

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE



Research Handbook

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Key Dates

Term dates and School closures – Academic Year 2018/19

Michaelmas Term (MT) Thursday 27 September – Friday 14 December 2018 (teaching begins on Monday 1 October 2018)

Lent Term (LT) Monday 14 January – Friday 29 March 2019

Summer Term (ST) Monday 29 April – Friday 14 June 2019

Undergraduate and 12-month master's programmes will have a Reading Week during week 6 of MT and LT.

The School will also be closed for English public holidays*. In 2018/19 these will be:

Christmas Closure

Friday 21 December 2018– Tuesday 1 January 2019

Easter Closure Thursday 18 April–Wednesday 24 April 2019

May Bank Holiday Monday 6 May 2019

Spring Bank Holiday Monday 27 May 2019

Summer Bank Holiday Monday 26 August 2019

*Some facilities, such as the Library, may open on some of these dates. The School will issue updates throughout the year.

Statement on Dates and Vacations

When you register for a research programme, you are expected to reside within the UK in order 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 further information on residing outside of the UK please see the PhD Academy website: info.lse.ac.uk/current-students/phd-academy/phd-journey/a-z-guidance

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; this is therefore **not** vacation time. You can request one short vacation (of up to 4 weeks) during each summer vacation 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 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 (Phdacademy@lse.ac.uk). 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 LSE community as a member of the Department of Mathematics. You are joining a vibrant intellectual community comprising world-leading faculty, excellent students 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 for the pursuit of organisational success and social betterment.

The Department has grown rapidly in recent years, with new and exciting developments in research, and the introduction of new teaching programmes and courses. We have a supportive and friendly environment for staff and students. The Department's research and teaching are shaped to a large extent by its position within LSE, a lively and stimulating place to work. We embrace the School's ethos of research-led teaching, and view research and teaching as complementary activities, each enhancing the other. Our aim is to be excellent both in teaching and research, in a way that reflects our location within a social sciences institution, engaging with other parts of LSE.

Our website provides an overview of research areas, news and events and a full section for our current student members of the Department of Mathematics. If you have any questions, or need more information, please consult our website or contact us on maths.info@lse.ac.uk



Professor Martin Anthony Head of Department Department of Mathematics, LSE

Key Staff



Dr Julia Böttcher (J.Boettcher@lse.ac.uk) is the Doctoral Programme Director. For any academic queries or pastoral concerns, she will be your main contact.

Room: COL.4.03



Enfale Farooq (E.Farooq@lse.ac.uk) is the Research Manager. She will be your first point of call for any non-academic queries and should be your first point of contact in such matters.

Room: COL.3.10



Professor Martin Anthony (m.anthony@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.3.13

Other Professional Services Staff you may need to know are:

Kate Barker – Department Manager, COL 3.14 Rebecca Batey – Postgraduate Programmes Manager, COL 4.01 Jacke Everid – Undergraduate Programmes Manager, COL 4.01 Sarah Massey – Department Administrator: Communications & Student Support, COL 4.01 Edward Perrin – Department Administrator: Finance, Projects & Facilities, COL 3.10

NAME	ROOM	EMAIL
Dr Peter Allen	COL 4.15	P.D.Allen@lse.ac.uk
Professor Martin Anthony	COL 3.14	M.Anthony@lse.ac.uk
Dr Tuğkan Batu	COL 4.04	T.Batu@lse.ac.uk
Dr Julia Böttcher	COL 4.03	J.Boettcher@lse.ac.uk
Professor Graham Brightwell	COL 3.03	G.R.Brightwell@lse.ac.uk
Dr Christoph Czichowsky	COL 3.11	C.Czichowsky@lse.ac.uk
Dr Albina Danilova	COL 4.09	A.Danilova@lse.ac.uk
Dr Paul Dütting	COL 3.08	P.D.Duetting@lse.ac.uk
Dr Pavel Gapeev	COL 4.10	P.Gapeev@lse.ac.uk
Professor Olivier Gossner	COL 2.04	O.Gossner@lse.ac.uk
Professor Jan van den Heuvel	COL 3.07	J.van-den-Heuvel@lse.ac.uk
Dr Rachel Kirsch	COL.2.08	R.Kirsch1@lse.ac.uk
Dr Ioannis Kouletsis	COL 4.13	I.Kouletsis@lse.ac.uk
Dr Andrew Lewis-Pye	COL 3.12	A.Lewis7@lse.ac.uk
Dr Arne Lokka	COL 4.08	A.Lokka@lse.ac.uk
Professor Adam Ostaszewski	COL 4.06	A.J.Ostaszewski@lse.ac.uk
Dr Katerina Papadaki	COL 2.05	K.Papadaki@lse.ac.uk
Dr Johannes Ruf	COL 3.06	J.Ruf@lse.ac.uk
Professor Amol Sasane	COL 4.05	A.J.Sasane@lse.ac.uk
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Professor Jozef Skokan	COL 3.04	J.Skokan@lse.ac.uk
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Dr László Végh	COL 2.02	L.Vegh@lse.ac.uk
Dr Luitgard Veraart	COL 4.11	L.Veraart@lse.ac.uk
Dr Victor Verdugo	COL.2.08	V.Verdugo@lse.ac.uk
Dr James Ward	COL 4.14	J.M.Ward@lse.ac.uk
Dr Giacomo Zambelli	COL 2.06	G.Zambelli@lse.ac.uk
Professor Mihail Zervos	COL 4.02	M.Zervos@lse.ac.uk

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

lse.ac.uk/Mathematics/Current-Students/Office-hours

About the Department of Mathematics

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, ranging from undergraduate, postgraduate and PhD. The Department is also involved in the BSc Mathematics, Statistics and Business degree, which is run by the Statistics Department.

Department Office

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

Email: **maths.info@lse.ac.uk** Tel: **+44 (0) 20 7955 7732**

Postal address:

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

The opening hours of the Reception Desk are as follows: Term time: 10:00 – 12:00 and 14:00 – 16:00

Email

The School will use your LSE email address to communicate with you so you should check it regularly. The email program Microsoft Outlook is available on all student PCs on the LSE network. You can also access email off-campus using webmail and remote desktop or, on the move, using email clients for laptops and mobile phones. For instructions on how to do this visit: Ise.ac.uk/intranet/LSEServices/itservices/remote/home.aspx

You can get a lot of emails in term time. So that you are clear which is important and which is optional information (promotion, events etc), we will send you optional information from the generic email address **maths.info@lse.ac.uk** ._If you get an email from your Programme Manager or Academic Mentor it is important information for you and you should read (and respond as appropriate).

