



Graduate Course Handbook
2008 - 2009



Department of Materials



CHECKLIST FOR KEY ACTIONS BY DPHIL STUDENT (Bold = mandatory)

Action	Period Due	Completed
Register at College	Annually, MT	(dd/mm/yy)
YEAR 1		
Attend Induction	Wk 0, MT	
Attend Safety Lecture	Wk 1, MT	
Complete Personal Risk Assessment and DSE Forms	Wk 1, MT	
Submit PG Questionnaire	Wk 1, MT	
Attend Workshop Induction (unless opted out)	tbc, MT	
Attend Information Skills Workshop	Wk 2, MT	
Attend Project Management Workshop	Wk 4, MT	
Attend IoM ³ Presentation	Wk 4, MT	
Attend Career Planning Workshop	Wk 5, MT	
Submit Project Management Form 1	Wk 5, MT	
Attend Poster Skills Workshop	Wk 7, MT	
Attend Presentation Skills Workshop	Wk 2, HT	
Attend Writing Skills Workshop	Wk 5, HT	
Attend and obtain satisfactory assessments on 2 taught courses	HT	
Attend a minimum of 8 colloquia	MT, HT	
Submit 1 st Year Report	Wk 1, TT	}
Submit Project Management Form 2	Wk 1, TT	
Attend 1 st Year Viva	Wk 3, 4 or 5, TT	
Submit Literature Review	30 September 08	
YEAR 2		
Apply for Transfer of Status	Sept/Oct 08	
Submit Project Management Form 3A	Wk 5, MT	
Present research talk to Department	Wk 7, HT	
Submit Project Management Form 3B	Wk 5, TT	
Attend UK Graduate School or equivalent (mandatory for EPSRC students)	Summer 09	
Apply for Confirmation of Status and submit progress report	Sept/Oct 09	
YEAR 3		
Submit Project Management Form 3C	Wk 5, MT	
Present Poster to Department	Wk 5, HT	
Submit Project Management Form 4 (3 y projects) OR Fourth Project Management Form 3D (3.5 y projects)	Wk 2, TT OR Wk 5, TT	
Apply for Appointment of Examiners (3 y projects)	July	
Submit Thesis (3 y projects)	Sept	
YEAR 4		
Apply for Appointment of Examiners (3.5 y projects)	January	
Submit Project Management Form 4 (3.5 y projects)	Wk 0, MT	
Submit Thesis (3.5 y projects)	March	
Discuss with your supervisor your termly report	Termly, until thesis submission	

Additional timetabled events are listed in the DPhil diary in Section 2.

**Graduate Induction Course: 6th – 7th October 2008
(Hume-Rothery Lecture Theatre)**

Monday, 6th October

- 9.00 – 9.15: **Chris Grovenor (Head of Department):**
 Welcome and introduction to department
- 9.15 – 9.30: **Support structure:**
 Director of Studies
 Graduate Studies Secretary
 Graduate Studies Committee
 Departmental Administrator
 Academic/Finance Deputy Administrators
 Harassment Officers
- 9.30 – 9.45: **Angus Wilkinson (Practical Class Organiser):**
 Gaining teaching experience
- 9.45 – 10.00: **Crispin Hetherington (Director of EM facilities):**
 Electron microscopy facilities: access and training
- 10.00 – 10.20: **Paul Warren (Senior IT Officer):**
 IT and audio-visual facilities
- 10.20 – 10.30: **Karleen Dudeck (Chair of JCCG):**
 Joint Consultative Committee for Graduates - overview
 Explanation of nomination procedure
- 10.31 **Martin Carr (Schools Liaison Officer)**
 Introduce Martin Carr prior to coffee break, where he will be
 available to talk to students interested in assisting with schools
 liaison activities
- 10.32 – 11.15: **Registration** and coffee with members of JCCG
 Individual photographs to be taken during coffee
 Financial details to be collected from students (if required)
- 11.15 – 12.30: **Tour of central site**
 Hume Rothery:
 Workshop (**Laurie Walton**), Stores, Library, Admin. offices.
 Holder Building:
 EM area, Teaching Labs. (**Paula Topping**), Common Room
 Engineering & Technology Building:
 IT Support, ETB Meeting room , IEB LR8
 21 Banbury Road:
 Lecture room, Conference room, MML
- 12.30 – 14.00 BREAK
- 14.00 – 17.00 **Meeting with groups**
 (students to be collected from the Hume-Rothery Bldg reception area)

(cont...)

Tuesday, 7th October

All activities will take place in the Hume-Rothery Lecture Theatre except for the tour of the Begbroke site and the tour of the Radcliffe Science Library

- 8.45 – 10.00: **Adrian Taylor (Director of Studies):**
Structure of the DPhil course
Structure of the MSc by Research course
Project supervision
Project management
Graduate courses (assessed courses; skills training, including portfolio)
Departmental colloquia
First year report and viva
Literature review
Second year talk (Hetherington Prize)
Third year poster competition
Thesis write-up and viva
- 10.00 – 10.14: **Karleen Dudeck (Chair of JCCG):**
Nomination of first-year members
- 10.15 – 10.45: **Coffee** with members of JCCG
Election of 2 first-year members
Opportunity to talk with Schools Liaison Officer
- 10.45 – 11.00: Bus departs for Begbroke from outside the Hume-Rothery Building
- 11.00 – 12.45: **Tour of Begbroke site (Coordinated by Alison Crossley)**
Begbroke Nano characterisation facilities (**Alison Crossley**)
Sample preparation and electron microscopy (**Chris Salter**)
Non-analytical facilities eg canteen, clean room, spray forming lab,
bus, key fobs (**Katie Moore** and **Helene Suttle**)
- 12.45 – 13.00: Return to the Hume-Rothery Building
- 13.00 – 14.00: BREAK
- 14.00 – 14.30: OUCS – Introduction to Services (**Dave Baker**)
- 14.30 – 14.50: Introduction to Library facilities in Oxford (**Grace Sewell**)
- 15.00 – 15.30: Tour of Radcliffe Science Library (RSL) (**Ljilja Ristic**)

The following lectures represent part of the Induction Course for new graduate students and you are strongly advised to attend. Those in bold are compulsory.

