



**ROYAL HOLLOWAY**  
**University of London**

Mathematics Department

**Research Postgraduate Handbook**  
**2011-12**

September 2011

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# 1 Introduction

This *Handbook* is designed for use by all PhD and MPhil research students who are enrolled for a research degree and supervised by members of staff of the Mathematics Department at Royal Holloway, including those who are members of the Information Security Group.

This chapter of the *Handbook* serves as an introduction to the entire document. It contains a review of the scope and purpose of the document, general background information, and an overview of the contents of each of the main chapters.

## 1.1 Scope and purpose

The main purpose of this *Handbook* is to outline the roles and responsibilities of a research student, and all those with whom they interact as part of their research degree programme, within the Mathematics Department. Much of the information is of a general advisory nature, but there are also specific rules and regulations that must be followed. It is important to note that this *Handbook* is not intended to replace any of the formal regulatory documents published by Royal Holloway (see section 1.3).

This *Handbook* is primarily aimed at research students who intend to transfer from an MPhil to a PhD degree programme at some stage during their study period (see section 3.5). However, most of this *Handbook* also applies to research students who only intend to complete an MPhil degree.

The advice in this *Handbook* applies equally to full-time and part-time research students. Where necessary, throughout the *Handbook*, notes that are directed explicitly to part-time research students are inserted after the prefix **PT**.

## 1.2 Roles and responsibilities in the Department

The *Director of Graduate Study (DoGS)* is the member of staff within the Mathematics Department with overall responsibility for research student admissions and the overall administration of research students. Each research student has a *supervisory team*, which typically consists of a *supervisor*, who is primarily responsible for the student's research programme, and an *adviser*. Section 3 of this *Handbook* discusses interaction with the supervisory team in more detail. For a full statement of the responsibilities of the supervisor and adviser see the *Code of Practice* (section 1.3).

## 1.3 Important documents

Postgraduate research students pursue independent research in academic departments, leading to the award of the degree of MPhil or PhD. Successful progress depends primarily on their own efforts, supported by those of their supervisors, but also on the research environment in the department and on the quality of their research training. The College's *Code of Practice for the Academic Welfare of Postgraduate Research Students*:

[http://www.rhul.ac.uk/Registry/academic\\_regulations/PGR\\_Code\\_of\\_Practice.html](http://www.rhul.ac.uk/Registry/academic_regulations/PGR_Code_of_Practice.html)

sets out the practices and procedures which underpin these efforts and outlines, amongst others, the responsibilities of student, supervisor, adviser and the student's department(s).

As a research student of the College you should therefore ensure that you familiarize yourself with the content of the Code as well as with the College's *Research Degree Regulations*:

[http://www.rhul.ac.uk/Registry/academic\\_regulations/Postgraduate\\_Research\\_Regulations.html](http://www.rhul.ac.uk/Registry/academic_regulations/Postgraduate_Research_Regulations.html)

which set out the regulations governing all aspects of MPhil/ PhD study from admission to completion. A range of useful information is also available through the College's *Postgraduate Research Students* page:

<http://www.rhul.ac.uk/pgrstudents/home.aspx>

#### **1.4 Useful electronic resources**

A variety of information and resources useful for research students can be found on the following two websites, which are almost identical in content and henceforth collectively referred to as the *departmental website*:

<http://www.ma.rhul.ac.uk/prospective/phd>

<http://www.isg.rhul.ac.uk/phd>

In particular, research students are recommended to make themselves familiar with the section of the departmental website devoted to *Resources for Students*, where useful links, documents and forms can be accessed, including an electronic copy of this *Handbook*.

#### **1.5 Structure of this Handbook**

The remainder of this *Handbook* has the following chapters:

- Chapter 2 is aimed at new research students and describes the induction process, departmental facilities, departmental activities, research training and requirements for the first year of a research programme.
- Chapter 3 discusses the relationship between a research student and their supervisory team, including supervisory meetings, upgrade, the role of the adviser, research support activities and how to raise issues and concerns.
- Chapter 4 discusses the process of completion of a research degree, including the submission and examination of the thesis.

## 2 Getting started

This chapter of the *Handbook* is primarily aimed at new research students. It describes the induction process, departmental facilities, departmental activities, research training and requirements for the first year of a research degree programme.

### 2.1 Registration

All new research students must first register with Royal Holloway. This process is not something in which the department or the supervisory team are directly involved. However, until a research student has officially registered, they cannot access any central Royal Holloway services. Once a research student has registered, they are entitled to a *College Card* and a Royal Holloway email address.

Enrolment on the departmental computer network can only take place after a Royal Holloway email address has been obtained. Information on how to enrol on the departmental system will be made available to new research students at the departmental induction session (see section 2.2).

### 2.2 Induction

Research students commencing their studies at the start of the academic year (late September / early October) should attend two induction meetings:

1. The Mathematics Department induction session takes place towards the end of induction week. This normally takes the form of an informal lunch, followed by a short presentation and completion of departmental registration.
2. The Royal Holloway induction session takes place in the first week of term. This provides an introduction to the College's Postgraduate Research Students services, as well as providing an opportunity to meet new research students from other departments.

Research students commencing their studies at any time other than the start of the academic year are advised to request departmental induction information from the DoGS and to attend the next available induction sessions.

**PT:** While attending regular events at the Royal Holloway campus can be difficult, part-time research students are strongly advised to attend these two induction sessions.

### 2.3 Facilities

All full-time research students (see section 3.9 for a strict definition) are provided with a desk in a shared office and a personal computer (if required). These offices have a telephone, which can be used to make external calls. Research students should not abuse this facility. There is a system for logging and billing private calls.

We are unable to provide a desk for research students who are not full-time. Research students who are not full-time should contact the DoGS if short-term office space is required.

All research students are welcome to use the departmental common room and adjacent kitchen in McCrea 237. Tea and coffee may be made at any time (there is a small charge). There is also a fridge and a microwave cooker. While cups and saucers are available, most members of the department provide their own mug.

Research students have shared post boxes in McCrea 221 and may also use the photocopier in this room.

A range of support services are provided by the departmental office (McCrea 243) These include the provision of basic stationery, a contact point for computing queries, help with travel bookings and expense claims.