Research Interests of Academic Staff

Dr Peter Allen

Extremal combinatorics (especially graphs and uniform hypergraphs), asymptotic enumeration, Ramsey theory and random discrete structures.

Professor Martin Anthony

Mathematical aspects of machine learning, particularly probabilistic modelling of learning and discrete mathematical problems in the theory of learning, data mining and artificial neural networks; Boolean function classes and their representations.

Dr Tugkan Batu

Algorithms and theory of computation. In particular, randomised computation, (sublinear) algorithms on massive data sets, property testing, statistical testing, and streaming algorithms.

Professor Norman Biggs

Algebraic graph theory, the frequency assignment problem, and graph-theoretical models in finance.

Dr Julia Böttcher

Extremal combinatorics, random discrete structures, Ramsey theory, algorithmic and structural graph theory, graph colouring.

Professor Graham Brightwell

Combinatorics in general, especially finite partially ordered sets, probabilistic methods, and algorithmic aspects.

Dr Christoph Czichowsky

Financial mathematics, stochastic analysis, stochastic optimal control; portfolio optimization, mathematical structure of financial markets and optimal investment strategies, markets with transaction costs, market frictions, mean-variance hedging.

Dr Albina Danilova

Stochastic calculus and financial mathematics, in particular: filtering, enlargement of filtrations and stochastic control and optimisation; derivatives pricing and hedging in incomplete markets and/or under asymmetric information, utility maximization and equilibrium.

Dr Paul Dütting

Algorithms, Game Theory, and Mechanism Design.

Dr Pavel Gapeev

Stochastic calculus, optimal stopping and freeboundary problems, pricing of American options, sequential testing and disorder detection problems, interest rate and credit risk models, illiquidity markets, stochastic impulse control and optimisation, Gaussian processes.

Professor Olivier Gossner

Game theory, economics of information, bounded rationality and complexity.

Professor Jan van den Heuvel

Graph and matroid theory; applications and algorithmic aspects of graph theory; mathematical aspects of frequency assignment problems; mathematical aspects of networks; discrete mathematics in general.

Dr Rachel Kirsch

Combinatorics and graph theory, especially enumerative extremal graph theory and combinatorics on words.

Dr Andrew Lewis-Pye

Logic, computability, algorithms, randomness, game theory, agent based models, networks.

Dr Arne Lokka

Probability and financial mathematics, with special emphasis on hedging and pricing of derivatives, utility maximization and market equilibrium, real investment decisions under uncertainty.

Professor Adam Ostaszewski

Mathematical finance, in particular real options and accounting theory, including corporate disclosure policy. Bargaining theory.

Dr Katerina Papadaki

Approximate dynamic programming algorithms; cooperative game theory; discrete optimization; network games; network optimization; patrolling games; reoptimization; robust optimization; routing; scheduling; shortest path tree games; stochastic dynamic programming; stochastic programming; transportation; wireless network problems.

Dr Johannes Ruf

The modelling of dynamic systems that arise in finance and economics.

Dr Amol Sasane

Mathematical control theory, Operator theory and Complex analysis.

Dr Robert Simon

Game theory (stochastic games, games of incomplete information), shellability (simplicial complexes), matroids.

Professor Jozef Skokan

Extremal set theory, probabilistic combinatorics, quasi-random structures, discrete geometry, graph theory, topics in theoretical computer science, combinatorial games, and mathematical modelling of natural phenomena.

Professor Gregory Sorkin

Combinatorial optimization, Phase transitions in random structures including random graphs and random formulae, Average-case analysis of algorithms, Exponential-time algorithms, Graph theory, combinatorics, and the probabilistic method, Applications in operations research, auctions, biology, physics, and other areas.

Professor Konrad Swanepoel

Combinatorial and discrete geometry; axiomatic geometry; finite geometries; geometry of finitedimensional Normed Spaces; geometric shortest networks, such as Steiner Minimal Trees and the Fermat-Torricelli Problem; extremal combinatorics.

Dr Lázló Végh

Combinatorial optimisation related to connectivity, flows, matchings and matroids, and also applications to areas such as mathematical economics, algorithmic game theory and network design.

Dr Luitgard Veraart

Financial mathematics, particularly, optimal investment problems, stochastic volatility models, pricing of derivatives, risk management in financial markets.

Dr Victor Verdugo

Approximation algorithms, convex optimization techniques for hard combinatorial problems, online selection problems, social networks, algorithmic aspects of representation

Professor Bernhard von Stengel

Game theory (efficient computation of equilibria, theory of online algorithms), extensive form games, correlated equilibria, pivoting algorithms in linear programming and linear complementarity, polytope theory.

Dr Giacomo Zambelli

Combinatorial optimisation; integer programming; mathematical programming; operations research.

Professor Mihail Zervos

Stochastic analysis, stochastic control and optimisation, optimal stopping problems, valuation of investment decisions and investments in real assets, options of American type, derivative pricing in incomplete markets, weather derivatives.



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: Ise.ac.uk/yourfirstweeks.

For those students joining the LSE in January of the academic year, the School holds a smaller series of orientation events. Further details will be made available at **lse.ac.uk/intranet/students/home.aspx**.

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:

info.lse.ac.uk/current-students/phd-academy/phd-journey/registration.

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 visit **lse.ac.uk/studentldCards** to find out how to get a replacement.

Student Status Documentation

A certificate of registration provides proof to organistations, 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 lse.ac.uk/studentletters. You can obtain a certificate of registration from the Student Services Centre during our opening hours (normally 11am to 4pm, Monday to Friday). Your 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 visit **lse.ac.uk/studentStatusDocuments**.

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. We recommend that you activate your IT account in the Library on registration day where you can easily gain assistance if you need it. However, you can activate your IT account from any LSE public computer room, in order to do this visit selfreg.lse.ac.uk/

If, for some reason, the activation procedure fails, go to the IT Help Desk on the first floor of the Library, opposite the lifts



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

Dr Julia Böttcher, our Doctoral Programme Director (also referred to as 'DPD'), 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 J.Boettcher@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 <u>your</u> 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. Where students need more pastoral support the mentor may refer them to the Doctoral Programme Director. The 2018-19 Mentors are:

Mentor	Room	Email
Dr Albina Danilova	COL.4.09	A.Danilova@lse.ac.uk
Dr Andy Lewis-Pye	COL.3.12	A.Lewis7@lse.ac.uk
Dr László Végh	COL.2.06	L.Vegh@lse.ac.uk
Dr Giacomo Zambelli	COL.2.02	G.Zambelli@lse.ac.uk

General Guidance from 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.