Tuesday, 9th October, 10.00 – 11.00 in Information Engineering Building LR8

SAFETY LECTURE

Mike Jenkins

Friday, 19th October, 10.00 – 11.30 in OUCS LR 3&4

INFORMATION SKILLS WORKSHOP

Ljilja Ristic

Monday, 29th October, 12.00 – 13.00 in Hume-Rothery Lecture Theatre

BENEFITS OF MEMBERSHIP OF THE INSTITUTE OF MATERIALS, MINERALS & MINING

Brian Knott (IoM3)

Wednesday, 31st October, 12.00 – 17.00 in Hume-Rothery Lecture Theatre

PROJECT MANAGEMENT

Paul Warren (Pilkington Glass), Paul Butler (Packaging Materials & Technologies Ltd) & Adrian Taylor

Friday, 9th November, 14.30 – 17.00 in Hume-Rothery Lecture Theatre

LOOKING TO THE FUTURE: CAREER PLANNING

Denise Best (OU Careers Service), Geoff Armstrong (Goodrich Actuation Systems), Alfred Wong (Procter & Gamble), Dr Mohinder Saran (Deloitte & Touche), Chris Grovenor & Adrian Taylor.

Michaelmas Term [dates to be confirmed] in Mechanical Workshop

WORKSHOP INDUCTION AND SAFETY COURSE

Laurie Walton

This workshop induction course is mandatory for anyone who wishes to use the workshop and is also useful as general skills training and safety awareness – even if you never need to use workshop equipment yourself, you may well be responsible one day for people who do.

When the equipment is not in demand for department business, you are also permitted to use the workshop for other work such as urgent bicycle repairs – but only if you have done the training course!

The default position is that we recommend all new research students to attend the course but, with the permission of your supervisor, you may opt out of this by sending an e-mail to Laurie Walton (copied to Marion Simons and your supervisor) in advance of the time reserved for your course.

IF YOU DO OPT OUT AND SUBSEQUENTLY FIND THAT YOU NEED TO USE THE WORKSHOP, IT WILL BE NO USE AT THIS TIME PLEADING THAT YOU DESPERATELY NEED ACCESS TO THE WORKSHOP FOR YOUR RESEARCH (OR TO MEND YOUR BIKE SO THAT YOU CAN GET HOME THAT NIGHT) – YOU SHOULD BE AWARE THAT YOU MIGHT HAVE TO WAIT FOR THREE TO FOUR MONTHS BEFORE LAURIE WALTON RUNS THE NEXT TRAINING COURSE.

WELCOME

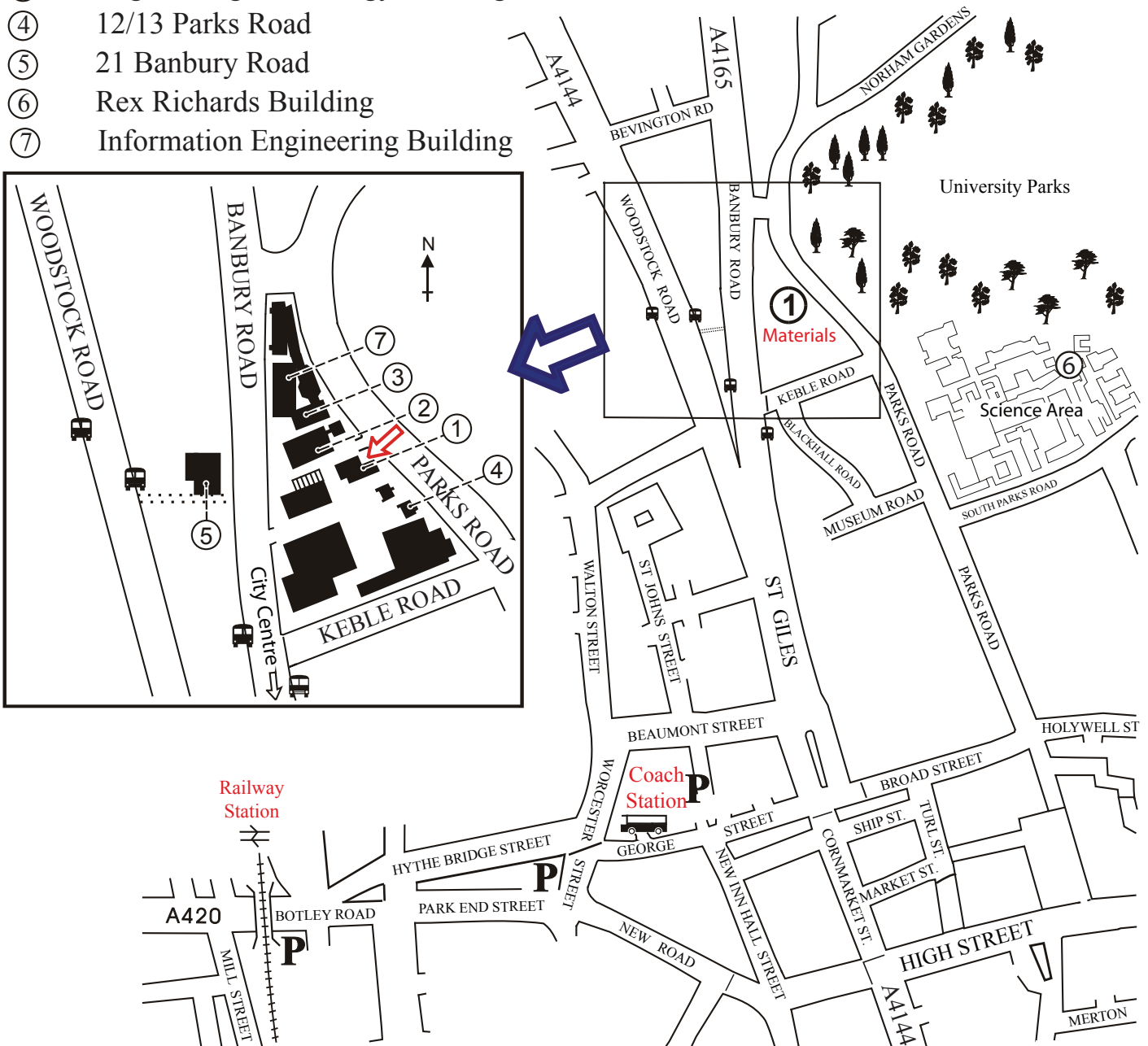
Welcome to the Department of Materials at Oxford University; you are joining a winning team! According to the most recent UK Research Assessment Exercise (2001) and several recent league tables (Guardian 2006, 2007; Times 2005; The Good University Guide 2007), we are the top Materials Department in the United Kingdom. In the past five years, members of staff in the Department have won more than 20 major awards, including one CBE, four Fellowships of the Royal Society, one Fellowship of the Royal Academy of Engineering, two Royal Society medals, the Acta Materialia Gold medal, three awards from the Institute of Materials, one joint award from the Royal Society of Chemistry and the Institute of Materials, two Institute of Physics awards, the top award from the German Materials Society, and a Fellowship of the American National Academy of Engineering. Student members of the Department have also won many national and international prizes for their research work and presentations. The Department has recently undertaken a major expansion of our research facilities, with the development of the Begbroke Science Park, and the commencement of major research collaborations in the fields of quantum information processing, 3-dimensional Atom Probe analysis, advanced electron microscopy and fusion reactor materials. I am sure that you will relish the vibrant and exciting research culture of the Department. I wish you every success, and trust that you will find your time here most enjoyable, as well as productive of some first class research.