## **2.4 Initial meeting with supervisory team**

Every research student should arrange an initial meeting with their supervisory team as soon as possible after arrival. Every supervisory team has their own style of managing the development of research students, but the first few meetings with the supervisory team are likely to cover the following issues:

- *Initial focus of research work.* This will typically involve reading around a particular research topic. It is useful to bear in mind that, during the first year, new research students are required to produce a report and give a presentation (see section 2.7). The initial focus of research work is often directed towards satisfying these requirements.
- *Role of the adviser.* While advisers have pre-specified duties (see section 3.6), some advisers have greater involvement in day-to-day supervision of a research student. The exact role of the adviser should thus be determined at an early stage. Even if the adviser will not play a major role in day-to-day supervision, a new research student should make early contact with the adviser and is encouraged to visit the adviser if, for any reason, there are problems that cannot be resolved by the supervisor (or just for a second opinion on anything).
- *Supervisory meeting schedules.* Arrangements should be made regarding the approach to routine research meetings with the supervisory team (see section 3.2).
- *Attendance at departmental activities.* The attendance at relevant seminar series, reading groups and taught-programme lecture courses within the department should be discussed (see section 2.5).
- *Research training needs.* Research training needs should be discussed with the supervisory team (see section 2.6).

**PT:** It is particularly important that part-time research students establish clear working schedules with the supervisory team from the outset and agree to keep them informed if personal circumstances change during the period of registration.

## **2.5 Seminars, Reading Groups and Lecture Courses**

Attendance and participation in research seminars and reading groups that are run in the department is a vital part of the research development of every research student.

Research students are expected to attend, and take an active part in, all appropriate departmental seminars and reading groups. Note that this also applies when the topic of the session is not obviously directly related to the work of the research student. There are at least three important reasons for such involvement:

1. Active seminar series and reading groups are an important component of the departmental research community and involvement in them helps integration with this community.

2. They expose research students to different techniques for presenting research (the ability to effectively communicate research is a skill that is required in order to complete any research degree).
3. It is surprising how often ideas can be obtained through exposure to research in another area.

It is particularly important that a research student gets involved in any relevant research-student-only seminar series that are run within the department. Research students are encouraged to take an active role in both attending and giving such seminars.

The department also runs a significant number of advanced (masters level) taught-programme lecture courses in both Mathematics and Information Security. Research students should discuss with their supervisory team which (if any) masters courses they should attend. Similar remarks apply to undergraduate courses.

**PT:** It may be very difficult for part-time research students to engage with departmental activities of this type. Mechanisms for obtaining similar experiences and skills need to be discussed with the supervisory team.

## 2.6 Research Training

In 2002 the *Roberts Report* identified a need for skills training for all postgraduate researchers. Supported by funding from Research Councils UK and a concordat agreed by UK higher education institutions, universities across the UK are now required to provide a postgraduate skills training programme and ensure that postgraduate research students receive appropriate training. Research skills training is therefore **a mandatory part** of any postgraduate research programme at Royal Holloway.

You should discuss your training needs with your supervisor(s) and adviser soon after you start your research programme and fill out the *Research Student Training Log* with details of courses that you should attend during the year:

<https://www.rhul.ac.uk/pgrstudents/documents/pdf/rstraininglog.pdf>

Although further discussions on your training may take place during the year during your supervisory meetings, at least once a year normally at the time of the annual review you, together with your supervisor(s) and adviser, should review the training completed in the previous year and draw up a plan for the following year. The training plan is likely to include both generic research skills courses and training that is specific to the research project. You should be fully engaged with the design of your training programme, as this is an important part of your personal development planning, and should be considering what will be of benefit to you in both the short and long term. Completion of the required training is a prerequisite for the upgrade from MPhil to PhD so will also be checked at the time of your upgrade.

The College's *Code Of Practice for the Academic Welfare Of Postgraduate Research Students* stipulates the general research skills training requirements for MPhil/PhD students. Further details are provided on page:

<http://www.rhul.ac.uk/pgrstudents/forstudents/gsp/trainingmphilphd.aspx>

- An average of 5 days of training per academic year for full-time self-funded students, with a total of 15 days across three years of study.
- An average of 5 days of training per academic year for students funded by organisations other than UK Research Councils, such as Royal Holloway itself or a Research Group, with a total of 15 days across 3 years of study.

- An average of 10 days per academic year for full-time students funded by UK Research Councils (AHRC, NERC, ESRC, EPSRC, STFC, BBSRC, MRC) with a total of 30 days across three years of study.
- ***The training requirements are the same for part-time students, but operate on a pro-rata basis (minimum of 2.5 days per academic year)***

Research training not only benefits research, but also provides research students with important transferable skills. Research training is mainly provided in three different ways.

### **1: Departmental Research Training:**

The Mathematics Department runs an annual series of research training sessions. It is expected that research students attend as much of this programme as possible. The sessions vary from year to year, but generally cover topics such as:

- Accessing online resources;
- LaTeX skills workshops;
- Presenting research;
- Writing and reviewing scientific papers;
- Critical thinking.

The full programme will be made available on the departmental website. Any particular requests for training session that could be run by the department should be made to the DoGS.

### **2: Generic Skills Programme:**

The College runs a *Generic Skills Programme* that is designed to enhance the transferable skills of all Royal Holloway research students. It is a Royal Holloway requirement that all research students take part in relevant sessions from the *Generic Skills Programme*. Indeed, some of the research training sessions on this programme are *compulsory*.

Research students should make themselves aware of this programme and, with the help of their supervisory team, select and enrol for research training sessions that will be useful. In past years these have included:

- Managing your research;
- Creativity, motivation and personal effectiveness;
- Delivering a knock-out presentation;
- Preparing for the viva;
- Academia, research and beyond – preparing for your future career;
- Writing skills (the Mathematics Department is particularly keen that all research students take every opportunity to improve writing skills).

In many cases it may not be clear whether a particular research training session will be useful or not. The only solution is to attend. It is very unusual not to gain some benefit

from involvement in any type of research training session (at the very least, it provides an opportunity to meet research students from other departments, which can be highly beneficial).

Full details of the courses on offer as part of this programme, as well as a guide to web registration, details on how to book, FAQs and the *Generic Skills Programme Handbook* that discusses the programme in greater depth, are available at:

<https://www.rhul.ac.uk/pgstudents/forstudents/gsp/home.aspx>

It is wise to visit this site fairly regularly, as the sessions offered may change during the year.