Julia Böttcher and Bernhard von Stengel Doctoral Programme Directors 2018-present 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 participation 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 and their lead supervisor. 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 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 though the academic year, some taught courses will not be available until the start of the following academic year. For more information please see:

lse.ac.uk/intranet/students/registrationTimetablesAssessment/Registration.

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 (apps.lse.ac.uk/coursefinder) will help you to choose which courses to take within your programme regulations. Course Finder allows you to browse available courses by unit value, keyword, Department, and assessment type. You can build a shortlist of courses and compare the Lecture Timetable for that shortlist. Course Finder will be open from 10:00 on Monday 18 September 2017 to 12:00 on Monday 9 October 2017, and is available to registered students.

Once you have selected your shortlist, you must choose all of your courses, including any compulsory courses and your dissertation, in LSE for You. Course choice opens for browsing during Welcome Week so that you can get used to the system however you will not be able to make any choices during this period. The system opens fully from Friday 28th September 2018 to fully registered students. The deadline for course choices for postgraduate students is Monday 15th October 2018. The system will re-open at the beginning of Lent Term so you can make any changes that are needed for Lent Term.

Full information on how to select course can be found at **lse.ac.uk/coursechoice**. Here you will find links to the programme regulations which outline your available course choices and a course guide for each of them. You will also find tutorials on how to use the Graduate Course Choice system.

Some graduate courses have been designated as 'controlled access' due to limited places and/or prerequisites that are required in order to study the course. You will need to apply to the department teaching the course for permission to take it using the course choice system. These courses are highlighted in the course choice system. You will be notified of the outcome of your request to take a controlled access course by email. If you have been offered a place on a controlled access course, you must use the course choice system to indicate whether you would like to accept or decline the offer within two working days of receiving the offer email. After this time the offer will expire. Your overall selection of courses is also subject to the approval of your home department.

Some academic departments allocate places to seminars centrally whilst others permit you to choose using the seminar signup facility in LSE for You. You can see which method is used for each of your registered courses in the seminar sign-up system. If you wish to change your seminar you should contact the Department teaching the course for more information. Once you have successfully registered for your courses and seminars in LSE for You, your personal timetable will be automatically for you. There is usually around a 15 minute delay between successful course registration and your timetable being updated.

Some departments allocate places to seminars centrally whilst others permit you to choose using the seminar signup facility in LSE for You. Personal Timetables can be viewed there too.

Methodology courses - Ise.ac.uk/Methodology/Methods-Training.

Academic and Professional Development courses - info.lse.ac.uk/Current-Students/phd-academy/eventscourses-and-training/academic-and-professional-development.

London Graduate School in Mathematical Finance:

londonmathfinance.org.uk/

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. The programme started in October 2006 and continues for its twelfth year in October 2017.

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 in your first year, 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). The courses offered in 2017/18 can be viewed at londonmathfinance.org.uk/services.

A further activity of the School is the organisation of an annual PhD Day at LSE, in which students have the opportunity to present their work. This event provides students with the opportunity to present their work in front of other students and academics, and to help prepare them for larger seminars and international conferences. The next date for this event will be announced in due course. Further information on the courses offered by the LGSMF, including timetabling arrangements, can be found on their website at the link above.

To register on any of the courses, you should, in the first instance, contact Dr Albina Danilova (LSE). 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 college email address (or should quote your college email address). Please also notify Enfale Farooq (E.Farooq@lse.ac.uk) of your choices.

London Taught Course Centre:

www.ltcc.ac.uk

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, and of acquiring a working knowledge of classical results and recent developments not only in their own broad research fields but also outside the specialised domains of their individual research projects. 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 vision for the LTCC stems directly from the finding of the international review of UK research in mathematical sciences commissioned by EPSRC, that while the UK PhD standard remains high, recent changes in content of undergraduate degrees along with pressure for PhD completion resulted in reduced opportunity for PhD candidates to study mathematical sciences outside the immediate areas of their research projects.

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. There will also be advanced courses directed towards second and third year PhD students. The courses are usually taught at De Morgan House, a few minutes' walk from the LSE.

For more details please contact the Centre Administrator – office@ltcc.ac.uk

Full information on the courses offered by the centre including full text syllabi, timetables and registration forms can be found on their website at the link above. In line with EPSRC guidelines, there will be 'light touch' assessments for every module, both basic and advanced. Basic exams will take place in the Lent Term. Assessments for advanced courses will take place at the end of each module.

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:

- Joint Mathematics and Philosophy Reading Group on Game Theory
- 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.

These workshops are also an opportunity for LSE research students to meet peers from other Mathematics Departments within the University of London. 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: Ise.ac.uk/Mathematics/Events-and-Seminars

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: londonmathfinance.org.uk/location

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.

The 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. A compulsory LSE training course must also be attended. Students who are interested in teaching should contact the Research Manager in the first instance.

Women in Mathematics Seminar Series

The London Mathematical Society for some years has run "Women in Mathematics" seminars and events to help promote the careers of women in mathematics and to provide support, advice and networking opportunities. The Department of Mathematics will be supporting its staff and students in a similar way by running a termly lunchtime academic and professional development seminar series which focuses on issues of particular interest to women in Mathematics. For each seminar we plan to invite a prominent female mathematician to introduce their area of research to our students and discuss other issues of relevance to the group. While our female UG, MSc, PhD students and academic staff are especially encouraged to attend these seminars, everybody is welcome.

These seminars will be held on Wednesday afternoons when there is no timetabled teaching. See **Ise.ac.uk/maths/WomenInMathematics/Home.aspx** for more information.

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; the way in which you do so will depend on the reason for and length of your absence (guidance can be found here - info.lse.ac.uk/current-students/phd-academy/phd-journey/a-z-guidance).

If you are going to be absent for a short period of time of between 2 and 4 days (for example, to attend a conference) you should simply email **phdacademy@lse.ac.uk** confirming the date you will be absent from, when you will return and where you will be. It is important that you do take some holiday, or at least have a break from your studies. You should consult with you supervisor over holiday arrangements.