A handwritten signature in black ink, appearing to read 'C R M Grovenor', with a long horizontal line extending from the end of the signature.

Professor C R M Grovenor
Head of Department

Department of Materials - Map of Central Site

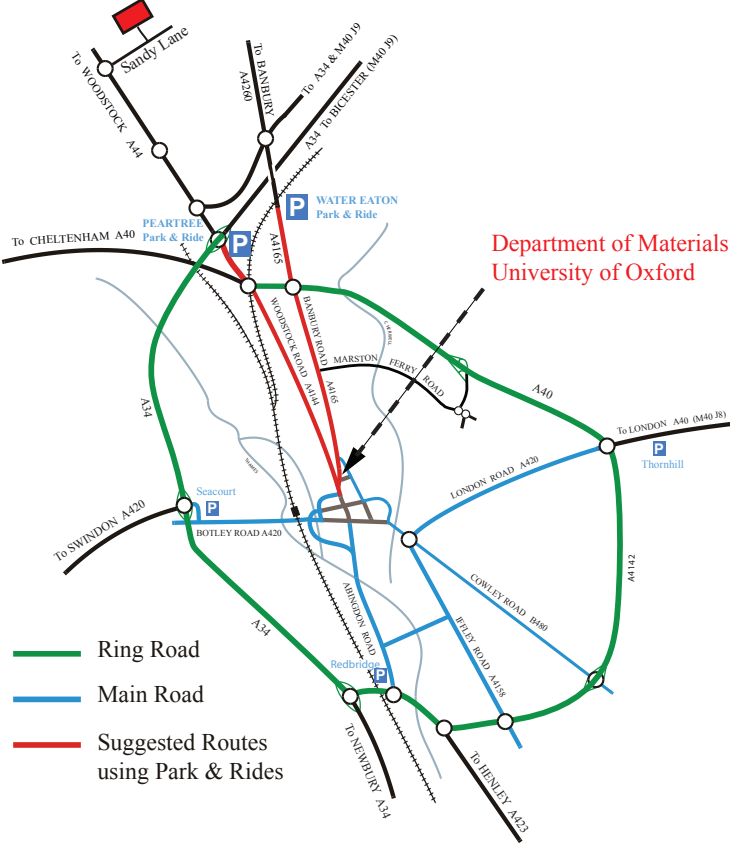
- ↪ Reception
- ① Hume-Rothery Building
- ② Holder Building
- ③ Engineering Technology Building
- ④ 12/13 Parks Road
- ⑤ 21 Banbury Road
- ⑥ Rex Richards Building
- ⑦ Information Engineering Building



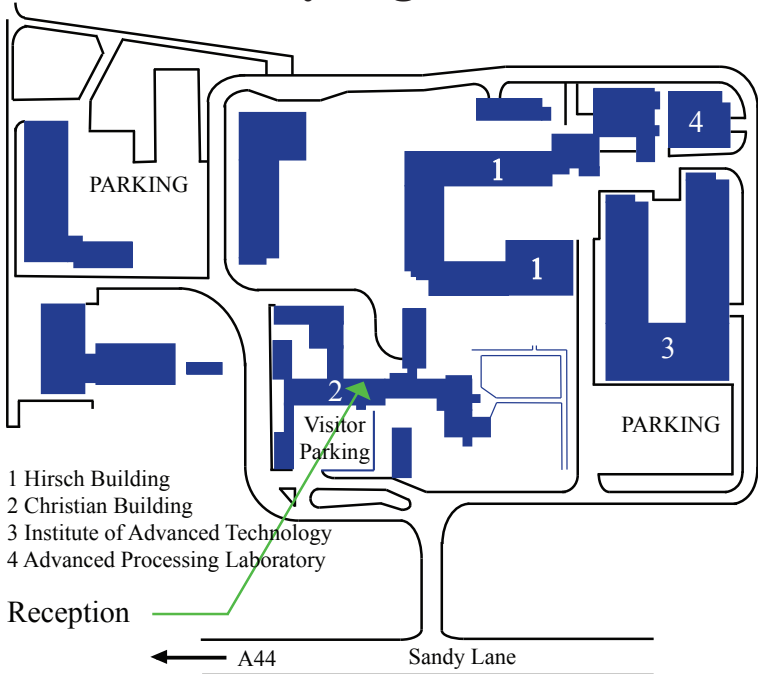
Contact us at: Marion Beckett, Graduate Studies Secretary
 Department of Materials
 University of Oxford
 Parks Road, Oxford, OX1 3PH
 Phone: (44) 1865 283101 Fax: (44) 1865 273789
 Email: graduate.studies@materials.ox.ac.uk
<http://www.materials.ox.ac.uk/admissions/postgraduate>

Department of Materials - Map of Begbroke Site

Oxford University Begbroke Science Park



Oxford University Begbroke Science Park



A minibus service operates from the central site (stop outside the Hume-Rothery Building) to the Begbroke site several times a day. The journey takes approximately 15-20 minutes. Timetables are posted on the Departmental notice boards and are circulated to all members of Department via the 'notices' maillist.

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1. INTRODUCTION

Your years as a graduate student are an exciting time when you will explore the challenges of performing creative research with the accompanying dreams, frustrations, and fulfilment. This handbook is provided to help you make the most of these few years by describing the structure of the DPhil and MSc by Research courses within the Department of Materials. This booklet complements three other handbooks which you should read and keep together in a safe place:

(i) The 'Mathematical, Physical and Life Sciences Division's Graduate Student Handbook 2008-09'. Please see menu at <http://www.mpls.ox.ac.uk/intranet/teachingandlearning/graduateprog.html> for a copy. This is produced by the Mathematical, Physical and Life Sciences Division (MPLSD) which comprises the Departments of Mathematics, Statistics, Computing, Engineering Science, Chemistry, Earth Sciences, Plant Sciences, Zoology and Materials. It describes in detail the structure of postgraduate training at Oxford University that is common to all the Mathematical, Physical and Life Science departments. It explains in an informal way the rules and regulations that govern the pursuit and award of research degrees. Sections 16-20 give a useful overview of the procedure for submission of your thesis and the examination process.