### **3: Academic Writing Skills:**

The College offers a number of courses on academic writing, which can count towards your annual research skills training requirement. Royal Holloway International (RHI) offers additional support for research students whose first language is not English. These courses do not, however, count towards your training requirements.

Details of these courses and additional support are available on the Generic Skills Programme webpage:

<https://www.rhul.ac.uk/pgstudents/forstudents/gsp/home.aspx> .

### **4: External Research Training:**

It is also worth looking beyond Royal Holloway for relevant research training. External organisations, research councils and indeed other universities may offer suitable research training sessions. Royal Holloway research students are also free to attend research training sessions offered St George's and Kingston University.

### **The Research Student Training Log:**

*It is important that all received research training is documented.* This can be done by maintaining the details in the *Research Student Training Log*, which is an electronic document that can be downloaded from the departmental website.

At the initial meeting with the supervisory team, the *Research Student Training Log* should be commenced by identifying research training needs for the coming year. A hard copy of the latest version of the *Research Student Training Log* should be reviewed at the Annual Review meeting and submitted to the Departmental Office (see section 3.4).

**PT:** Part-time researchers should endeavour to participate in as many research training activities as they can. It is, however, acknowledged that coming to the Royal Holloway campus to attend many of the campus research training sessions can be difficult. Part-time research students should note the following:

- The College sometimes offers *All-in-one Training Days* where several research training sessions from the *Generic Skills Programme* are combined and run on the same day. These are often run exclusively for part-time research students.

- The College offers some research training sessions within the Moodle online environment, which can be followed without attending campus.
- Part-time research students may be able to engage in training activities at their workplace which are equivalent to some of the research training activities offered on campus (for example, with respect to presentation skills).

## **2.7 First Year Requirements**

The Mathematics Department has two compulsory requirements for every first year research student.

### **1: First Year Report:**

All research students are expected to produce at least one substantial report on a research-related topic. Whilst this does not need to be publishable, it should nevertheless relate to possible research directions. There is no standard format for this report. It could, for example, take the form of:

- a detailed discussion of a research paper, e.g. rewriting the results in the research student's own notation and providing some discussion of the research results and possible unsolved problems;
- a review of a research topic, covering the major published work and highlighting unsolved research problems;
- a publishable paper.

The *First Year Report* should demonstrate an ability to communicate clearly in a scientific way, including appropriate referencing. It should be prepared in such a way that it could, if required, be made available on an internal website.

### **2: First Year Presentation:**

In March or April each year, the DoGS will arrange a day (or days) at which all first year research students will be expected to give a presentation of 20-30 minutes. All supervisors and other research students are encouraged to attend and take part in what is typically a very rewarding experience for all concerned. The subject of the presentation is a matter to be agreed upon by a research student and their supervisory team.

The *First Year Report* and the *First Year Presentation* need not be related (although it is natural that they might be).

Note also that, as well as being invaluable experiences, successful completion of these two first year activities is one of the requirements for the progression towards upgrade from MPhil to PhD (see section 3.5).

**PT:** While these requirements should be met by the end of the second year of a part-time research degree, it is common for part-time research students to also conduct them in their first year, as both activities act as a useful focus for early research work. This issue should be discussed with the supervisory team.

## **2.8 Language assistance**

Writing and communicating research is particularly challenging if English is not a research student's first language. Writing a thesis does require a highly sophisticated

command of written English. If English is not the first language of a research student then they should seek every opportunity to improve their language skills. Such opportunities include producing written work and giving presentations.

Royal Holloway International runs in-session courses on English for those research students whose first language is not English. These are highly recommended and full details can be obtained from:

<http://www.rhul.ac.uk/international/support/home.aspx>

It is particularly important that such research students attend any research training sessions that relate to presentation and writing skills (see section 2.6).

## **2.9 Communication channels**

It is extremely important that a research student stays in touch with their supervisory team, the Mathematics Department, and Royal Holloway more generally, throughout their studies. As a result it is vital that email is regularly monitored.

The DoGS and Royal Holloway central services will *only* use Royal Holloway email addresses to communicate with research students (regardless of any other arrangements that have been reached with the supervisory team). If a research student does not intend to read email at their Royal Holloway account then it is essential that email forwarding is put in place so that emails sent to their Royal Holloway address can be passed on to an account which will be read.

**PT:** This issue is particularly important for part-time research students, who may not regularly use a Royal Holloway email account.

## 3 Interacting with the Supervisory Team

This chapter is concerned with matters relating to the day-to-day supervision of research students. We discuss the relationship between a research student and their supervisory team, including supervisory meetings, upgrade, the role of the adviser, research support activities and how to raise issues and concerns.

### 3.1 General remarks

The Mathematics Department encourages research students to see their supervisory team as and when they wish. Research students and the supervisory team should meet frequently at seminars, reading groups, morning coffee breaks, etc., and if this occurs then it is easy for progress to be monitored. Historically we have found that this system encourages independent, self-motivated, original research.

A detailed list of the obligations of supervisors towards their research students (and vice versa) is provided in the *Code of Practice* (see section 1.3).

### 3.2 Regular supervisory meetings

Formal appointments for meetings between research students and supervisors may or may not be necessary. In any event, research students are strongly encouraged to meet their supervisory team frequently on an informal basis; typically the frequency of such meetings is between once a week and once every two or three weeks (not counting social encounters). It is important for research students to meet their supervisory team regularly to discuss their work, and also to discuss any other problems that may arise. Research students often get 'stuck', and the supervisory team can often help research students to get past obstacles that may otherwise completely stop their progress.

**PT:** The format of such meetings with respect to part-time research students should be carefully discussed with the supervisory team. It may be appropriate, for example, to attend the Royal Holloway campus once every few months, but to have more regular exchanges by email or telephone.

### 3.3 Quarterly Review Meetings

Apart from the routine informal meetings, there is a requirement for all research students to meet their supervisory team more formally from time to time. The departmental policy is that there should be (at least) four formal meetings between the supervisory team and the research student in every academic year.

