



School of Mathematical Sciences

Guide for postgraduate research students
and their supervisors

2011-2012

1. Summary of Essential Information for MPhil and PhD students

- School of Mathematical Sciences, Queen Mary, University of London, Mile End Road, London E1 4NS
- Web and pdf versions of this handbook and further background information can be found at <http://www.maths.qmul.ac.uk> in the Postgraduate section. Contact details and office hours for all staff can also be found on the School website.
- The Director of Postgraduate Research Studies for 2011-2012 is Professor Peter Keevash.
- The Administrative Officer (Postgraduate Studies and Research) is Liisa Matomäki. She is based in 101, the School Office in the Mathematics Building. She can help you with any general administrative queries during the course of your studies.
- The Executive Officer (Teaching and Research) is Dr Vivien Easson. Her role involves managing teaching and learning strategy in the School, including for postgraduates.
- The Postgraduate Tutors in each research area have direct responsibility for the research students. They appoint supervisors and assess students' progress.
 - Applied Mathematics Dr Rainer Klages
 - Astronomy Professor Richard Nelson
 - Pure Mathematics Professor Peter Cameron
 - Statistics Dr Heiko Grossmann
- The Postgraduate Research Committee oversees the teaching and training of postgraduate research students. It has two elected postgraduate student representatives, one from the Mathematics Research Centre and one from the Astronomy Unit.
- For details of important dates for new students see **Induction** (Section 2).
- For a list of the important deadlines throughout each year see **Key Dates** (Section 3).
- For details of the reports you need to submit to transfer to PhD status or complete your MPhil / PhD see **Assessment and Progression** (Section 4).
- For details of how to claim expenses see **Expense Claims, Travel and Prizes** (Section 5).
- Students will be allocated teaching/marking duties of around four hours per week during semesters. For details of how this process works see **Teaching and Marking** (Section 6).
- For details of research seminars and training see **Seminars and Training** (Section 7).
- Students should expect to meet with their research supervisor regularly, normally weekly. Students will also be allocated a second supervisor to act as a mentor and to stand in if the main supervisor is away temporarily.
- **The extension number for Security is 5000. For emergencies ring 3333.**

Please note that the Astronomy Unit is now part of the School Physics and Astronomy (from 1st August 2011 onwards). Therefore the review and progression procedures mentioned in this handbook may be different for the Astro research students. Please contact the Postgraduate Astro Tutor if you have any questions.

2. Induction

New research students will receive instructions from the central admissions on how to register and obtain a student card.

All new students should attend the **Research Student Induction Meeting**. In 2011 this will be held on **Wednesday 21st September**.

At this meeting students will be welcomed to the School of Mathematical Sciences and the Director of the Postgraduate Research Studies will explain the structure of the research studies. Students will also find out e.g. how obtain computer accounts, how access the School of Mathematical Sciences' network and health and safety in the building.

New research students who are unable to attend this meeting should go on arrival to the School Office (101) in the Mathematics Building, and introduce themselves to the Administrative Officer responsible for Postgraduate Studies and Research.

Other events happening during the induction period:

- **Postgraduate drinks reception** for new and existing graduate students and all staff involved in postgraduate studies and support will take place on **Wednesday 28th September** at 5pm in the School of Mathematical Sciences foyer area.
- **MSOR 'Supporting Postgraduates who Teach' workshop on Friday 30th September** in room 203 Maths building. Please note that this **workshop is compulsory for all new Mathematics and Statistics students** and highly recommended for all new Astrophysics students.
- An induction organised by the Learning Institute, 5th and 6th October 2011. This 2-day event should be attended by all PhD students who are starting their degrees this autumn. It will be an opportunity to meet other students from all over the college, talk to existing staff and students, gather information about what the college has to offer, and find out what you need to know to make it as a research student. More information and how to register can be found at <http://www.learninginstitute.qmul.ac.uk/resdev/pg/research-student-induction-2011/>

Other useful things to know

Research students are usually allocated a desk in one of the open-plan offices of the building on the second and third floors. The postgraduate sections of the School website should have most of the information you will need to know, but if you can't find an answer there, please ask the Administrative Officer in the School Office (101).