(ii) The handbook of 'Postgraduate Lecture Synopses and Research Colloquia 2008-09'. This details the courses available to graduate students and lists the Departmental Colloquia that will be given during Michaelmas Term. It is important that you peruse this carefully before you decide which courses you would like to attend during your first year. We will return to courses and colloquia in sections 6 and 9 below.

(iii) The handbook on 'Facilities and Procedures'. This describes the many facilities within the department such as the library, workshops, computing laboratories, and electron/optical microscopes that are available to all graduates. It also describes the procedures needed, for example, in ordering consumables and equipment from the main stores or in getting logged onto the University Computing network. You should familiarise yourself with its contents.

A further handbook of relevance is the EPSC's "Notes of Guidance for Research Degrees" at <http://www.admin.ox.ac.uk/epsc/guidance/>. Finally, in section 24 of the present booklet, (i) in accordance with the MPLSD template, there is a summary of the minimum provision for research students in the Department of Materials, and (ii) there is a copy of the MPLSD Code of Practice on the Supervision of Research Students.

2. OVERVIEW OF DPHIL COURSE STRUCTURE

The University rules stipulate that unless dispensation has been granted you must be resident within a 25 mile radius of the city centre for at least 6 terms (2 academic years) before you can submit your DPhil thesis (unless you already hold an Oxford MSc degree when the residence requirement is reduced to 3 terms). The rules also stipulate that the maximum time normally allowed for a student to complete the research and write the thesis is 12 terms (4 academic years). However, funding for research studentships is usually only for 3 or 3½ years. Thus, the department aims for DPhil students to submit their theses within 3-3½ years. A schedule for keeping to this timetable is illustrated below under the title 'A DPhil Diary'. Following the diary, we will consider very briefly each of the years in turn.

A DPhil Diary

1st	October (MT)	Week 0: First year induction course. Assignment of supervisors. Week 1: Safety lecture. Deadline for completed Graduate Student Questionnaire. Week 2: Information skills workshop. Week 4: Project management workshop. Institute of Materials, Minerals & Mining Talk.
	Y	Week 5: Career Planning workshop. Project management form 1.
	E	Week 7: Poster presentation skills workshop Attend graduate courses (including 2 assessed) plus Thursday dept colloquia.
	January (HT)	Week 2: Presentation skills and Powerpoint workshops. Week 5: Writing skills, lab notebooks, IPR and patents workshop. Attend graduate courses (including 2 assessed) plus Thursday dept colloquia.
	A	Week 8: HT: Quality and Environmental Management Workshop
R	April (TT)	Friday Week 1: Deadline for first year report. Friday pm Weeks 3, 4, 5: First year vivas. Week 1: Project Management Form 2. Attend Thursday dept colloquia.
	Sept/Oct	30 September: Deadline for Literature Reviews. Application for transfer from Probationary Res to DPhil status (form GSO.2).
2nd	October (MT)	Week 5: Project management form 3A Attend Thursday dept colloquia. Week 7: Poster presentation skills workshop (if not attended in year 1).

<p>Y</p> <p>E</p> <p>A</p> <p>R</p>	<p>January (HT)</p> <p>April (TT)</p> <p>July Sept</p>	<p>Week 2: Presentation skills and Powerpoint workshop (if not attended in year 1). TBC: Academic writing course (for non-UK students)</p> <p>Week 5: Writing skills, lab notebooks, IPR and patents workshop (if not attended in year 1)</p> <p>Week 7: Second year talks, Wednesday, Thursday & Friday 11.00 am – 6.00 pm (Hetherington Prize). Attend Thursday dept colloquia.</p> <p>Week 5: Project management form 3B. Attend Thursday dept colloquia.</p> <p>Attend UK-GRAD Graduate school. Submission of Progress Report. Application for confirmation of status as DPhil student (form GSO.14).</p>
<p>3rd</p> <p>Y</p> <p>E</p> <p>A</p> <p>R</p>	<p>October (MT)</p> <p>January (HT)</p> <p>February (HT)</p> <p>April (TT)</p> <p>July</p> <p>October (MT)</p> <p>January (HT)</p> <p>March</p>	<p>Week 5: Project management form 3C. Week 5: Introduction to Oxford University Careers Service – Active Job Hunting Week 5: Career and networking Evening with Alumni Attend Thursday dept colloquia.</p> <p>Attend Thursday dept colloquia.</p> <p>Week 5: Poster Presentation Session (Rolls Royce and Ironmongers' prizes)</p> <p>Attend Thursday dept colloquia. Week 2: Project management form 4 (3 year projects, to include thesis outline) Week 5: Project management form 3D (3½ year projects).</p> <p>Thesis preparation</p> <p>Application for appointment of examiners (form GSO.3). Submission of thesis.</p> <p>3½ YEAR PROJECTS ONLY Attend Thursday dept colloquia. Week 0: Project management form 4 (to include thesis outline). Thesis preparation</p> <p>Application for appointment of examiners (form GSO.3). Week 2: Introduction to Oxford University Careers Service.</p> <p>Submission of thesis</p>

Note: The JCCG will meet every term at 1 pm on Wednesday of Week 1.

2.1. THE FIRST YEAR

You have arrived at the start of your graduate degree as a Probationer Research Student (PRS). The University rules allow you to hold this status normally for up to 6 terms (2 academic years). Generally, however, our PRS students, who arrive intending to pursue a doctorate, are expected to transfer to DPhil status at the end of their first year. This transfer is subject to the approval of the supervisor, the College and the Director of Studies, following the completion of three threshold requirements:

- (i) passing of two assessed courses (see section 6);
- (ii) attendance at a minimum of 50% of the Departmental Colloquia during the first two terms (see section 9);
- (iii) passing of the first year viva (see section 10).

When you have met these three criteria, you should complete and submit to the Graduate Studies Office in Wellington Square an 'Application Form for Transfer of a Graduate Student from One Status to Another' (form GSO.2). This form will be sent to you at the end of your First Year, but additional forms can be downloaded from the website <http://www.admin.ox.ac.uk/gso/forms>.

By the end of the First Year, you are required to have completed a Literature Review (section 11), so that you are familiar with the prior work in your area of study before you progress too far with your research. Your Literature Review needs to be completed by 30th September 2009.

2.2. THE SECOND YEAR

Your project should now be proceeding apace and if you make good progress with your research, you will have your status as a DPhil student confirmed. The confirmation of status depends on passing two remaining course requirements and submitting a satisfactory progress report by 30 September 2010, and is subject to approval by your supervisor, your College and the Director of Studies.