These *Quarterly Review Meetings* should take place around the start of January, April, July and October of each year and are intended to provide an indicator of progress and a guide to future plans. At a minimum, they should involve the research student and their supervisor. At the end of each meeting, the *PhD Quarterly Review Meeting Report Form* should be completed. This form can be downloaded from the departmental website. While it makes sense for both the research student and supervisor to store this document electronically, a signed hard copy should be handed in to the Departmental Office in McCrea 243.

**PT:** The requirement for *Quarterly Review Meetings* also applies to part-time research students, even though the progress made each quarter is expected to be less than for a full-time research student. In some cases it may be appropriate for the agreement on a *Quarterly Review Meeting Report Form* to take place by email, although a preferable

option would be to use the need for this meeting to take place as a reason to attend the Royal Holloway campus.

### **3.4 Annual Review Meetings**

Although you will meet regularly with your supervisor during the academic year, your academic progress is formally reviewed at least once every 12 months, unless you have interrupted your studies, in which case the review will take place not more than two months after you have formally resumed your studies.

*Annual Reviews* and *Upgrade Meetings* are conducted in a face-to face meeting between you and a panel consisting of your supervisor(s), adviser and at least one other academic from outside the supervisory team.

Every research student has a formal *Annual Review* before the end of each year of study. Thus, for research students who commend their studies at the start of the academic year, the *Annual Review* should take place in September. The *Annual Review* need not coincide with a *Quarterly Review Meeting*, but it may be appropriate that it does.

The purpose of the *Annual Review* is to take a broader look at progress and future plans than is typically done at *Quarterly Review Meetings*. The *Annual Review* is a formal meeting between, at a minimum, the research student and an *Annual Review Panel* consisting of:

- the supervisor;
- the adviser;
- another member of academic staff (from the Mathematics Department).

Should the adviser not be available then it is the responsibility of the supervisor to find a further member of staff to attend this meeting (in this case the *Annual Review Panel* will be the supervisor and *two* further members of academic staff).

At this meeting, the *Annual Review Panel* should seek to understand the progress that has been made towards the research degree, and provide feedback on progress and future research plans. The discussion at the meeting should be sufficiently detailed to enable the panel to complete the *Research Degree Student Review Form*, which can be downloaded from the departmental website.

Any extenuating circumstances that may have affected performance should be submitted to the supervisor at least one week before the *Annual Review* (see section 3.14).

Whilst the precise form of the meeting is up to the supervisor, the following arrangements are typical:

- The supervisor will ask the research student to commence with a short (e.g. 15 minute) presentation covering the research work that has been conducted over the past year. This should also include plans for the next year and mention of all research training and development activities that have been undertaken. If the research has progressed sufficiently (and necessarily if the *Annual Review* is also an *Upgrade Meeting*, see Section 3.5) plans for completion of the thesis should be discussed. The research student should expect to answer questions from the panel during this presentation.
- In advance of the meeting, the research student should produce a short (around two pages) written *Annual Report* covering much of the same ground as the

presentation, to be circulated either prior to the meeting or at the meeting itself. The research student should be prepared to discuss any issues arising from this report during the meeting.

- The research training activities undertaken in the past year should be reviewed by inspection of the *Research Student Training Log* and research training needs for the next year identified (see section 2.6).
- If the registration of the research student has not yet been upgraded from MPhil to PhD (see section 3.5) then the requirements to be met before this can happen should be discussed.
- The *Research Degree Student Review Form* should be completed and signed by all present (the section relating to upgrades can be ignored unless the *Annual Review* is also an *Upgrade Meeting*, see Section 3.5). If appropriate, the latest *PhD Quarterly Review Meeting Report Form* should also be completed and signed (this identifies shorter term goals).

At the end of the *Annual Review* the *Annual Review Panel* will fill in a *Research Degree Student Review Form*, which will be signed by panel members present at the *Annual Review*, and will provide details of the outcome of this meeting. The student will be given an opportunity to fill in comments at the end of the form, should they so wish.

In most cases the panel will indicate that they are satisfied with a student's progress and may also confirm that the student has successfully upgraded from MPhil to PhD, where relevant (see section 3.5). However, in some cases the panel may feel that the work presented is not of the required standard. In the case of an upgrade, the panel may decide not to permit the student to upgrade at that time. Where work presented is unsatisfactory, details of the problems and the course of action to be taken will be noted in the *Research Degree Student Review Form*. Additionally, the panel may decide that it is necessary to issue a formal warning. Details of the formal warning process, which could lead to termination of registration, are outlined in Section 10 of the *Research Degree Regulations*.

Full details of the regulations governing the annual review and upgrade process are outlined in Section 9 of the *Research Degree Regulations*.

At the end of the meeting the following documentation should be **returned to the departmental office** in McCrea 243:

1. Completed and signed *Research Degree Student Review Form*.
2. A copy of the student's *Annual Report*.
3. The hard copy of the latest version of the *Research Student Training Log*.
4. Completed *Student Feedback Questionnaire* (this is a very basic confidential and anonymous feedback form that should be completed by the research student but not shown to the supervisory team, and can also be downloaded from the departmental website).
5. Completed and signed *PhD Quarterly Review Meeting Report Form* (if appropriate).

**PT:** Annual reviews for part-time research students should take place as face-to-face meetings, except in exceptional circumstances (in which case, for example, a conferencing tool could be used as a substitute).

### 3.5 MPhil to PhD Upgrade

All research students are initially registered for the degree of MPhil, with the opportunity of upgrading to the PhD programme *within the first two years* of full-time study (*four years* of part-time study) following a formal review of progress. Only when candidates are exceptionally well qualified (for example, if they already hold an MPhil degree) will Royal Holloway consider initial registration for the PhD degree.

**IMPORTANT:** Please note that research students **must upgrade within the first two years of full-time study (four years of part-time study)**. If upgrade has not happened within this period then research students cannot complete a PhD and may only submit a thesis for an MPhil degree.

Royal Holloway considers the upgrade meeting as an “examination” and, as such, only permits two attempts at upgrade to take place. **A first upgrade attempt must be made within the first 20 months of full-time (40 months of part-time study).**

The most common stages at which to conduct *upgrade* are:

- *At the first year Annual Review meeting:* this applies to research students who have made excellent progress in the first year and are already have a reasonable idea of the direction of their future research work (and final thesis topic).
- *At a special Upgrade Meeting sometime during the second year:* in this case it is common for targets to have been set during the first year *Annual Review* that must be met in order to enable *upgrade* to take place.