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 ISVAT website: **Ise.ac.uk/intranet/students/ISVAT/currentstudents/visa-newsletters.aspx**

At certain times you may need to apply for a change to your student registration (e.g. study interruption). You will need to complete the relevant form to request such a change which you will find at info.lse.ac.uk/current-students/phd-academy/phd-journey/a-z-guidance. You can speak to a member of the PhD Academy about any questions you may have before submitting your request.

Progress Monitoring

The PhD Log (Ify.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 (info.lse.ac.uk/Staff/Divisions/Academic-Registrars-Division/Teaching-Quality-Assurance-and-Review-

Office/Assets/Documents/Calendar/RegulationsForResearchDegrees.pdf, paragraphs 19-21).

Student Progress Interview

At 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 (info.lse.ac.uk/Staff/Divisions/Academic-Registrars-Division/Teaching-Quality-Assurance-and-Review-

Office/Assets/Documents/Calendar/RegulationsForResearchDegrees.pdf paragraphs 22-25) set out School-wide upgrade requirements.

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, a further progress review will take place. 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: info.lse.ac.uk/Staff/Divisions/Academic-Registrars-Division/Teaching-Quality-Assurance-and-Review-Office/Assets/Documents/Calendar/RegulationsForResearchDegrees.pdf)

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**. One is an 'internal' examiner, who is normally from another college of the University of London. The other is an 'external' examiner, who cannot be from the University of London. Your lead supervisor is expected to choose the examiners, and arrange the examination, but cannot be one of the examiners. Details of this can be found at

info.lse.ac.uk/current-students/phd-academy/assets/documents/nominatingExaminers.pdf.

Examination Entry Form

At least three months before you plan to submit your thesis you should start completing the examination entry form (info.lse.ac.uk/current-students/phd-academy/assets/documents/examEntry-1.docx) 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.

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 (Formatting your thesis: info.lse.ac.uk/current-students/phd-

academy/assets/documents/Formatting-and-binding.pdf). The front pages of your thesis should contain certain information (template for thesis front pages: info.lse.ac.uk/current-students/phd-academy/assets/documents/thesisFrontPage.pdf). 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: info.lse.ac.uk/current-students/phd-academy/assets/documents/extendYourRegistration.docx.

You can choose to either print and bind your thesis yourself or use a company to do this for you. Details of companies you may wish to use for this purpose can be found at info.lse.ac.uk/current-students/phd-academy/assets/documents/Formatting-and-binding.pdf, including details for Walter Newbury (who deliver directly to the PhD Academy).

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: info.lse.ac.uk/Staff/Divisions/Academic-Registrars-Division/Teaching-Quality-Assurance-and-Review-Office/Assets/Documents/Calendar/StatementOnEditorialHelp.pdf, 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 front of thesis: info.lse.ac.uk/current-students/phd-(see template for pages your academy/assets/documents/thesisFrontPage.pdf).

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 (info.lse.ac.uk/Staff/Divisions/Academic-Registrars-Division/Teaching-Quality-Assurance-and-Review-Office/Assets/Documents/Calendar/RegulationsForResearchDegrees.pdf).

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.

Providing a Final Copy of Your Thesis

When you have successfully completed your PhD (i.e. once you have completed your viva examination and any revisions your examiners have required you to make in your thesis) and in accordance with the School's Regulations for Research Degrees (info.lse.ac.uk/Staff/Divisions/Academic-Registrars-Division/Teaching-Quality-Assurance-and-Review-

Office/Assets/Documents/Calendar/RegulationsForResearchDegrees.pdf, paragraphs 39.3, 41 and 56), the PhD Academy will ask you to provide a final electronic copy of your thesis for deposit in LSE Theses Online (etheses.lse.ac.uk). Once you have submitted a final copy of your thesis in accordance with the School's requirements, the Academy will produce your degree certificate. This can take up to two months.

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 in the section of this Handbook entitled "Services for Disabled Students (including students who have dyslexia)" and at Ise.ac.uk/intranet/LSEServices/disabilityAndWellBeingService/currentStudents/Home.aspx.

Study and Work

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.

If you are going to be away, or otherwise unavailable, for an extended period of time (say, more than a week), then it is important that you inform your lead supervisor and the Research Manager beforehand. A maximum of four weeks' leave is permitted at any one time.

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. Further information on the process of interrupting can be found in the section of this Handbook entitled "Interruption".

If you are on a Tier 4 (General) student visa which permits working in the UK, you may only work up to 20 hours per week except during vacations, when you are permitted to work full-time. The number of hours that you can work is the same regardless of whether you are paid or unpaid. If you have completed your programme, and have a visa that permits you to work, you can work during the short period you are permitted to be in the UK after your programme ends. However, if you withdraw from your programme or interrupt your studies, you are not entitled to work regardless of when your permission in the UK ends. Further guidance on working during your studies as a Tier 4 visa holder can be sought from the International Student Visa Advice Team at the LSE Ise.ac.uk/intranet/students/ISVAT/home.aspx

Study and Research Regulations

You should familiarise yourself with the LSE regulations, policies and procedures that cover many aspects of student life.

Some of the regulations explain the organisation and conduct of your academic study. These include information about the structure of your programmes, assessment and graduation and what to do if you face exceptional circumstances.

You can find links to the <u>Regulations for First Degrees</u>; <u>Regulations for Diplomas</u>; <u>Regulations for Taught</u> <u>Masters Degrees</u>; <u>Appeals Regulations</u>; and <u>Regulations on assessment offences other than plagiarism</u> in the LSE Calendar at <u>Ise.ac.uk/calendar</u>.

You can find a full A-Z listing of all of LSE's policies and procedures online at lse.ac.uk/policies.

The following web links will be particularly relevant during your studies.