Photocopiers, pigeonholes and stationery can all be found in the Common Room (102), with another photocopier in the Astronomy Unit (409). Please use these and other facilities such as telephones **only** for purposes associated with your studies.

Matthew Spencer (Mathematics Research Centre) and Joe Elliston (Astronomy Unit) are the current postgraduate representatives and will be happy to discuss any matters of concern.

3. Key Dates

Every three months – October, January, April, July – your regular meeting with your supervisor should include a strategic discussion about your research progress (see Section 4 for more details).

The “mid-September” review meetings may be held any time from the start of July onwards by agreement between student, supervisor and assessors.

For part-time students and those who start their programme at a time other than September, review dates should be altered accordingly. Students should be proactive in ensuring that review meetings happen.

First year

September	School Induction event; Enrolment and registration for research programmes; Postgraduate reception; MSOR teaching workshop
October	The Learning Institute Induction days
May	Submission of written reports by supervisor and student to assessors
May/June	Examinations for taught courses; First-year review
End of August	Deadline for submission of the 1 st Year Report (progression to second year) form

Second Year

September	Re-enrolment; Postgraduate reception
Early May	Ann Cook Poster Competition as part of School Postgraduate Research Day
August/September	Submission of written reports by supervisor and student to assessors
Mid September	Second year review and assessment interview

Students who started their studies before September 2010 will have their MPhil status reviewed in their second year review. If you do not obtain a transfer to PhD status but are offered the chance to submit an MPhil, you should talk to your supervisor and Postgraduate Tutor who will explain how to go about this.

Third Year

September	Re-enrolment; Postgraduate reception
Early May	Third Year Research Talks as part of School Postgraduate Research Day
Early September	Submission of written reports by supervisor and student to assessors
Mid September	Third year review and assessment interview: timetable for completion

Fourth Year

September	Re-enrolment; Postgraduate reception and meeting for continuing students
September to February	Applications due for transfer to writing up status (QMRD03).

About three to four months before you expect to submit your PhD thesis, you should complete a PhD examination entry form (RD01). When submitting your thesis you should also submit Research Degree Thesis Submission Form (RD02). This should be at least one month before any date set for the oral examination. You can find further details and links to the forms on the School website in the Postgraduate section.

During your time in the School we also expect you to:

- Give several research seminars in the School.
- Give a talk or present a poster at a national conference (e.g. a postgraduate conference).
- Attend at least one international conference.
- Spend the equivalent of 80 hours per year undertaking professional development or academic training. This should be detailed in your Personal Development Plan at the end of each year. See Seminars and Training (Section 7) for more details.

4. Assessment and Progression: overview

Please note that the Astronomy Unit is now part of the School Physics and Astronomy (from 1st August 2011 onwards). Therefore the review and progression procedures mentioned in this handbook may be different for the Astro research students. Please contact the Postgraduate Astro Tutor if you have any questions.

Research is unlike other activities that most new students have been involved with before. Even a brilliant history of passing examinations on taught programmes is not a guarantee of success in research. It is better for all concerned - not least you as students - that we identify those few students who are not cut out for research earlier rather than later. Partly for this reason, we have a review of each student's progress during the first year of study, and at the end of each subsequent year.

Throughout this section all timings are given for a full-time student on the degree in question. The timings will be modified appropriately for part-time students.

From September 2010 all new research students are directly registered for a PhD degree. Students initially registered for MPhil are transferred to the PhD degree, assuming progress has been satisfactory; often the transfer to PhD status is a recommendation of the second-year review meeting (similar review process applies to those students who have started September 2010 or after as well).

All research students are allocated two supervisors. Your principal supervisor is allocated when you commence your studies and has responsibility for your academic progress during the research studentship. Your second supervisor will be allocated within a month of your arrival and will normally act as a mentor, and as a deputy for when your principal supervisor is away. The second supervisor's responsibility usually includes being an assessor for the annual reviews (see below) and may sometimes extend to joint academic supervision.

Annual review

Research students' progress is reviewed annually. These reviews have a common format, but the details vary from year to year. Each review is centred on a meeting of the student and two assessors. One of the assessors (usually the second supervisor) is the principal assessor and is responsible for ensuring the review is carried out efficiently. Assessors are proposed by the supervisor during the first year of study, the choice being ratified by the appropriate Postgraduate Tutor. As far as possible, the assessors remain unchanged over the entire period of study.

