise using the English language for your academic work. English for Academic Writing courses are available for any undergraduate or postgraduate student who do not have English as a first language and would like a weekly English language class to help with academic writing for coursework.

You may be eligible to take a language, literature or linguistics course as part of your degree, As an LSE student you can also sign up for a non-degree language course at a discounted rate which your Department will contact you about in due course. As part of the LSE Language Policy, if you are a UK-EU undergraduate and you do not have foreign language at GCSE Grade C (or equivalent); you are eligible to take an MFL certificate course for free!

For more information, visit this [page](#).

LSE Careers

LSE Careers is here to help guide and support you throughout your time at LSE. We provide a range of careers services and events both online, face-to-face and through one-to-one appointments. We have a jobs board and offer bespoke services for disabled students and PhD students.

There is lots of information and support [online](#) at including:

- Information about the services offered by LSE Careers and how to access them
- Support with your career options and insight into employment sectors and recruitment processes
- CV, cover letter and application form advice and examples
- Details of what graduates have gone on to do

LSE CareerHub, our online careers portal, allows you to:

- Discover jobs and opportunities
- Book one-to-one discussions to talk about your career options and receive feedback on your applications
- Explore upcoming events including skills seminars, careers fairs and employer presentations

You can access CareerHub [here](#). Keep up-to-date with events and advice by following [@LSECareers](#).

LSE Volunteer Centre

Volunteering is a great way to help develop new skills and meet new people while making a difference and the LSE Volunteer Centre is here to inspire and empower you to volunteer for causes that you are passionate about during your time at LSE.

We work with organisations to advertise volunteering opportunities across London, the UK and internationally. Whether you are passionate about the environment or human rights or ready to change the world through campaigning or mentoring, we'll have an opportunity for you. We also know that students are busy and we run a comprehensive one-off volunteering programme to make sure you can fit it in.

Looking to meet charities? The first volunteering fair will take place on Monday 7 October and is a great opportunity to speak to over 50 representatives from some truly inspirational organisations. You can find out more, as well as the advice and support we can offer, on the [website](#) or by following [@LSEVolunteering](#).

LSE Generate

LSE Generate is the home of entrepreneurship at LSE. We aim to support and scale socially-driven student and alumni ventures, here in the UK and across the globe. We welcome all students and alumni, from those eager to develop and learn entrepreneurial skills to LSE entrepreneurs who have already launched their ventures and need support and advice from the team. Join us for our events, enter the Generate funding competition, pop by and meet us in our co-working space and access all our start-up resources for free. Discover more on the [website](#) or keep up to date with Generate news through social media, ([@LSEGenerate](#)).

Your Wellbeing and Health

Student Wellbeing Service (SWS)

SWS brings together two key student facing services; the Disability and Wellbeing Service (DWS) and the Student Counselling Service (SCS). SWS also facilitate the Peer Supporter Scheme. SWS aims to provide you with a single integrated source of help and assistance.

SCS provide a professional, free and confidential service to help you with any problems that you may be experiencing. You can speak to them about academic stresses, as well as personal and emotional difficulties. Visit the [website](#) to book an individual appointment, read about drop-in appointments or find out about groups and workshops.

DWS are the first point of contact for students with disabilities, long term medical and mental health conditions, and Specific Learning Difficulties such as dyslexia. DWS can help you to create an Inclusion Plan which is a way of putting place agreed "reasonable adjustments" to support your studies. Visit the [website](#) to find out more.

Peer Supporters give you the opportunity to talk to fellow students about anything that is worrying you. Peer Supporters are trained to offer confidential emotional support, help and reassurance. You can find out more about the scheme and arrange a chat with a Peer Supporter [here](#).

Health Care in the UK

You are likely to need to access medical care while you are at LSE, even if this is just for routine appointments. In the UK most health care is provided through the National Health Service (NHS).

You are typically eligible for free treatment on the NHS if you fall into one of the following categories:

- You are a UK resident
- You have a Tier 4 visa and have paid the immigration health surcharge
- You are an EU/EEA student with a European Health Insurance Card (EHIC)

This list is not exhaustive and was correct at the time of print. The UK Council for International Student Affairs maintains an up-to-date listing on their [website](#).