Regulations for Research Students

lse.ac.uk/resources/calendar/research.htm

Regulations for Research Degrees

info.lse.ac.uk/Staff/Divisions/Academic-Registrars-Division/Teaching-Quality-Assurance-and-Review-Office/Assets/Documents/Calendar/Regulatio nsForResearchDegrees.pdf

MPhil/PhD Programme Regulations

lse.ac.uk/resources/calendar/programmeReg ulations/mPhilPhD/mathematics.htm

Conditions of Registration

lse.ac.uk/resources/calendar/Default.htm

Graduate Course Guides

lse.ac.uk/resources/calendar/courseGuides/g raduate.htm

Student Charter

info.lse.ac.uk/staff/Services/Policies-andprocedures/Assets/Documents/stuCha.pdf

Ethics Code

info.lse.ac.uk/staff/Services/Policies-andprocedures/Assets/Documents/ethCod.pdf

All School Regulations

The following web link gives you an A-Z list of relevant regulatory documents where you can find further details of all School regulations: info.lse.ac.uk/staff/Services/Policies-andprocedures

General Academic Regulations

info.lse.ac.uk/Staff/Divisions/Academic-Registrars-Division/Teaching-Quality-Assurance-and-Review-Office/Assets/Documents/Calendar/GeneralA cademicRegulations.pdf

Regulations on Plagiarism and Academic Dishonesty

Students must make themselves familiar with the School's Regulations on Assessment Offences (of which there are separate versions on plagiarism and other offences). These regulations will be used to deal with any allegation that any part of a thesis has been plagiarised or any infringement of the declaration in regulation 39 of the Regulations for Research Degrees:

info.lse.ac.uk/Staff/Divisions/Academic-Registrars-Division/Teaching-Quality-Assurance-and-Review-Office/Assets/Documents/Calendar/RegulationsForResearchDegrees.pdf.

 The following web link details the School's Regulations on Assessment Offences, other than plagiarism: info.lse.ac.uk/Staff/Divisions/Academic-Registrars-Division/Teaching-Quality-Assuranceand-Review-Office/Assets/Documents/Calendar/RegulationsAssessmentOffences-OtherThanPlagiarism.pdf.

The Regulations on Plagiarism can be found at the following web links:

- lse.ac.uk/resources/calendar/academicRegulations/RegulationsOnAssessmentOffences-Plagiarism.htm
- Ise.ac.uk/resources/calendar/academicRegulations/statementOnEditorialHelp.htm

The work you submit for assessment must be your own. If you attempt to pass off the work of others as your own, whether deliberately or not, you are committing plagiarism. 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 from 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 (for classes, seminars, examination scripts, dissertations, essays, computer programmes) must be solely 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, see link below. 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 an 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 containing 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 (webpages, Moodle, Handbook or the administrators), Academic Adviser, LSE LIFE or the Library as soon as possible.

A Statement on Editorial Help can be found at: info.lse.ac.uk/Staff/Divisions/Academic-Registrars-Division/Teaching-Quality-Assurance-and-Review-Office/Assets/Documents/Calendar/StatementOnEditorialHelp.pdf

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.

Results and Transcripts of Results

lse.ac.uk/results

The School releases confirmed marks to students once the relevant School Board of Examiners has ratified them.

To ensure that your results are released as scheduled, please check your balance on LSE for You to see if you have any outstanding tuition, halls or library fees. You should contact the Fees Office (fees@lse.ac.uk)_if you have any queries, since the School will not release your results if you have any outstanding debt.

Transcripts for finalists are issued digitally within five working days of final results being officially published. Continuing students will be able to request an 'intermediate transcript' of results as soon as they are officially published. For more information, please see **lse.ac.uk/transcripts**.

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. All claims should be directed to the Research Manager and should be accompanied by full receipts and an explanatory note on all expenses incurred. The refund will come to you from LSE's FSO; they contact students directly to notify when the reimbursement cheque is available for collection. Please note:

- any claimable IT purchase over the value of £200 should be made via the IT Service Desk (lse.ac.uk/intranet/LSEServices/IMT/about/contactIMT.aspx). Purchases made by IT Services remain the property of the School during your registration and must be returned to the School upon completion.
- reimbursements can only be made by cheque; electronic payments are not possible
- only the recipient can collect cheques
- 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 or once their thesis has been submitted.

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)

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 School's policy if a problem arises on a research-based trip and to notify your other insurer that you have done so. info.lse.ac.uk/Staff/Divisions/Risk-and-Compliance-Unit/Health-and-Safety

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 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. Successful applicants may also work on related

publications/presentations, or attend conferences and workshops both at the host institution and within the wider national academic community.

To find out more about the schemes the Academic Partnership Office offers, visit lse.ac.uk/intranet/LSEServices/academicPartnerships/phdStudentExchanges.aspx

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 can hand in your application form using the Graduate Drop Box in the Student Services Centre or by post. Provided all the supporting documentation has been submitted 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 at

lse.ac.uk/intranet/students/moneyMatters/financialSupport/internal/registeredStudents/postgraduateTra velFund.aspx.

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 2017/18 academic year. Please speak to the Research manager for more information. Full details can be found at Ise.ac.uk/intranet/researchAndDevelopment/researchDivision/applyingForFunding/internalFundingOpport unities.aspx.

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. You are expected to pay one third of your fees by:

- 28 October 2018
- 28 January 2019
- 28 April 2019

If you do not know your fees please visit lsea.uk/tableoffees

Visit <u>lse.ac.uk/feepayments</u> to find out about the different payment methods available. Unfortunately, it is not possible for you to pay in person.

The Finance Hub is your one stop shop for fee administration, visit <u>financehub.lse.ac.uk</u> to:

- View your tuition fees
- Make payments
- Submit and track enquiries
- Present forms for confirmation and completion
- Request invoices and receipts

The Fees Office also run drop-ins in the Student Services Centre.

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 at <u>lse.ac.uk/financialsupport</u>.

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

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.

Your Department

The LSE Mathematics Department is an active research unit within a world-class social science institution. The Department is a lively and bustling place during term-time and 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 of Mathematics is renowned for its research excellence within its areas of specialisation. Our research staff work in four broad disciplines - Discrete Mathematics and Algorithms, Financial Mathematics and Control Theory, Game Theory and Operations Research. Supervision for MPhil and PhD research is available in: combinatorics, combinatorial game theory, graph theory, integer programming, mechanism design, polyhedral combinatorics, probabilistic analysis, theory of computation and algorithms, and in the applications of mathematics in areas such as inspections, network optimisation, telecommunications, transportation, and economics.

The Department of Mathematics was submitted jointly to REF 2014 with LSE's Department of Statistics: 84% of the research outputs of the two departments were classed as either "world-leading" or "internationally excellent" in terms of originality, significance and rigour. The most recent work produced by members of the Department can be found on our publications webpage.

We teach a range of lecture courses: from first-year undergraduate courses for students without A-level mathematics, to advanced postgraduate courses on the MSc programmes, through to PhD-level courses. Some of our undergraduate courses attract very large numbers of students, reflecting the fact that mathematical techniques and ideas underpin much of modern economics.