The two threshold course requirements are:

- (i) the Literature Review completed at the end of your First Year, which will be reviewed by a senior member of the Department (section 11);
- (ii) a short talk on your research given by you to all members of the Department during week 7 of Hilary term (see section 12).

Once you have successfully fulfilled these two requirements, you will need to complete the form GSO.14 to allow you to apply for **Confirmation of Status** as a Student for the Degree of Doctor of Philosophy, which you should normally complete at the end of your Second Year. This form requires you to give a clear indication of the progress to date and the likely timetable for submission of your thesis, which your supervisor, College and Director of Studies will then approve. The form can be downloaded from the website <http://www.admin.ox.ac.uk/gso/forms>.

EPSRC funded students are expected to attend a UK-GRAD graduate school, preferably during the summer, for which attendance is compulsory and a condition of the grant for all EPSRC-funded students (see section 6.2). Similar opportunities for other students may be advertised from time to time.

2.3. THE THIRD YEAR

Your DPhil project should now be coming together nicely. To remain on target for completing within the allotted time you should most probably be starting to write up your thesis by Easter (3 year projects), or October (3½ year projects), allowing yourself six months to the finished final copy (see section 13). **The Project Management Form that you submit approximately 6 months before your funded period ends must include an outline plan for your thesis.** A month or so before you are ready to submit your thesis, you should apply for the 'Appointment of Examiners' (form GSO.3). This form requires certification by you that the thesis is your own work except where otherwise indicated, by your supervisor that you have satisfied residency requirements, and by your college. Again, this form can be downloaded from the website <http://www.admin.ox.ac.uk/gso/forms>. Once two copies of your thesis and abstract have been submitted to the Graduate Studies Office, your Internal Examiner will arrange the date for your oral examination or viva (see section 13).

In the third year you are required to present a poster in the DPhil Poster Competition that is held in Hilary Term. The poster may be in either the Scientific Conference category or the Public Understanding category.

2.4. CAVEAT

A hard and fast timetable for the successful completion of a DPhil project is, of course, not possible, given the unpredictability of creative research. The DPhil Diary suggests that you should have applied for confirmation of DPhil status by the end of your second year and that you should have started writing six months before your 3 or 3½ year period has expired. These times should be taken as a guide illustrating what is generally required in order to submit within time. Part of the purpose of the Project Management Scheme is to enable students themselves to monitor their own progress and to flag-up to their supervisor and the Department a warning signal as soon as they feel that their

DPhil schedule is slipping (see section 5). If you are not devoting most of your effort to thesis writing at the 36 month milestone, you should meet with the Director of Studies to discuss your progress.

3. OVERVIEW OF MSc BY RESEARCH COURSE STRUCTURE

The University rules stipulate that you must be resident within a 25 mile radius of the city centre for a least 3 terms (1 academic year) before you can submit your MSc thesis. The rules also stipulate that the maximum time normally allowed for a student to complete the research and write the thesis is 9 terms (3 academic years). The department, however, aims for MSc students to submit their thesis within 2 years. A schedule for keeping to this 2-year timetable is illustrated overleaf under the title *A Two-Year MSc by Research Diary*. We will now consider very briefly each of the two years in turn.

3.1. THE FIRST YEAR

You have arrived at the start of your graduate degree as a Probationer Research Student (PRS). The University rules allow you to hold this status normally for up to 6 terms (2 academic years). Generally, however, our PRS students, who arrive intending to pursue a masters, are expected to transfer to MSc by Research status at the end of their first year. This transfer is subject to the approval of the supervisor, the College and the Director of Studies, following the completion of three requirements:

- (i) passing of two assessed courses (see section 6);
- (ii) attendance at a minimum of 50% of the Departmental Colloquia during the first two terms (see section 9);
- (iii) passing of the first year viva (see section 10).

When you have met these three criteria, you should complete and submit to the Graduate Studies Office in Wellington Square an 'Application Form for Transfer of a Graduate Student from One Status to Another' (form GSO.2). This form will be sent to you after your First Year Viva, but additional forms can be downloaded from the website <http://www.admin.ox.ac.uk/gso/forms>.

By the end of the First Year, you are required to have completed a Literature Review (section 11), so that you are familiar with the prior work in your area of study before you progress too far with your research. Your Literature Review needs to be completed by 30th September 2008.

3.2. THE SECOND YEAR

Your MSc project should now be coming together nicely and you will be asked to give a short talk on your research during Week 7 of Hilary Term (see section 12). Allow yourself three months to write-up and finish the final version of your thesis (see section 13). A month or so before you are ready to submit your thesis, you should apply for the 'Appointment of Examiners' (form GSO.3). Again, this form can be downloaded from the website <http://www.admin.ox.ac.uk/gso/forms>. Once two copies of your thesis and abstract have been submitted to the Graduate Studies Office, your Internal Examiner will arrange the date for your oral examination or viva (see section 13).

3.3. CAVEAT

A hard and fast timetable for the successful completion of a MSc by Research project is, of course, not possible, given the unpredictability of creative research. The second year of the 'Two-Year MSc by Research Diary' shown below should be seen as a guide illustrating what is required in order to submit within two years. Part of the purpose of the Project Management structure is to enable students themselves to monitor their own progress and to flag-up to the department a warning signal as soon as they feel that their two year MSc schedule is slipping (see section 5). If you are not devoting most of your effort to thesis writing at the 21 month milestone, you should meet with the Director of Studies to discuss your progress.

A Two-Year MSc by Research Diary

1st Y	October (MT)	Week 0: First year induction course. Assignment of supervisors. Week 1: Safety lecture. Deadline for completed Graduate Student Questionnaire. Week 2: Information skills workshop. Week 4: Project management workshop. Institute of Materials, Minerals & Mining Talk Week 5: Career planning workshop. Project management form 1.
	January (HT)	Week 7: Poster presentation skills workshop Attend graduate courses (including 2 assessed) plus Thursday dept colloquia. Week 2: Presentation skills and Powerpoint workshops. Week 5: Writing skills, lab notebooks, IPR and patents workshop. Attend graduate courses (including 2 assessed) plus Thursday dept colloquia. Week 8: HT: Quality and Environmental Management Workshop.
A		

R	April (TT)	Friday Week 1: Deadline for first year report Week 1: Project management form 2 Friday pm Weeks 3, 4, 5: First year vivas Attend Thursday dept colloquia
	July Sept/Oct	30 September: Deadline for Literature Reviews Application for transfer from Probationer. Res. to DPhil status (form GSO.2)
2nd	October (MT)	Week 5: Project management form 3 Week 5: Introduction to OU Careers service – Active Job Hunting Careers and Networking Evening with Alumni Attend Thursday dept colloquia
	January (HT)	TBC: Academic Writing Course (for non-UK students) Week 7: Second year talks, Wednesday, Thursday & Friday 11.00 am – 6.00 pm (Hetherington Prize) Attend Thursday dept colloquia
Y		
E	April (TT)	Week 5: Project management form 4 (to include thesis outline) Attend Thursday dept colloquia
	July	Application for appointment of examiners (form GSO.3) Submission of thesis.
A		
R		

Note: The JCCG will meet every term at 1 pm on Wednesday of Week 1.