The common format for reviews is as follows. The specifics of the review vary from year to year.

1. **At least two weeks in advance of the review meeting**, student and supervisor send separate written reports to the assessors. The supervisor's report will always be a short (~1 page) overview of progress. The student's report will vary in length and content according to the year (see below).
2. **Soon after the review meeting**, the assessors complete a report form on the student's progress and deposit this and the other reports with the Administrative Officer (Liisa Matomäki) who will copy the assessors' report to the student and supervisor. This report will contain recommendations for transfer of registration from MPhil to PhD or to writing up status if appropriate.
3. **After the review meeting** the Director of Postgraduate Research Studies together with the Postgraduate Tutor, will determine any actions that may be required. This might include transfers of registration, remedial action, or ad-hoc intermediate reviews.

4a Assessment and Progression: annual reviews

First year review

The review meeting must take place before the end of June. This requirement is to allow the student time to take remedial action, if necessary, before progression to second year is decided at the end of August.

The student should produce a short report (usually no more than six A4 pages) outlining the problem they are addressing, the background reading they have undertaken, progress made and plans for the future. This report should also list courses they have taken and examination results (if any) from these courses. The student should also submit a Personal Development Plan form.

Recommendations may include certain goals student should achieve before the second year review. In some cases, if inadequate progress has been made, the assessors might recommend a remedial course of action with the aim of getting the student onto a more successful track.

Second year review

In this review we are looking for evidence of all the qualities necessary for the production of a successful PhD thesis. In addition to adequate levels of scholarship and evidence of progress on the programme of research, the student will be required to demonstrate an ability in mathematical writing. Therefore, the written report by the student is more substantial for this review: at least 20 A4 pages. If the transfer of registration from MPhil to PhD has not already taken place (students who started their studies before September 2010), then the case for transfer will be considered at this review.

This report should ideally be viewed as a step in the production of the thesis, and much of the text could find its way, in modified form, into the final production. For example, the report might consist of a projected table of contents, a draft chapter, and a programme of work for the coming year. Depending on progress, the draft chapter might describe a result already obtained, or it might describe the area of study and progress made so far. If the student has a published paper (say on ArXiv), it is perfectly acceptable to submit that, with a short description of how that result fits into the bigger picture, together with a programme of work for the coming year.

The student should also submit a Personal Development Plan form.

The two assessors for the review will normally be the same two assessors as last time. They may recommend that the student's registration be transferred to PhD; or they may propose a remedial course of action followed by a review after a specified period of, say, three months; or they may suggest that a sensible course is to submit for an MPhil within the next few months, assuming that enough work has been completed for this to be feasible. At this stage an MPhil is a reasonable outcome for two years' work, and allowing further years to pass with no strong evidence that a PhD will result is generally not in the student's interest.

The review meeting should take place before the start of the third year.

The form for the transfer of a student's registration from MPhil to PhD is available on the Research Degrees Office's (RDO) website and the School Office. It will often be filled in by the student's assessors following their recommendation for transfer at the second year assessment or later date

(see Section 4). The form must be signed by the Director of Postgraduate Research Studies and accompanied by a completed Personal Development Plan form recording professional and transferable skills courses undertaken and seminars and conferences attended.

Third-year review

Some students will be able to submit their thesis during the third year. For those that do not, the third year review provides a chance for all involved to assess progress and determine courses of action with respect to funding and payment of fees. The main concern is to ensure that a realistic plan exists for completing the thesis expeditiously, and certainly before the end of year four. The report, usually no more than six A4 pages, should concentrate on describing the proposed structure of the thesis (i.e., table of contents), what has been done already, and what needs to be done. An important part of the report should be a realistic and robust timetable for completion of the thesis, which is also required for the College's formal process of transfer to writing up status.

The student should also submit a Personal Development Plan form.

The two assessors will comment on the viability of the proposed timetable, and if necessary suggest changes in scope if these seem necessary for timely completion. They may, if it seems beneficial, suggest a review of progress after a specified period.

The review meeting should ideally take place before the start of the fourth year.