Alongside their research, academic staff in the Department are responsible for undergraduate and graduate teaching, and also carry out administrative tasks both for the Department and for the School as a whole.

Departmental Events

We offer a wide range of seminars and reading groups, which are aimed at a variety of levels and audiences. You can find out more here: lse.ac.uk/Mathematics/Events-and-Seminars

In addition to the weekly seminars, the Department organizes a number of key events throughout the year:

- Since 2007, LSE has hosted an annual one-day Colloquium in Combinatorics. Normally held in May, this meeting is organised jointly with Queen Mary (University of London), who host a linked event on the previous day. These two meetings are very popular and attract a large number of research students.
- The Department has hosted a series of International Workshops on Search Games and Rendezvous and ESRC Game Theory Workshops. One of the recent highlights was a presentation by 2012 Nobel Memorial Prize in Economic Sciences winner Alvin Roth: "Who Gets What? The New Economics of Matchmaking and Market Design". Research students are encouraged to attend these and other events organised by the Department.
- We work with the Conferences team at LSE to host occasional public events, where some of the most influential figures in the social sciences can be heard.
- We host an annual Alumni reception to build bonds and networks between current students, staff and alumni.

There are many other open-access seminar series organised at LSE. Those that are more likely to be of interest to you would be those run by the Statistics, Philosophy and Finance Departments. These are publicised on the LSE's or Departmental webpages.

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: Ise.ac.uk/Mathematics/people

Social Media

The Department has a research blog (blogs.lse.ac.uk/maths), the core mission of which is to increase public awareness and understanding of the research we undertake within the Department. We're really keen to hear your news and views and help publicise your work! If you have anything you would like to contribute, please read the advice here blogs.lse.ac.uk/maths/about/ and contact the Research Manager.

We also run popular Twitter feed **@LSEMaths** which we would encourage you to follow (if you have Twitter), as this is the quickest and easiest way for you to receive up-to-date information about the Department, the School and issues relating to mathematics. You also can join our LinkedIn group, "LSE MSc and MPhil/PhD Mathematics" to connect with your peers.

Departmental Facilities

Research Student Study Area - COL.3.16

The Department of Mathematics has a specific study area for its research students, located on the 3rd floor of Columbia House (COL 3.16). We hope this area provides you with a comfortable working environment. We do ask you to keep the area clean and tidy and to be respectful of your peers and individuals' work space. If you have any suggestions about how this room can be improved, please let the Research Manager know.

We aim to provide you with access to a desk and Windows computer in the study area when required (although see the note below under "IT Facilities" regarding hot-desking at busy times). You also have access to a locker 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). You may need to re-add this printer to your PC to send printing to it.

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 whatever address you choose 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 2nd, 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 – thank you for your assistance with this.

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, printer paper, 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

Postgraduate Common Room

In addition to the space provided for you in Columbia House, a dedicated Postgraduate Common Room is available on the lower ground floor of 32 Lincoln's Inn Fields (32LIF.LG.05a). More Information can be found at Ise.ac.uk/intranet/LSEServices/estatesDivision/buildingAndConstruction/32-Lincolns-Inn-Fields/pdfs/32LIF-study-rooms-V2-AB.pdf.

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. LSE places doctoral candidates at the heart of our research culture and community. The Academy is located on the 4th floor of the library and offers a dedicated teaching room and common room for all PhD students to use. If you have any queries about registration, your student status, finance or professional development please visit the office in the Academy; staff operate an open door policy and aim to resolve any queries and problems on the spot where possible. Their goal is to support students in their quest to become creative intellectuals who can produce rigorous evidence-based research of the highest quality. They want to support students in creating impact outside of academia and in communicating their ideas to a range of different audiences. They offer training in advanced methodology, subject specific knowledge and professional development, equipping students with a range of advanced skills that allow them to meet, and exceed, their personal ambitions.

Please do check out their website – they have some really useful resources, including an overview of your PhD, year by year. info.lse.ac.uk/Current-Students/phd-academy

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: info.lse.ac.uk/Current-Students/phd-academy/events-courses-and-training



Personal and Professional Development

There are many ways in which LSE supports the personal development and wellbeing of students – both on and off campus.

In terms of events, there are lectures and group based workshops across the year on topics such as stress management, overcoming perfectionism and coping with personal difficulties. You can find more information on the links below:

lse.ac.uk/counselling

info.lse.ac.uk/staff/divisions/Teaching-and-Learning-Centre

Staff Student Liaison Committee (SSLC)

At the start of the year you will be asked by your department if you would like to represent your programme on the Staff Student Liaison Committee (SSLC). These are important committees because they provide a forum for feedback on your programme and also a space to discuss issues which affect the student community.

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 on the Consultative Fora can be found at **lse.ac.uk/studentrepresentation**.

Student Only Forums

The forums allow the Director to "feel the pulse" of LSE's students and give you the chance to voice your concerns and raise suggestions. Look out for details of where and when forums will be happening.

Interruption

You can take a year-long break in your studies (which we call an interruption) with approval from your department. You are usually required to return at the start of either Michaelmas Term or Lent as appropriate. Summer Term interruptions are not possible. For more information visit **Ise.ac.uk/interruptions**.

Withdrawal

Withdrawing means that you are leaving your programme permanently. Before withdrawing you may want to consider interruption so that you have some time to consider your options. For more information visit **lse.ac.uk/withdrawal**.

Student Services Centre

The Student Services Centre (SSC) is located on the ground floor of the Old Building and can provide advice and information about:

- Certificates of Registration (for bank accounts, travel, council tax etc.)
- Course selection and class changes
- Exams and assessment
- Results
- Graduation

- Support for new arrivals
- Registration (registration for new students normally takes place in Clement House)
- Transcripts and Degree Certificates
- LSE cards

The SSC is normally open between 11am and 4pm, Monday to Friday. For the most up to date opening hours visit <u>lse.ac.uk/ssc</u>.

The SSC also hosts a series of specialist drop-in sessions covering:

- Financial support
- Fees
- Graduate admissions
- International student visa advice

These sessions run for an hour at various times during the week so be sure to check when the next session is running. In most cases you will need to sign up to attend a session.

To find out more about the Student Services Centre visit <u>lse.ac.uk/ssc</u>, follow our page on the Student Hub and follow <u>@lse_ssc</u> on Twitter.

What If...

The SSC have developed a series of answers to common "What if..." questions. These cover a broad range of topics including what to do if you're unwell during an exam; become pregnant; change your name; are not happy with your marks or want to change degree programme.