4. RESEARCH SUPERVISION

You will be supervised by a single Supervisor or two or more Joint Supervisors (for the case where projects involve expertise in more than one area). You might also have an External Supervisor, for example if your project involves collaboration with another university or an industrial company or laboratory. Your supervisor(s) will be your main source of information and advice throughout the course of your research. Their responsibilities include:

- (i) planning the framework of your research programme (in the light of the course structure discussed in sections 2 and 3);

- (ii) advising you about lecture courses, both specialist and broadening (see section 6.1);
- (iii) advising you about skills-training courses, including those on research techniques (see section 6.2);
- (iv) advising you about literature sources;
- (v) meeting regularly with you to discuss your work;
- (vi) keeping you informed of your progress (both informally and through the formal report submitted to the Graduate Studies Office at the end of each term, taking into account the project management forms submitted at regular intervals to the Department by you (see section 5).
- (vii) offering informal guidance on careers.

Continuation on the course depends on your satisfactory progress, so you should take very seriously any warnings expressed by your supervisor(s) that you are not working as well as you ought. You should also bring to their attention, in good time, any problems that are significantly affecting your progress whether academic or personal, before the situation becomes too serious. The University, Department and College carefully monitor the progress you make with your project, and copies of your supervisor(s) reports will be sent to the Director of Studies and to your Tutor and Advisor in College.

It occasionally happens during the course of a research degree that relations between the student and the supervisor(s) can become strained, perhaps due to differences in opinion as to the direction in which the research should proceed. You will, therefore, be assigned a Departmental Advisor who is familiar with the field of your research and to whom you can turn for independent advice. Remember that your Departmental Advisor should be someone different from any of your supervisors: during the first few weeks in the Department you need to agree with your supervisor(s) who should be your advisor. Of course, the Director of Studies and members of the Graduate Studies Committee (see section 14) are also always available for a confidential chat. In addition, you might like to seek advice from your College Advisor (who will be assigned by College) or your College Tutor for Graduates. Please note that your College Advisor must not be one of your supervisors. The Department and Colleges work together to ensure that your time here in Oxford is as trouble free as possible. It is a good idea to meet your advisors during your first term as a probationary research student.

The Department takes safety matters very seriously. It is compulsory, and part of the Induction Course, that you attend the **Safety Lecture** by Dr Mike Jenkins at 10.00 am on Tuesday of Week 1 (14th October 2008). You will not be allowed to undertake any experimental work until you have received adequate safety training. An important policy of the University Health and Safety Committee is that a Deputy Supervisor must be appointed to cover for times when your sole supervisor or all your joint supervisors are absent, either in the short-term at conferences and holidays or in the long-term on sabbatical. Therefore, during your first few weeks in the Department you also need to agree with your supervisor who should deputise in event of absence. This person need not have a detailed knowledge of your research (hence, the term 'Deputy Supervisor' is somewhat misplaced!). He or she must simply know enough to approve any novel experimental work or to stop it if worried by the safety aspects. However, there is no problem if your Departmental Advisor also acts as your Deputy Supervisor, if s/he agrees.

Once you have agreed, in consultation with your supervisor(s), on your Departmental Advisor and Deputy Supervisor, you must inform the Graduate Studies Secretary. You can do this by entering the names on the Graduate Student Questionnaire, a copy of which is included as an appendix to this handbook. Make sure you complete all the items on this form and return it to Marion Beckett by the end of Week 1 (17th October 2008).

5. PROJECT MANAGEMENT

A Project Management scheme is included in the graduate course structure. This allows and encourages you as the student to take responsibility for the successful outcome of your research by assessing expectations and progress throughout the duration of your course (see the 'project management form' entries in the DPhil Diary and the Two-Year MSc by Research Diary). It will enable you to flag up any concerns you might have that your research is not keeping to schedule, so that your supervisor and, if necessary, the Graduate Studies Committee can consider whether to take remedial action if required. If you are expressing such concerns on a particular Project Management Form, you must also send a short e-mail to the Director of Studies to warn him of this. He will then consider your Project Management Form as a priority matter.

It is, therefore, compulsory that you attend the Project Management workshop organised by the Director of Studies on Wednesday of Week 4 (5 November 2008) during which the workings of the scheme will be explained. Experience of project management, a useful generic skill, is valued by graduate recruiters, and for those of you who remain in academia Gantt charts are often a requirement when academics apply for research funding.

6. GRADUATE COURSES

6.1. ASSESSED COURSES

The examiners of your DPhil or MSc thesis will be asked to state whether they are satisfied that 'the candidate possesses a good general knowledge of the particular field of learning within which the subject of the thesis falls'. The role of lectures is, therefore, not only to deepen your knowledge in your own specialist area of research but also to broaden your general knowledge within materials science and engineering. Accordingly, the first requirement for transfer from PRS to DPhil/MSc status is that you have passed two assessed courses, at least one of which must fall in an area **not** directly related to your own research topic.

The handbook on 'Postgraduate Lecture Synopses and Research Colloquia' lists the assessed courses on offer under the title 'Postgraduate Teaching'. These include the third year undergraduate options, which you may attend and offer for assessment by participating in the appropriate tutorials or classes – provided, of course, that you have not already taken the course as an undergraduate! Other courses are assessed by a series of mathematical problems or written questions that you must complete and submit to the lecturer for marking. You should agree your choice of assessed courses with your supervisors, to make sure they are acceptable for your transfer requirement.

Due to the diverse range of students' academic backgrounds and the increasingly interdisciplinary nature of modern research, your supervisor might advise you to attend courses other than those listed, either from those given within the Department (eg the first year Crystallography course) or from outside. The handbook on 'Postgraduate Lecture Synopses and Research Colloquia' lists all postgraduate courses that are being given within the Mathematical, Physical and Life Sciences Division. If you wish to offer such a course as one of your two assessed courses, then you should first discuss whether this is appropriate with your supervisor before getting approval from the Director of Studies (DoS). Provided your performance on the course can be properly assessed, the DoS will be sympathetic to your request because the Department's policy is to make graduate provision responsive to the needs of the individual student.