Any decision to upgrade can only be taken with the agreement of an *Upgrade Panel*, consisting of the supervisor, adviser and another member of academic staff (the same rules of membership of the *Upgrade Panel* apply as for the *Annual Review Panel*, see section 3.4).

The following minimum conditions must be met by any student who is upgrading from MPhil to PhD.

1. The *Upgrade Panel* should be convinced that the research student is *capable of completing a PhD degree within the remaining permitted time*. This decision should take into consideration all the work that the research student has performed since first registering for the research degree.
2. The first year requirements have been met (see section 2.7).

Before the *Upgrade Meeting* the research student should submit a short *Upgrade Report* similar in content to the *Annual Report* for *Annual Reviews*, which must include plans for completion of the thesis (if these meetings are being combined then the *Upgrade Report* is the *Annual Report*).

Any extenuating circumstances that may have affected performance should be submitted to the supervisor at least one week before the *Upgrade Meeting* (see section 3.14).

At the end of the *Upgrade Meeting* the *Upgrade Panel* will fill in a *Research Degree Student Review Form*, which will be signed by panel members present at the *Upgrade Meeting*, and will provide details of the outcome of this meeting. The student will be given an opportunity to fill in comments at the end of the form, should they so wish.

In most cases the panel will indicate that they are satisfied with a student's progress and may also confirm that the student has successfully upgraded from MPhil to PhD, where relevant. However, in some cases the panel may feel that the work presented is not of the required standard. In particular, the panel may decide not to permit the student to upgrade at that time. Where work presented is unsatisfactory, details of the problems and the course of action to be taken will be noted in the *Research Degree Student Review Form*. Additionally, the panel may decide that it is necessary to issue a formal warning. Details of the formal warning process, which could lead to termination of registration, are outlined in Section 10 of the *Research Degree Regulations*.

If the student fails to upgrade from MPhil to PhD on the first attempt, the *Upgrade Panel* may permit the student to have a second and final attempt, which must take place at the end of 24 months for full-time study or 48 months of part-time study.

Full details of the regulations governing the upgrade process are outlined in Section 9 of the *Research Degree Regulations*.

If there is agreement that the research student merits being upgraded, then the *Upgrade Panel* will complete the following documentation:

**Return to the departmental office** in McCrea 243:

1. Completed and signed *Research Degree Student Review Form* (this is the same form that is used for *Annual Reviews* and has a special section for upgrades).
2. The hard copy of the latest version of the *Research Student Training Log*.
3. A copy of the student's *Upgrade Report*.
4. A substantial piece of scientific work written by the student as evidence of ability to write a thesis (an obvious candidate is the *First Year Report*, see Section 2.7).

In addition, **return to the Examinations Office**:

1. Completed and signed *Research Degree Student Review Form*.

**PT:** The timing of *upgrade* for part-time research students varies much more than for full-time students. Unless exceptional early progress has been made, this process should normally occur two to four years into a part-time research degree. The conditions for upgrade are exactly the same as for full-time research students. The *Upgrade Meeting* should take place as a face-to-face meeting, except in exceptional circumstances (a conferencing tool could be used as a substitute).

### **3.6 Role of adviser**

The role of adviser varies considerably. The *minimum* duties of an adviser are to:

- participate in the *Annual Review Panel* (see section 3.4);
- participate in the *Upgrade Panel* (see section 3.5).

- where necessary, act in place of the supervisor if the supervisor is absent for a short period (for example due to illness or sabbatical leave).

Should a supervisor be absent for a significant period of time (or even leave the institution) then the adviser is only expected to act on the supervisor's behalf until such time as more permanent arrangements have been made. Such an arrangement, which will be facilitated by the DoGS, will result in a new supervisor being appointed (who may, in some cases, be the adviser).

However, in many cases an adviser may play a more significant role in supervision of the research. This can be anywhere along the spectrum of occasional attendance at supervision meetings to acting as a co-supervisor of the research. The extent of this arrangement is at the full discretion of the supervisory team.

### **3.7 Ongoing development**

A research degree programme is, essentially, an apprenticeship into the world of scientific research. The members of the supervisory team are the primary guides during this process. It is thus vital that a research student maintains a dialogue with their supervisory team about appropriate development activities throughout their study. These include:

- Engagement with appropriate departmental events (see section 2.5).
- Attendance at appropriate research training sessions (see section 2.6).
- Writing up and publishing results in a timely fashion. Of course, it is important that a research student discusses any possible publication of research with the supervisory team and obtains assistance from them during the structuring and writing up of research (see section 3.11).
- Attendance at one or more national and/or international research conferences during the period of registration. Conferences enable research students to meet workers in their research field from other institutions worldwide, and are a very important source of inspiration and information (see section 3.12).
- Obtaining teaching experience by taking tutorials, workshops, and/or computer laboratories, as well as by marking coursework (if such opportunities are made available).

### **3.8 Interruption of Studies**

From time to time it may be necessary for a research student to take a break in their research. This could arise for a wide range of reasons, including illness, family problems or changes of financial circumstance. In such cases, research students may request a formal *Interruption of Studies*. Applications for such interruptions will need the support of the supervisory team, who will normally look upon (genuine) requests sympathetically.

Given the limitations on the period of time for which a research student can remain registered for a research degree (see section 4.1), research students should seriously consider taking an *Interruption of Studies* should they experience an extended period over which work cannot be conducted to a satisfactory level. During such periods of

interruption, the “clock” on the registration period effectively “stops” and the interrupting research student is not expected to pay fees. In return, however, research students should not expect the normal detailed research guidance from the supervisory team.

*Interruption of Studies* can be granted for periods of time of up to two years (although longer periods may be granted in exceptional circumstances). The most common requests are for periods of six or twelve months. An *Interruption of Studies* should be requested using the *Interruption of Study for Postgraduate Students* form, which is available from:

<http://www.rhul.ac.uk/forstudents/studying/changedetails.aspx>

This form needs to be completed by the research student, supervisor and DoGS.

After an *Interruption of Studies*, a formal review meeting (equivalent in form to an *Annual Review*, see section 3.4) must be held *within two months* of the recommencement of the research degree. This formal review meeting (which may coincide with an *Annual Review*) should, in addition to those issues covered by an *Annual Review*, consider the impact that the *Interruption of Studies* has had on the progress towards completion of the research degree.