You can find these questions and answers at info.lse.ac.uk/current-students/what-if

Advice Team

The SSC has a dedicate Advice Team that can provide advice on academic matters (particularly around non-progression, interruption, withdrawal, regulations and exams). If you are not sure who to contact about a query or question then the Advice Team will be happy to help. You can contact the advice team at <u>ssc.advice@lse.ac.uk</u> or by phone on 020 7955 6167.

International Student Visa Advice Team (ISVAT)

ISVAT provide detailed immigration advice for international students on their website which is updated whenever the immigration rules change. The best way to contact ISVAT is to use the query form at **Ise.ac.uk/isvat** or to attend one of their drop-in sessions.

ISVAT also manage student exchanges to USC Berkley and through the Erasmus+ scheme. For more information about this visit <u>lse.ac.uk/erasmus</u>.

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 related to how to adapt to new or difficult situations, including the development of skills for leadership, study/work/life balance, and preparing for the working world
- Drop-in sessions from our partners 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 at <u>lse.ac.uk/lselife</u>, 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 <u>lse.ac.uk/library</u>. Once you've 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 at <u>lse.ac.uk/library</u>. 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 is at Ise.ac.uk/academicSupportLibrarian. Subject Guides are useful online introductions to finding resources, read yours at lse.ac.uk/library/subjectGuides.

Language Centre

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

If English is not your first language, the English Insessional Support Programme can offer help and advice throughout your degree. You can attend an English for Academic Purposes information session to see what support is available for you. You can also register for your "academic cluster" in the Language Centre which groups together students from the same department with similar support needs.

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 an extracurricular 'MFL Certificate Course' at a discounted rate. 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 <a>lse.ac.uk/languages

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 and in one-to-one appointments. We have a jobs board and offer bespoke services for students with disabilities.

There is lots of information and support at **lse.ac.uk/careers** 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:

- Search for jobs and opportunities
- Book one-to-one discussions to talk about your career options and get your applications checked
- Explore upcoming events including seminars, careers fairs and employer presentations

You can log into Career Hub at careers.lse.ac.uk.

The LSE Volunteer Centre is part of LSE Careers and is here to help you develop new skills and new friendships while making an impact through volunteering. The Volunteer Centre advertise volunteering opportunities within LSE, at different charities across London and internationally. Positions range from one-off opportunities to part-time internships with charities. The annual Volunteering Fair takes place at the beginning of Michaelmas Term and is a great opportunity to meet a wide range of charities and get a feel for their work. You can find out more, as well as get tips and advice about volunteering at Ise.ac.uk/volunteerCentre or by following @LSEVolunteering.

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 facilitates the Peer Supporter Scheme. SWS aims to provide you with a single integrated source of help and assistance.

SCS provides 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 <u>lse.ac.uk/counselling</u> to book an individual appointment, read about drop-in appointments or find out about groups and workshops.

DWS is 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 create an Inclusion Plan with you, which is a way of putting in place agreed "reasonable adjustments" to support your studies. Visit <u>Ise.ac.uk/disability</u> 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 at <u>lse.ac.uk/peerSupport</u>

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 - <u>www.ukcisa.org.uk</u>.

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 (PEL). This surgery will register most LSE students. For more information about the services offered and how to register please visit <u>www.stphilipsmedicalcentre.co.uk</u> or call 020 7611 5131.

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 lots more information about Health Care, including details about dentists and opticians, available at <u>lse.ac.uk/studentHealth</u>.

LSE Faith Centre

The Faith Centre is open to students of all faiths and none. It is a space for prayer, worship and quiet reflection.

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 Aoga and Tai Chi. Class details can be found online at <u>lse.ac.uk/faithCentre</u>. 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. Find out more by visiting the "Programmes" page at <u>lse.ac.uk/faithCentre</u>.

The Faith Centre Director and Chaplain to the LSE, Reverend Dr James Walters, can be contacted on <u>j.walters2@lse.ac.uk</u> for confidential support regardless of religious affiliation. Contact details for our team of Associate Chaplains can be found at <u>lse.ac.uk/faithCentre</u>.

Inclusion Plans

If you have a disability, long-term medical or mental health condition you are advised to apply for an Inclusion Plan (IP) as soon possible. The sooner that you let the Disability and Wellbeing Service (DWS) know about your condition the sooner they can work with you to put appropriate support in place. Advisers in DWS can potentially set up one-to-one learning support, mentoring and help you access assistive technology designed to remove barriers to studying. To find out how to apply for an Inclusion Plan visit Ise.ac.uk/inclusionPlans.



Codes and Charters

LSE Academic Code

LSE has introduced a new Academic Code that sets out what we are doing to deliver a consistent student experience across the School and clarifies what students can expect from their LSE education.

The Academic Code brings together key principles that underpin students' education into a School-wide policy. Developed in partnership with LSE Students' Union, it sets the baseline to build on teaching standards, academic support, and assessment and feedback - areas that students have told us matter the most to them.

The code covers teaching; assessment and feedback; academic support and student voice. To find out more search online for "LSE Academic Code".

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, just search "LSE Student Charter".

Codes of Good Practice

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

They set out what you can expect from your department in relation to the teaching and learning experience. The codes cover areas like the roles and responsibilities of Academic Mentors and Departmental Tutors; the structure of teaching at LSE; examinations and assessments. The codes also lay out your responsibilities ie, what LSE expects of you. You can find the codes of practice at <u>Ise.ac.uk/calendar</u>.

The Ethics Code

The Ethics Code details the principles by which the whole LSE community are 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" at Ise.ac.uk/ethics.

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 regarding research ethics or research conduct please email <u>research.ethics@lse.ac.uk</u>.