If you attend an undergraduate lecture course as one of your assessed courses, please let the lecturer know so that he/she is aware of the need to provide an assessment for you.

Note that the handbook on 'Postgraduate Lecture Synopses and Research Colloquia' only gives the times for lectures in Michaelmas Term (MT, up to Christmas). The lecture times for Hilary Term (HT, from New Year to Easter) will be available at the start of that term and can be found on the Department web site under www.materials.ox.ac.uk/teaching/. Information on other lecture courses are available at <http://www.mpls.ox.ac.uk/intranet/teachingandlearning/graduateprog.html> for research students.

MATERIALS MODELLING

In the first two weeks of Hilary Term a full-time course on materials modelling is run. This will count as two assessed courses towards the requirements for transfer of status from PRS to DPhil.

6.2 SKILLS-TRAINING COURSES

Graduates need to be skilled not only in the experimental and/or theoretical techniques relevant to their own research, but also in skills for communicating their results to a wider audience and for managing their own research programme and future career development. The handbook of 'Postgraduate Lecture Synopses and Research Colloquia' lists the different skills courses on offer under the title 'Postgraduate Training'. You should keep a log-book or portfolio to record the various training that you undertake, of all kinds, formal and informal, since you may be asked to summarise this by your research sponsor or by a prospective employer and you will be required to summarise it on your applications for transfer of status and confirmation of status. Skills training available to you as graduate students includes:

- (i) Project management skills (Dr A O Taylor and others, MT Week 4) ;
- (ii) Presentation skills (Staff of OUCS & Dr A O Taylor, HT Week 2) ;
- (iii) Writing skills, lab notebooks, IPR and patents (Dr H E Assender & others, HT Week 5) ;
- (iv) Information skills (Staff of Bodleian & Dr A O Taylor, MT Week 2) ;
- (v) Career-planning (Denise Best, alumni of Dept, & Dr A O Taylor, MT Week 5) ;
- (vi) Workshop skills (Laurie Walton, throughout year) ;
- (vii) Microscopy skills (Dr Mike Jenkins and others, modular) ;
- (viii) Modelling skills/Introduction to the MML (Dr Paul Warren, MT Week 1) ;
- (ix) Key skills (UK-GRAD Graduate School, second (or third) year) ;
- (x) Institute of Materials – Benefits of student membership (Mr B Knott, MT Week 4);
- (xi) Poster presentation skills (Dr A O Taylor, MT Week 7)) ;
- (xii) Teaching skills (Lecturing, laboratory demonstrating, tutorials, classes, maths classes, advanced A/V equipment [see lecture lists]) ;
- (xiii) Quality Management and Environmental Management (ISO 9000 and 14,000) (Dr D Orton, Rolls Royce, HT week 8);
- (xiv) Academic Writing Skills (for non-native English speakers).

Attendance at the project management lecture in Week 4 of Michaelmas Term is compulsory. It is also strongly recommended that you attend the lectures in Hilary Term on 'Presentation skills' and 'Writing skills', since you will need the former to give a good presentation at your first-year viva (see section 10) and second-year talk (see section 12) and you will need good writing skills for your first-year report (see section 10) and your thesis (see section 13). These courses assume you know the

basics of word processing and use of Powerpoint, but introductory courses to these (and a wide range of other IT courses) are available from the University Computing Service (www.oucs.ox.ac.uk/itlp/). Students whose first language is not English, should attend the courses on 'Academic Writing' that are offered by the Oxford University Language Centre at 12 Woodstock Road (www.lang.ox.ac.uk). You should also attend the lecture in Week 2 of Michaelmas Term on 'Information Skills' as the latter is critical for accessing the research already done in your chosen field. In Michaelmas Term some alumni of the Department, together with Dr Denise Best from the Oxford University Careers Service, will run a compulsory and very useful workshop on Career Planning - Looking to the Future. Further information about the Careers Service can be found on their website (www.careers.ox.ac.uk).

Some of you may find it useful to attend the course 'Scientific Computing for DPhil Students' run by the Oxford Computing Laboratory. This will run in 2008/09 (Tuesdays and Fridays, 12 noon – 1.00 pm Weeks 1-6. MT: Numerical (Non) Linear Algebra; HT: Differential Equations). (Further details from Lotti Ekert, lotti.ekert@comlab.ox.ac.uk).

Since Materials Science is strongly linked with technology and therefore wealth creation, you might like to develop your business skills by attending a set of lectures in a series called 'Building a Business' organised by The Oxford Science Enterprise Centre, part of the Saïd Business School. The lectures take place at 5.30pm on Tuesdays at the Saïd Business School.

Lecture 1, Taking First Steps, Company Basics, 4 November

Lecture 2, Intellectual Property, 11 November

Lecture 3, Negotiation Skills, 18 November

Lecture 4, Raising Capital, Doing Deals, 25 November

Lecture 5, Markets, Finding, Reaching, Satisfying, 20 January 2009

Lecture 6, Product Development, 27 January 2009

Lecture 7, Understanding Financial Control, 3 February 2009

Lecture 8, Entrepreneurship and the Ideal Business Plan, 10 February 2009.

Further details of the course and registration information can be found at the following web address: <http://www.sbs.ox.ac.uk/entrepreneurship>.

The lecture on 'Intellectual Property' being held on Tuesday of 5th week MT (11 November 2008) is particularly recommended, as understanding intellectual property rights (IPR) is very important for all researchers, whether academic or in industry. You should note that the University has in place arrangements governing the ownership and exploitation of intellectual property generated by graduate students in the course of their studies. The University claims ownership of certain forms of intellectual property that students may create, as described in the policy document included as an appendix.

If you wish to attend a key skills training course that is not offered by the Department of Materials or MPLS Division and for which a fee is charged, you may apply to the Director of Studies for funding using a copy of the form in the appendix of this handbook.

If you wish to use the supervised workshop in the basement of the Hume-Rothery building, then it is essential that you first attend a Workshop skills course given by Laurie Walton, the Head of Workshop. Similarly, if you wish to use the electron microscopes, then you should first complete an access request form which is available from the website www-em.materials.ox.ac.uk/internal/index.html. This form should be returned to Mrs Katherine Hartwell (Katherine.hartwell@materials.ox.ac.uk) preferably as an email Word attachment, once you and your supervisor have completed it. You can download from the same web address the 'Facility Guide' which gives full details of the microscopes available. (A hard-copy of these may be found in the handbook on 'Facilities and Procedures'). If you wish to use the computer facilities in the Materials Modelling Laboratory for your research, then you should attend the lecture on 'Introduction to the Materials Modelling Laboratory' which is given by Dr Paul Warren, the Senior IT Officer, in Week 1 of Michaelmas Term. You should also attend the lecture in Week 4 of Michaelmas Term by Mr Knott on the benefits of student membership of the Institute of Materials. The receipt of their monthly magazine 'Materials World' and attendance at their meetings should both increase your general knowledge and improve your networking skills!