If you are unfamiliar with the NHS search for “NHS Services explained” to find out more. You are usually required to register with a local General Practitioner’s (GP) surgery before you can book an appointment. **You should register as soon as possible and not wait until you are unwell.** The nearest GP surgery is St. Philips Medical Centre who are based on the second floor of Pethick-Lawrence House. This surgery will register most LSE students. For more information about the services offered and how to register please visit their [website](#) or call 020 7611 5131. Alternatively, you can find your nearest GP by using the GP finder function on the [NHS website](#).

As well as dispensing medicines, pharmacies can also offer advice on common health problems. You do not need to make an appointment, just visit a pharmacy and ask to speak to the duty pharmacists. In an emergency you should dial 999 to call an ambulance. You can also visit your nearest accident and emergency (A&E) department at your local hospital or visit an Urgent Care Centre.

There is a lot more information about Health Care, including details about dentists and opticians, available [here](#).

LSE Faith Centre

The Faith Centre is open to students of all faiths and none. It is home to LSE's diverse religious activities, acclaimed interfaith programmes and a reflective space for all staff and students.

The Faith Centre provides a space for student faith societies to meet and worship. The Faith Centre produces a Religion and Belief Guide each year which provides information and contact details for faith groups, you can collect a copy from the Faith Centre reception on the second floor of the Saw Swee Hock Student Centre.

The Faith Centre host a range of wellbeing activities including Mindfulness, Yoga, Ashtanga Yoga and Tai Chi. The Cave in the Faith Centre is available to all LSE staff and students who need a quiet place for reflection. This space cannot be booked but is open throughout the week.

The Faith Centre runs three acclaimed interfaith leadership programmes which are your chance to explore, question and challenge religious differences and provide a unique opportunity to build relationships and challenge assumptions across faiths.

The Faith Centre Director and Chaplain to the LSE, Reverend Dr James Walters, can be contacted on j.walters2@lse.ac.uk for confidential support regardless of religious affiliation. More details can be found [here](#).

Equity, Diversity and Inclusion (EDI)

As part of the School's commitment to equality of respect and opportunity, and as set out in our Ethics Code, we are all responsible for treating everyone at LSE with dignity and respect. This entails ensuring that no one is treated unfavourably because of their age, sex, disability, gender identity, race, religion or belief, sexual orientation, marital or civil partnership status, pregnancy and maternity status, social or economic background, or their role at the School.

In practice, this means that we are all expected to:

- Treat all members of the School community fairly and with respect
- Act courageously and openly, with respect for the knowledge and experience of others
- Play our part in creating an environment that enables all members of the School community to achieve their full potential in an environment characterised by equality of respect and opportunity
- Actively oppose all forms of discrimination and harassment, including challenging and/or reporting unacceptable behaviour.

If you experience or witness bullying or harassment, please visit this [website](#) to access information on how to report an incident and reach support.

All members of the School are encouraged to complete the 'Consent Matters' module to learn about how you might positively intervene as a bystander, and to signpost anyone who has experienced any form of bullying or harassment to the support available on the [Making a Choice](#) hub.

For further advice or information, please visit the [website](#) and follow the EDI Office on Twitter [@EDI_LSE](#).

Codes and Charters

Academic Code

The LSE Academic Code, developed in partnership with LSE Students' Union, sets out what we do to deliver a consistent student experience across the School and clarifies what students can expect from their LSE education.

You can read the full code [here](#).

The Student Charter

Our Student Charter, written by students and staff, sets out how LSE's mission and ethos are reflected in the education you can expect to receive at the School, and in the diverse, equitable and inclusive community that we all contribute to and value.

The charter covers:

- Your education – what an LSE education is and how you can make the most of it
- Our community – what it means to be part of the LSE community and how to contribute
- Your future, our future – how to inspire future generations of LSE students.

You can find out more about the Charter, and read the full version [online](#).

Codes of Good Practice

The Codes of Good Practice explain the obligations and responsibilities of students and staff.

The codes set out what you can expect from your department in relation to your teaching and learning experience, including the roles and responsibilities of Academic Mentors and Departmental Tutors; the structure of teaching at LSE and exams and assessments. The codes also lay out your responsibilities and what LSE expects of you. You can find the codes of practice [here](#).

The Ethics Code

The Ethics Code details the principles by which the whole LSE community is expected to act.

The School expects the highest possible ethical standards from all staff, students and governors. The Ethics Code sets out the School's commitment to the ethics principles of Responsibility and Accountability; Integrity; Intellectual Freedom, Equality of Respect and Opportunity, Collegiality and Sustainability. You can find the Code, guidance and link to the online ethics module "Ethics at LSE" [here](#).