**PT:** It is not uncommon for other commitments to, at times, place part-time research students under severe pressure. It is always worth considering whether such pressures lend themselves to taking an *Interruption of Studies*. While the deadlines for completion of a part-time research degree appear, at first, to be generous (and a long time away), it would be wise to formally register any extended periods of time when work on the research degree was not possible. Such issues should be discussed with the supervisory team.

### **3.9 Student status**

Every current research student must be registered with one of the following statuses:

- *full-time*: up to three years into full-time study, not including periods of *Interruption of Studies*;
- *part-time*: up to six years into part-time study, not including periods of *Interruption of Studies*;
- *interrupting*: see section 3.8;
- *writing up*: more than three years into full-time study (or six years into part-time study), not including periods of *Interruption of Studies*.

Due to pressure of space within the department, only students with full-time status are automatically entitled to a desk in a shared office.

Standard university fees are only due from research students with either full-time or part-time status. Writing up research students pay a much reduced fee.

During the study period it is possible to change status (from *full-time* to *part-time*, or vice-versa) by completing the *Change of Mode of Attendance for Postgraduate Students* form, which is available from:

<http://www.rhul.ac.uk/forstudents/studying/changedetails.aspx>

### **3.10 Changes in the supervisory team**

There may be a number of reasons for a temporary or permanent transfer of supervisor (although this tends to be an unusual event). In all cases a research student will be consulted, and new supervisory arrangements will only be made if the research student is satisfied with them. This also applies to advisers.

In the event of an extended period of absence, the supervisor is responsible for making arrangements for supervision while they are absent.

Permanent transfers of research students from one supervisor to another may arise for other reasons, including:

- The supervisor leaves the institution.
- The research student has been working with another member of staff on an informal basis and wishes to make this arrangement more formal.
- The interests of a research student may change, and as a result a different supervisor may be more appropriate.

In all such cases, new arrangements can only be made with the agreement of the DoGS.

Research students may also initiate a change in the supervisory team, should they encounter any problems (see section 3.13).

### **3.11 Writing papers under supervision**

The fundamental method of disseminating the results of research to the wider research community is by writing research papers. However, it is inadvisable to attempt to publish immature research since this can lead to damage to the reputation of the research student, the supervisory team and the department.

Thus, in all cases research students should discuss the appropriateness of attempting to publish papers with the supervisory team. If they approve (or suggest) doing so then a research student should continue to take advice from them throughout the writing process.

Whether or not the names of the supervisory team should be included as co-authors of a research student paper is a matter for the research student and the supervisory team to decide. It is a common (although not universal) practice for staff names to be included only when they have made a significant contribution to the paper (in other words, when they have done significantly more than giving general guidance in writing style and correcting minor mistakes).

The question of the order of author names is again something that is at the discretion of the research student and the supervisory team. The custom in some parts of Mathematical Science is always to put names in alphabetical order, even when one author has contributed much more than another. However, in other areas (e.g. in much of Computer Science) it is customary to use alphabetical order only when the authors have made roughly equal contributions, and otherwise to put the main author first, which in many cases may be the research student.

Research students are advised to discuss issues of intellectual property and copyright of research papers with their supervisory team. In particular, while generally to be encouraged, they should be careful about making copies of research papers available on the internet without first establishing whether this is appropriate and permissible.

**PT:** Many part-time research students will already be well versed in writing reports for the workplace. It should be noted that academic writing involves different styles and skills. Part-time research students are advised to discuss this issue with their supervisory team.

### **3.12 Attending research events**

Research students are strongly advised to attend one or more national and/or international research events, such as conferences, workshops or summer schools, during their period of registration for a research degree. Research students are particularly encouraged to attempt to present results of their research at such events (if appropriate).

The department does have some funds to support attendance at reputable research events (whether an event is *reputable* should be discussed with the supervisory team). In the case of reputable conferences, having an accepted paper is quite likely to result in departmental support. However, if a research student wishes to obtain departmental support, it is vital that they obtain authorisation *before* making any commitments (including submission of a paper). The rationale for attending any event should be discussed with the supervisory team and, if approved, the Head of Department or the Director of the ISG (as appropriate) should be approached in order to obtain clearance for departmental funding.

Please note that if any travel costs are to be refunded by the department then a quote should first be obtained from the Royal Holloway preferred travel agent (which can also be done on your behalf by staff in the departmental office, McCrea 243).

**PT:** Having the time and freedom to attend academic conferences is one area where part-time students are arguably disadvantaged (unless they have sympathetic employers). Apart from using free time to attend academic conferences, other options include targeting conferences that have some overlap with work interests or (perhaps in the worst case) having any accepted papers at relevant conferences presented by a member of the supervisory team.

### **3.13 Problems, complaints and raising issues**

Liaison between staff and research students in the Mathematics Department mostly occurs informally on a daily basis through personal contact. Should a research student encounter any problems, have any complaints or wish to raise any issues then it is hoped that these informal channels will allow them to do so.

The first points of contact for a research student are the supervisory team (with regard to academic issues) or the DoGS (with regard to administrative or facilities issues). Research students should feel free to use these points of contacts to discuss any aspects of their research degree programme.

Should a research student have any issues regarding any aspect of their studies that they wish to raise more formally then they are welcome to raise them at the *Staff-Student Committee*. The Committee consists of two student representatives elected from each undergraduate year group (there is only one representative from the fourth year), one taught postgraduate representative, one research student representative, and staff representatives. It normally meets two or three times a term in the first two terms, and once in the final term. Photographs of the student representatives, the agenda and minutes of meetings are displayed on the departmental notice board. Items for the

agenda should be raised with the research student representative, who is elected by the research student body on an annual basis.

Should any problems with a supervisor be encountered then an obvious first contact point is the adviser. However, in certain cases it may be preferable to seek independent advice. In this case the best contact is the DoGS.