Equity, Diversity and Inclusion

To uphold the School's commitment to equality of respect and opportunity, as set out in the Ethics Code, we will treat all people with dignity and respect, and ensure that no-one will be treated less favourably because of their role at the School, age, sex, disability, gender identity, race, religion or belief, sexual orientation, marriage and civil partnership, pregnancy and maternity, and social and economic background. In practice, this means we expect you 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 your 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. Details of how to report bullying and harassment are available online at lise.ac.uk/reportit

LSE Catering Outlets

At LSE, we have a wide range of restaurants, cafes and bars for you to visit during your studies with us. The main restaurants are LSE Garrick and the Fourth Floor Restaurant. Our cafes and bars are:

- The Bean Counter
- Café 54
- George IV Pub
- Plaza Cafe

info.lse.ac.uk/current-students/estates-Division/Facilities-Guide/Food-and-Drink



Campus Map



95/ ALD CBR CLM COL CON COW KGS 1KW KSW LAK LCH 5LF 321 35L 50L

KEY TO MAP

95 Aldwych
Aldwych House Aldwych
Centre Building Redevelopment
Clement House Aldwych
Columbia House Aldwych
Connaught House Aldwych
Cowdray House Portugal Street
King's Chambers Portugal Street
1 Kingsway
20 Kingsway
Lakatos Building Portugal Street
Lincoln Chambers Portsmouth Street
5 Lincoln's Inn Fields
32 Lincoln's Inn Fields
35 Lincoln's Inn Fields
50 Lincoln's Inn Fields Portsmouth Street
Lionel Robbins Building, Library
and LSE Research Lab Portugal Street

Marshall Building 44 Lincoln's Inn Fields	2
New Academic Building Lincoln's Inn Fields	
Old Building Houghton Street	
Parish Hall Sheffield Street	
Peacock Theatre Portugal Street	
1 Portsmouth Street	
Queens House Lincoln's Inn Fields	
Sardinia House Sardinia Street	
Saw Swee Hock Student Centre Sheffield Street	
Sheffield Street	
St Clement's Clare Market	
Tower One Clement's Inn	
Tower Two Clement's Inn	
Tower Three Clement's Inn	

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Systems and Online Resources

There are 16 PCs in the study area, all of which are installed with Microsoft Windows. At busy times, it may be necessary to adopt a 'hot-desking' approach to the available PCs, rather than see a particular PC as being your own (final year students will, however, be allocated their own desk space). There are several mathematical software packages available as standard at LSE, including MAPLE, Java programming software, MATLAB, MINITAB, Scientific Workplace and SPSS. Access to MathSciNet, a comprehensive database covering the world's mathematical literature since 1940, is provided by the School and linked to from the Mathematics Department website. Your supervisor may be able to provide you with significant guidance in the use of some of this software, where appropriate to the research topic.

Need IT help?

- Visit the IT help desk on the first floor of the Library
- Email <u>it.helpdesk@lse.ac.uk</u>
- Call 020 7107 5000.

The help desk is open seven days a week during term time and offers a range of services including a laptop surgery. Visit the Laptop Surgery for free advice and hands-on assistance with problems connecting to LSE resources from personally-owned laptops and mobile devices. Ise.ac.uk/intranet/LSEServices/itservices/remote/laptopSurgery/home.aspx

LSE for You

LSE for You is a web portal which gives you access to a range of services. You can access LSE for You at <u>Ise.ac.uk/Iseforyou</u>.

LSE for You allows you to:

- View and update your term time (contact) and home (permanent) address
- Reset your IT password

- Access your candidate number
- View your results
- Select your courses

Moodle

Moodle is LSE's virtual learning environment.

Moodle provides a range of teaching resources, activities, assignments, information and/or discussions for your course. Moodle is managed by your course leader so how it is used will vary from course to course. You can access Moodle by visiting moodle.lse.ac.uk

You will also find links to Moodle from a number of web pages, including the webpage for 'Staff & Students'. You will find the specific **Department of Mathematics Research Students Moodle course** by searching for "Maths PhD". This is where we post materials produced to support PhD workshops and is very worth subscribing to.

Email

LSE will use your LSE email address to communicate with you so check it regularly.

Microsoft Outlook is available on all public PCs. You can also access your email off-campus using webmail (mail.lse.ac.uk) or on the move using clients for laptops and mobile phones. For help setting up email on your device search "LSE mobile email setup".

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 the Training and Development System at <u>apps.lse.ac.uk/training-system</u> and login using your LSE username

PhD Portal

info.lse.ac.uk/Staff/Divisions/Teaching-and-Learning-Centre/Teaching-and-Learning-Centre

The PhD Students' Portal acts as an information gateway for all PhD students at LSE. It provides details about central development and training courses, and links to a range of other information relevant to PhD students across the School. It includes details on the courses offered by The Teaching and Learning Centre (TLC), which comprise an academic and professional development programme for PhD students. Of particular interest will be the courses on authoring a PhD and developing as a researcher. Further information on the services provided by the TLC can be found in this handbook, under the heading "Academic and Professional Development for PhD Students".

The portal also contains links to the Careers Service, LSE Language Centre, and Methodology Institute as well as Library and IT Training information related specifically to research students. In addition, it provides a link to all the important administrative documentation you are likely to need during the course of your study.

IT Support For Students with Disabilities

Ise.ac.uk/intranet/LSEServices/itservices/about/studentOrientation.aspx - IT Services is committed to the provision of facilities and support for disabled students and staff, to assure equality of services. Additional PCs and printing facilities for disabled students are provided in the public computer areas in the Library. Other facilities are available in dedicated PC rooms on campus. We also provide one-to-one support for disabled students who wish to become familiar with adaptive technologies and software. To book an appointment, please contact the IT Service Desk.

Green Impact and Sustainability

We hope you will actively help to support the LSE's Environmental Policy. One simple action which helps immensely is to maintain the printers' default setting; this should be to print on both sides of the paper ('duplex' printing). If this does not appear to work, please let the Research Manager know. Ise.ac.uk/intranet/LSEServices/estatesDivision/sustainableLSE/Get-Involved/Green-Impact/Home.aspx

WiFi at LSE

Eduroam is the recommended wireless network in use at LSE which allows secure connectivity across campus including in major lecture theatres and public areas.

The exact method to connect to Eduroam will vary from device to device but you will need to:

- Make sure you are at a place on campus which has wireless network availability
- Enable WiFi on your device. Scan for networks and choose Eduroam
- When prompted, enter the following information:
- Username: Your LSE email address, e.g. j.bloggs@lse.ac.uk
- Password: Your LSE network password
- For more information and detailed guidance,

see lse.ac.uk/intranet/LSEServices/IMT/guides/wirelessNetworks/eduroam.aspx.

Student Hub App

We are launching a new app, the LSE Student Hub, which will be available on iOS, Android and an online web app from September onwards. The Student Hub lets you:

- Organise your timetable, events and key academic dates all in one place.
- Collaborate and connect with your friends, peers and the LSE community.
- **Discover** and find your way around the campus, and stay up to date with news and events from around the School.

You can find out more here: info.lse.ac.uk/current-students/putting-students-first/student-hub