Research Ethics

If you conduct research you should refer to the Research Ethics Policy and procedures.

Search online for "LSE Research Ethics and Guidance" to find resources on policy, procedure, informed consent, safety, training and support. You will also find the Code of Research Conduct and its associated procedures.

If you have any questions on research ethics or research conduct please email: research.ethics@lse.ac.uk.

Systems and Online Resources

Moodle

Moodle is LSE's virtual learning environment. Most taught courses have a corresponding course on Moodle, the online learning platform used at LSE. Moodle courses contain essential resources such as lecture slides, lecture recordings and reading lists. Moodle also enables activities such as quizzes and discussion forums and allows for online assignment submission, marking and feedback. How Moodle is used is determined by the course convenor and so this may vary from course to course. LSE also provides a Moodle Archive service which provides teachers and students with a snapshot of previous year's courses.

You access Moodle by using your LSE username and password here: moodle.lse.ac.uk

Training and Development System

The Training and Development System allows you to book a place on many of the personal development opportunities offered around LSE. You can access it [here](#) using your LSE username and password.

Multi-Factor Authentication (MFA)

To add an extra layer of security for your account and data, please set up MFA [here](#).

Student Hub

The Student Hub is LSE's app, designed to help you navigate your day-to-day life at LSE. From creating or joining groups with friends/course mates, navigating campus, or following your department and other channels for upcoming events and news, it is a great way to stay involved in life on campus. Find out more [here](#).

LSE Campus



* Due to be completed September 2021.

Key

95A 95 Aldwych	LCH Lincoln Chambers	PAN Pankhurst House
ALD Aldwych House	5LF 5 Lincoln's Inn Fields	PAR Parish Hall
CBG Centre Building	32L 32 Lincoln's Inn Fields	PEA Peacock Theatre
CLM Clement House	35L 35 Lincoln's Inn Fields	PEL Pethick-Lawrence House
COL Columbia House	50L 50 Lincoln's Inn Fields	POR 1 Portsmouth Street
CON Connaught House	LRB Lionel Robbins Building, Library	QUE Queens House
COW Cowdray House	MAR The Marshall Building	SAR Sardinia House
FAW Fawcett House	NAB New Academic Building	SAW Saw Swee Hock Student Centre
KGS King's Chambers	OLD Old Building	SHF Sheffield Street
KSW 20 Kingsway	OCS Old Curiosity Shop	STC St Clement's
LAK Lakatos Building		

LSE Building	LSE Building Development	Information	Cycle Hire Station	Pedestrian Passage
--------------	--------------------------	-------------	--------------------	--------------------

All buildings have wheelchair access and lifts, except , 95A, KGS, KSW*, 5LF, 50L, POR* and SHF.
*KSW 20 Kingsway (Language Centre only), *POR 1 Portsmouth Street (Shop only).

Disabled Access

After 6.30pm, please call Security Control on 020 7955 6200 to ensure that any disabled access doors are open. Also see: [Accessibility map \[PDF\]](#) For access to 20 Kingsway, please call security staff on 020 7955 6200 to set up the portable ramp in the entrance foyer.

Access Guides to LSE buildings

AccessAble have produced detailed access guides to the LSE campus and residences, and route maps between key locations. These access guides, and route maps, are now [available online](#).

lse.ac.uk/Mathematics



Department of Mathematics

The London School of Economics
and Political Science
Houghton Street
London WC2A 2AE

E: maths.info@lse.ac.uk

T: +44 (0)20 7955 7732

**This information can be made available
in alternative formats, on request.
Please contact maths.info@lse.ac.uk**

The London School of Economics and Political Science is a School of the University of London. It is a charity and is incorporated in England as a company limited by guarantee under the Companies Acts (Reg no 70527).

The School seeks to ensure that people are treated equitably, regardless of age, disability, race, nationality, ethnic or national origin, gender, religion, sexual orientation or personal circumstances.

Design: LSE Design Unit (lse.ac.uk/designunit)

Photography: Cover image from Unsplash, Pexels or iStock.

Internal photography Nigel Stead, LSE School Photographer and Maria Moore.

Please note: a number of photographs in this document were taken before UK social-distancing guidance was in place.

LSE takes every step to ensure the safety of all their staff and students.