If you have a complaint relating to any aspect of the Department or its staff or to any academic or College matter, you should first discuss it informally with your Supervisor(s), Advisor, Director of Graduate Studies or another member of staff in the Department as soon as possible. In the majority of cases complaints can be resolved through such an informal route. In those cases where the complaint cannot be resolved in this way, you may want to submit a formal complaint. Full details of how to pursue complaints through both informal and formal routes are set out in the College's *Complaints Procedures for Students*:

<http://www.rhul.ac.uk/forstudents/studying/complaintsprocedure.aspx>

### **3.14 Illness and other extenuating circumstances**

**These should be read in conjunction with the *Instructions to Candidates* issued by the Examinations and Research Degrees Office:**

<http://www.rhul.ac.uk/registry/Examinations/Essential-info.html>

**and Sections 9 and 16 of the *Research Degree Regulations*.**

If you are a research student, you may want the annual review or upgrade panel to be made aware of how your academic performance over the year has been affected by illness or extenuating circumstances. In such cases you should submit your statement and supporting evidence to the panel chair within the deadline set by the department for the submission of material for the upgrade or review. Ideally you should have discussed any such issues with your supervisor or the Director of Graduate Studies before the meeting. The Department may recommend that you interrupt your studies until your personal circumstances are such that you are in a position to take up your studies again. A form requesting permission for an interruption of studies is available on

<http://www.rhul.ac.uk/forstudents/studying/changedetails.aspx>

In the case of circumstances relating only to your performance at an upgrade or review meeting, you should inform the panel members or examiners of the circumstances no later than the start of the upgrade/ review and submit the statement and supporting evidence not more than seven days later to your department.

If you feel that your academic performance on the date of the oral examination may be substantially affected by unexpected medical or other personal circumstances, you should inform the examiners of your situation no later than the start of the oral examination so that they can make a decision on whether or not to proceed. The examiners may require you to submit evidence of these circumstances to the Examinations and Research Degrees Office within seven days.

### **3.15 Special arrangements for the annual review, upgrade or final examination**

If you have a disability or impairment and wish to ask for reasonable adjustments to be made to the conduct of the final examination (viva) you should consult Section 16 of the *Research Degree Regulations* for details of how to make such a request. Should you need similar adjustments for your annual review/ upgrade meeting, these should be discussed with your supervisor ahead of the meeting so that appropriate arrangements can be made.

### **3.16 Appeals procedures for students**

If you wish to appeal against an academic decision, that is, the outcome of an upgrade or final (oral) examination, there is an academic appeals process. Please note that an academic appeal can only be submitted once you have received the result of your upgrade or final examination and your complaint must fall within the grounds for appeal to be considered. Details of the grounds on which you may appeal, the process to be followed to request an appeal pack, amongst others, can be found on the *Academic Appeals website*:

[http://www.rhul.ac.uk/Registry/academic\\_appeals/Index.html](http://www.rhul.ac.uk/Registry/academic_appeals/Index.html)

or in Section 21 and 22 the *Research Degree Regulations*.

### **3.17 Teaching experience and training**

The Department may sometimes be in a position to offer research students teaching and/or demonstrating opportunities. Research students who are employed in a lead teaching role are required to register for the College's inSTIL programme (Programme in Skills of Teaching to Inspire Learning). Those who are teaching as part of a team may choose to do this programme, but are not required to do so. Students must be teaching at the time they are participating in inSTIL, as teaching observations are an important part of the programme. The inSTIL programme is worth 15 M level credits and counts five days towards a student's annual research skills training requirements. Further details about the programme can be obtained from the inSTIL Programme Director by emailing [edc@rhul.ac.uk](mailto:edc@rhul.ac.uk)

Those not teaching, but with an interest in teaching in higher education, are encouraged to attend the 'Introduction to Teaching and Learning in Higher Education' workshops held each year as part of the College's *Generic Skills Programme*.

For details of such opportunities, please discuss this in the first instance with your supervisor.

For details on how much teaching and other work is permitted during MPhil/ PhD studies, students should read Section 8 of the College's *Research Degree Regulations* and the Section on 'Teaching and other paid work' in the *Code of Practice for the Academic Welfare of Postgraduate Research Students*.

### **3.18 Students with special needs**

If you have a disability or special educational need, it is important that you bring it to the Department's attention as soon as possible. You should alert your supervisor, who can put you in touch with the departmental Educational Support Office (ESO) representative. You must also contact the ESO (Founders East 151; tel: 01784 443966; email: [educational-support@rhul.ac.uk](mailto:educational-support@rhul.ac.uk)) who will arrange for an assessment of needs to be carried out and will advise on appropriate sources of help. Further information is available in the *Handbook for Students with Special Needs* and the *Guidelines for Assessment of PhD Students with Specific Learning Difficulties*:

<http://www.rhul.ac.uk/for-students/Disabled-Students/>

You should also read the section on **Special Arrangements for the annual review, upgrade or final examination** in section 3.15.

### **3.19 Plagiarism and other academic offences**

The College takes the issue of plagiarism and other assessment offences very seriously. Details of what constitutes an assessment offence (e.g. plagiarism, collusion, falsification) as well as the procedures to be followed for the investigation of an alleged assessment offence and possible outcomes, etc, are outlined in the College's *Regulations on Assessment Offences*:

[http://www.rhul.ac.uk/Registry/academic\\_regulations/Examination\\_Assessment\\_Offences.html](http://www.rhul.ac.uk/Registry/academic_regulations/Examination_Assessment_Offences.html)

## 4 Completing the degree

This chapter concerns the completing of a research degree. We discuss the process of completion of a research degree, including the submission and examination of the thesis.

### 4.1 Initial registration and period of registration

All students, other than those granted exemption from part of their studies, are initially registered for an MPhil degree on either a full-time or part-time basis. Those wishing to submit a thesis for the award of PhD will be required to successfully upgrade to a PhD within the first 20 months of full-time study or the first 40 months of part-time study.

Section 2 of the College's *Research Degree Regulations*

[http://www.rhul.ac.uk/Registry/academic\\_regulations/Postgraduate\\_Research\\_Regulations.html](http://www.rhul.ac.uk/Registry/academic_regulations/Postgraduate_Research_Regulations.html)

stipulates the maximum periods of registration permissible for MPhil and PhD study.