Strategic discussions

Every three months – October, January, April, July – your regular meeting with your supervisor should include a strategic discussion about your research progress. Typically the first two strategic discussion reports of a first year research student might list courses being taken and papers being read; the second two might contain an outline of an initial research problem and a brief account of associated reading undertaken, and of any progress made. In later years there might be brief details of results proved or research projects to be undertaken, seminars given or to be given, papers or thesis chapters written or to be written and so on. Students should send an e-mail to their principal and second supervisors after the discussion summarising what was said and agreed, copied to the appropriate Postgraduate Tutor and to the address pgreports@maths.qmul.ac.uk read by the Director of Postgraduate Research Studies and the Administrative Officer. The Postgraduate Tutor should reply to students in acknowledgment.

4b Writing up status

Writing up status

Students who have done the bulk of the work towards the thesis, and who are now mainly “writing up”, may apply to the College for transfer to Writing-up Status (please see the RDO webpage for the exact conditions). Although students with writing-up status may continue to use the College facilities, they are not charged fees. Transfer should normally be considered towards the end of the third year, and certainly before funding expires. *Failure to make this application may make students liable for payment of fees to the College.* The form (QMRD03) is available online from the School or RDO websites.

The form must be signed by the Director of Postgraduate Research Studies, who will only do so if

the student and supervisor can provide a plan for completion of the thesis during the writing up period, with realistic timelines. A renewal of writing up status is only granted in exceptional circumstances and incurs a fee of £250.

4c Examination entry and extension to funding

MPhil/PhD Examination Entry

A description of the procedure for conducting research degree examinations may be found at the RDO's website. It is best to get your information from there, so you'll be sure it is up-to-date. The important thing to note is that the official procedures for examination entry, including the appointment of PhD (or MPhil) Examiners, take a considerable time. Therefore, students and supervisors must submit an Examination Entry Form (RD01, available from the RDO website) at least THREE MONTHS before the anticipated date of thesis submission. Note that there is a possibility that the lead time may be increased to four months, so you should check with the RDO website to make sure you have the latest information.

Funding for fourth year students

Because of the separate funding streams, the arrangements for funding fourth year students may differ between Maths & Stats, and Astro students. For 2011-12, Maths & Stats students supported by the EPSRC or College through a DTA (Doctoral Training Account) will normally be granted an additional six months of funding, provided they have made the transition from MPhil to PhD.

Sanctions: Students failing to transfer or submit within the above time limits may have office privileges withdrawn and/or become liable for payment of fees to the College.

5. Expense Claims, Travel and Prizes

Research students are strongly encouraged to participate in national and international research meetings. Forms are available from the School Office which allow students to apply for funding for travel, conference registration and subsistence. Decisions are taken by the Directors of Research: we support what we can, but the budget is not unlimited. Where an application is approved, students should follow current School and College procedures for purchasing tickets, insurance arrangements, and claiming expenses. See the postgraduate web pages for up to date procedures.

The **Eileen Eliza Colyer Prize** of £1,000 is offered each autumn for a research student in the School of Mathematical Sciences to study at another institution for an extended period with an expert in his or her area. The postgraduate web pages give further details of this and any other prizes that might be on offer.

6. Teaching and Marking

We strongly encourage all students to undertake at least four hours of tutoring and marking per week during the teaching semesters. Note that going beyond six hours per week requires the agreement of a student's supervisor and (if applicable) their grant awarding body. Students will be paid for this work at an hourly rate: in 2009/10 this was £12.32/hr for marking and £22.03/hr for tutoring.

We require a high standard in both marking and tutoring, and it is an important part of professional training for those considering an academic career, as well as being extremely good experience for many other professional careers. Students who undertake tutoring and marking are required to fill in the questionnaire on the reverse of the Personal Development Plan form (available from the postgraduate web pages). The allocation of markers and tutors is carried out just before the beginning of each academic year by the Executive Officer for Teaching and Research (Vivien Easson).

7. Seminars and Training

Taught Academic Modules

Mathematical science modules are provided by the School of Mathematical Sciences and also by the London Taught Course Centre for PhD students in the Mathematical Sciences (LTCC). The website for the LTCC is at <http://www.ltcc.ac.uk>. Courses start from mid-September onwards and you should check start dates early.