#### **“Section 2**

*Students first registered on Research Degree programmes in or after September 2006 must submit the thesis for examination within the following periods of study, otherwise their registration with the College may be terminated under the provisions of Section 10 of these regulations.*

- (a) *For programmes of study leading to the award of MPhil, the thesis must be submitted within three years of full-time study, or five years of part-time study.*
- (b) *For programmes of study leading to the award of PhD, the thesis must be submitted within four years of full-time study, or seven years of part-time study.”*

For further details relating to the period of study, arrangements for admission, exemptions from part of the programme of study, interruptions of study, registration and enrolment, you should consult Sections 1 – 8 of the *Research Degree Regulations*

[http://www.rhul.ac.uk/Registry/academic\\_regulations/Postgraduate\\_Research\\_Regulations.html](http://www.rhul.ac.uk/Registry/academic_regulations/Postgraduate_Research_Regulations.html)

Relevant forms for interruptions, change of mode of study (full-time to part-time or vice-versa), and withdrawal are available on the page:

<http://www.rhul.ac.uk/forstudents/studying/changedetails.aspx>

These registration periods must always be kept in mind. If severe difficulties are encountered during a registration period then research students should consider taking a formal *Interruption of Studies* (see section 3.8).

Note that as well as a maximum limit to the period of registration, there is also a minimum time. This is *two years* for full-time research students and *four years* for part-

time research students. It is not possible to submit a thesis before these minimum registration periods have passed.

## **4.2 Writing up**

Once a research student has achieved sufficient progress in their research then they will need to prepare a thesis reporting on this research. An important role of the supervisory team is to give advice to the research student on when this point has been reached. Of course, in many cases it will not be completely clear whether or not there is sufficient material until the writing up process is well under way. In any event, it is much better to start on the writing up process earlier rather than later. The act of writing up will itself often prompt a research student to identify and conduct the extra work necessary to fill in gaps in the existing research.

The role of the supervisory team in helping a research student prepare a well-structured thesis with appropriate content is crucial. Research students often have little idea of how to prepare such a large and complex document. Research students should discuss the provisional structure of the thesis with the supervisory team before starting to write the thesis, and should continue to discuss the structure and content of the thesis as it develops.

Consulting existing theses on related topics is also a very worthwhile exercise. Many theses produced by recent research students are available as departmental technical reports, and all graduating research students are encouraged to make their thesis available to a wider readership in this way. Departmental technical reports are available at:

<http://www.ma.rhul.ac.uk/tech>

## **4.3 Submitting for the examination**

As the thesis is nearing completion the student will need to submit a formal entry to the final examination to the Examinations and Research Degrees Office. Full details on entry for the examination (or re-entry in the case of resubmissions), submission and examination of the thesis are available at:

<http://www.rhul.ac.uk/registry/researchdegrees/>

Students should also consult the *Research Degree Regulations* for further details about, for example, the requirements of the thesis (word length), the conduct of the final examination, and possible outcomes of the examination.

Note that the *Entry Form* should be submitted *at least two months before submission*. Examination entry will cease to be valid eighteen months after submission of the *Entry Form*.

A research student should not submit a thesis for examination without having it approved by the supervisory team.

## **4.4 Choosing examiners**

Two examiners must be appointed by Royal Holloway to examine every research student who submits a thesis. Normally, one examiner will be *internal* to the University of London and one will be *external* (not from the University of London). Neither the

internal nor the external examiner should have worked with the research student prior to the examination, or have any other significant connection with the research student.

Whilst the formal appointment of examiners is outside the control of the supervisory team, they are nevertheless required to nominate candidates for these two roles. This is not something in which the research student will be involved.

Note that the research student *must not* make any direct contact with either of the examiners prior to the examination.

#### **4.5 Submission of the thesis**

Precise details of the formal requirements for thesis submission are available at:

<http://www.rhul.ac.uk/registry/researchdegrees/>

Note that it typically takes several weeks for the submitted copies to reach the two examiners.

Research students intending to submit their thesis just after the end of their period of registration as full-time students (three years) or part-time students (six years) should note that they are normally expected to officially register (sign up) with Royal Holloway for a writing up year, but will not be charged any writing up fees if they submit their thesis *up to one month* into the writing up year. Research students in this position are advised to contact the Examinations and Research Degrees Office to confirm suitable deadlines with respect to this.

#### **4.6 The viva**

The College offers viva training for research student's final examination as part of the Generic Skills training programme, with sessions run for students in Arts, History and Social Sciences, Science and Economics and Management. Full details of dates and times of such courses are available on the Generic Skills Programme webpage:

<https://www.rhul.ac.uk/pgrstudents/forstudents/gsp/home.aspx>

This training is compulsory for students.

As well as Generic Skills Programme training, it is often useful for the supervisory team to arrange a 'mock' viva, prior to the real event, where two members of staff (e.g. the supervisor and adviser) spend some time acting as internal and external examiners. This will enable the research student to get a feel for what types of question might be asked.

The supervisor is responsible for arranging the viva, including negotiating the date and time with the examiners, booking a room in which to conduct the examination, etc. Typically, the viva will be held in the department at Royal Holloway.

Guidance on the conduct of the viva is available at:

<http://www.rhul.ac.uk/registry/researchdegrees/>

The supervisor may be present at the viva if the research student wishes. Past practice in this area varies, but in most cases the supervisor does not attend. If the supervisor is present during the viva then they can only act as an observer, and may only speak if requested to do so by the examiners.

#### **4.7 After the examination**

There are a number of possible outcomes from a viva ranging from *pass with no changes* (the best possible outcome), to *fail with no possibility of resubmission* (very rare). For the full range of possible outcomes, see the *Research Degree Regulations* (section 1.3). In the past, the most common result has been a pass subject to minor changes and corrections being made in order to meet specified points made by the examiners.

If corrections are required, the nature of the corrections, and the methods to be used to verify that the changes have been made in accordance with the wishes of the examiners, will vary. The research student will be informed at the end of the viva on precisely what process will be required.

Research students should seek guidance from their supervisory team during the corrections process. This might involve the supervisory team reviewing a draft of the corrected thesis before it is sent to the examiner(s) for final checking.

#### **4.8 After graduating**

We hope that research students will have fond memories of the Mathematics Department at Royal Holloway. The department has a database that enables us to contact our alumni with news about the department and alumni events. We would encourage all research students to maintain contact with the department after they leave by adding their contact details to this database.

Royal Holloway also runs central alumni events, see:

<http://www.rhul.ac.uk/for-alumni/>