All first year research students in the School must attend, and be examined on, postgraduate modules to a total of 30 credits. As part of this, all first year PhD students in the Mathematics Research Centre are required to take at least four modules at the London Taught Course Centre. LTCC modules each count as 7.5 credits for these purposes, and a typical MSc module counts as 15 credits. Exceptions may be made for students who have already taken relevant postgraduate modules.

You should discuss with your supervisor which modules you should attend and which if any you expect to take for examination. Sometimes it may be beneficial to take more than the minimum quota of postgraduate modules, up to a maximum of 60 credits. It's important you do this soon after you arrive. The appropriate Postgraduate Tutor should be informed early in the academic year of the modules being taken. Include your exam results in the end of year report (see Section 4).

To register for the School of Mathematical Sciences' modules please get in touch with the Postgraduate Administrator.

Seminars and Training

Astronomy Unit: All research students in the Astronomy Unit are expected to participate in the weekly Astronomy seminars and more specialised discussion groups as part of their training. You should also attend the Postgraduate Astronomy Seminar.

Mathematics Research Centre: All research students in mathematics and statistics are expected to attend the regular seminars and discussion or study groups run by relevant research groups. You may also wish to attend the Queen Mary Internal Postgraduate Seminar (QulPS) which is a series of talks organised and given by postgraduate students in the Mathematics Research Centre.

Most seminars held in the School of Mathematical Sciences are preceded by tea and coffee available in the Common Room (102) and/or by refreshments afterwards. There are numerous seminar series held jointly with other London institutions. Talk to your supervisor and others in your research area to investigate seminars and conferences of interest. All Research Council sponsored students should attend a subsidised Research Council Graduate School during their second or third year. Other students may also wish to investigate this.

Research Councils recommend that postgraduate students undertake 10 days worth of transferable skills training per year. This can include computer skills, mathematical typesetting, language skills, communication skills and many other areas. You are expected to keep a record of all the courses and conferences you attend and record it on the School's Personal Development Plan form at the end of each year. You can find the form on the postgraduate web pages.

The School of Mathematical Sciences holds a Postgraduate Research Day each year in May. All third year research students give short talks on their research and all second year research students enter a poster in the Ann Cook Poster Competition. Both activities have been found to be very useful training opportunities by those who have taken part – whatever their intended careers.

8. Background information

Researchers in the School, both staff and postgraduate students, are members of either the Mathematics Research Centre or the Astronomy Unit, depending on whether their primary research interests lie in mathematics and statistics or in astronomy and cosmology. More details about specific research groups or staff research interests can be found on the School website.

Students may wish to consider associate membership of a professional body. Details for how to go about registering for membership at reduced prices may be found on the postgraduate web pages.

The Postgraduate Research Committee meets formally twice a year. It is chaired by the Director of Postgraduate Studies. The other members are the Head of School, the School's Directors of Research, the four Postgraduate Tutors, the Executive Officer (Teaching and Research) and an elected postgraduate research student representative from each of the Mathematics Research Centre and the Astronomy Unit. The remit of this Committee covers every aspect of the teaching and training of postgraduate research students, from office accommodation to annual assessment procedures. Decisions concerning the progression of individual students, for example on the transfer of registration from MPhil to PhD, are delegated to the Director of Postgraduate Research Studies, in consultation with the Postgraduate Tutors.

If you have a problem, the most important thing to do is to talk to someone about it. This someone could be your first or second supervisor, your Postgraduate Tutor, the Director of Postgraduate Research Studies, the Student Support Officer, any other member of staff, your student representative or another research student. If the problem is one you prefer not to

discuss with a member of the School, you can obtain help and advice directly from the College's Advice and Counselling Service (<http://www.welfare.qmul.ac.uk>).

There are notices prominently displayed in the foyer of the Mathematics Building detailing procedures to be followed in the case of fire or other emergency. All postgraduate students should familiarise themselves with these instructions. They are reminded of the importance of evacuating the building quickly should the alarm sound; the lift must not be used in such a situation.

A description of the QMUL Health and Safety Guidelines can be obtained from the School Office. The extension number for Security is 5000; for emergencies ring 3333.