The UK-GRAD Graduate School (or its equivalent) is compulsory for all EPSRC-funded students who started their research after 1 October 2000 and is one of the conditions for receiving a grant from the Engineering and Physical Sciences Research Council (EPSRC). Attendance at these residential schools is free for EPSRC-funded students but other students may need to pay a fee, which varies dependent on the course but is in the region of £500. The MPLS Division arranges an Oxford Graduate School and you may attend this at no charge even if you are not sponsored by the EPSRC. We recommend that you attend a Graduate School during the summer of your second year. The purpose of these schools is to help graduates develop their awareness of 'key skills' and enhance their career development. Key skills are those in addition to your academic and research skills that employers both inside and outside academia are looking for. The government and funding agencies believe that these skills are essential for maintaining employability in a global economy which is increasingly requiring people to respond to and anticipate change. The University College London on their website www.ucl.ac.uk/keyskills/resources/Grid has presented a matrix of these skills:

Academic Skills	Self-Management Skills	Communication Skills	Interpersonal Skills
Library research	Reflection on learning	Written materials	Group work/ Team work
Synthesis of data	Self-awareness/ Assessment	Oral/Visual presentations	Understanding/ Tolerance of others
Critical thinking	Action planning/ Decision making	Active listening	Negotiation
Active learning	Time management/ Self discipline	Foreign language(s)	Peer assessment
Problem solving	Independence	Numeracy	Leadership
Project management	Initiative/ Proactive approach	Information skills	Manage change/ Adaptability
Creativity/ Innovation	Budgeting	IT skills	

Further information about these graduate schools can be found on the EPSRC website and at www.grad.ac.uk. This site also contains an excellent section designed by postgraduates for postgraduates under 'just for postgraduates', and you are strongly advised to browse through this at your earliest convenience. It contains five interlinked sections:

- Managing yourself – evaluating your skills, setting personal objectives
- Managing your research – time management, managing your supervisor, support mechanisms
- Planning your career – building a career plan, effective networking
- Launching an academic career – publications, project management
- Marketing yourself to other employers – CVs and applications, interview techniques

In their February 2001 review of the site, Science magazine wrote: 'The great strength of this site is that it has been put together for a very specific target group (doctoral students) and has clearly been written by people who know what they are talking about. From the 'eight problems you can beat' - such as lack of motivation, poor time management, and limited support - to the 'nine factors to tip the balance' in your favour when it comes to getting an academic job, this site is tailored to the needs of doctoral students and uses genuine examples. It talks about issues that are difficult to research elsewhere, such as building a good working relationship with your supervisor and writing up your thesis'.

In addition you might find the UK Grad monthly bulletin for research students of interest at http://www.grad.ac.uk/cms/ShowPage/Home_page/Publications/PGR_tips_podcast/p!eLagjg.

Further skills training information and courses can be found via the University's 'skills portal' at www.skillsportal.ox.ac.uk and in the MPLS Division's "Graduate Skills Training Induction Pack" with which you have been issued.

The Skills Portal is a new website created for all research students, postdoctoral researchers and their supervisors at Oxford. It brings together a range of information about transferable skills development and has details of skills training courses, seminars and workshops offered throughout the university in a searchable database. There are links to online resources and tips on subjects such as project management and teaching skills. It also gives advice on getting the most from your time at Oxford and putting yourself in the best possible position to succeed in your career, whatever it might be. The Skills Portal Forum is the place to ask questions, discuss issues with other researchers and make your views known to the people who organise the training.

7. CERTIFICATE IN ELECTRON MICROSCOPY

The Electron Microscopy & Microanalysis Group, headed by Prof David Cockayne, offers a Certificate in Electron Microscopy. The programme of study associated with this certificate undergoes external evaluation and has been approved by the University of Oxford. Prospective students are encouraged to register their intent before embarking on any of the EM modules or lecture courses.

Introduction

The Certificate in Electron Microscopy is awarded to researchers (DPhil students, Postdoctoral researchers) who successfully complete an approved set of graduate lectures and modular training courses on a selection of electron microscopy (EM) techniques. The course includes a specified number of hours of practical work, and in some cases the use of advanced techniques. The certificate is not a formal requirement for those undertaking training in electron microscopy techniques, but is an additional qualification for researchers to gain during their time at Oxford, if they wish to do so. The time required to complete the certificate is flexible; it may be completed within a year, but equally can be spread over the course of a whole DPhil project or a period of post-doctoral research.

The Course Structure

The exact title of your Certificate will vary depending on the courses you have chosen. In order to successfully pass the Certificate, you must achieve the following standards:

- pass at least two practical training modules, and one associated lecture course;
- become an approved user of at least one microscope, with 100 hours of independent use (a log book is kept, which is regularly reviewed by the student's mentor);
- submit a portfolio of your work to the Director of EM Facilities (Dr Crispin Hetherington) or his nominee, such work to be adjudged competent.

The certificate will also detail modules and lecture courses attended, and advanced training given.

How do I apply for the Certificate?

For further information or if you wish to register for the Certificate, please contact Mrs Katherine Hartwell (either by telephone on (2)73676, or by email, katherine.hartwell@materials.ox.ac.uk). On registration you will be assigned a mentor who will guide you through the Certificate, and a Course handbook which will outline all the course procedures. It is important to register before starting the course, so that your progress from start to finish can be monitored.

8. SCIENCE & ENGINEERING AMBASSADORS SCHEME (SEAS) AND RESEARCHERS IN RESIDENCE SCHEME

What are the schemes about?

There are important schemes that aims to put “real” scientists and engineers in school classrooms with the intention of motivating school children towards further study and careers in science and engineering. This is a serious concern for the Government, since falling numbers of scientists and engineers involves not only the closure of university departments and lost research, but the eventual loss of jobs as industries move abroad to countries where sufficient able graduates can be recruited.

What does a Science and Engineering Ambassador (SEA) do?

SEAs co-operate with teachers in a variety of ways depending on the needs of the school and the skills of the SEA. Examples include careers advice and helping with projects or school clubs.

What do I gain?

Apart from it being good for the Department as a whole if some of our research students are involved with such schemes, it is a good thing to have on a CV for jobs in industry or education: for anyone even remotely thinking of a career in teaching it can be very helpful indeed as it provides useful contacts in teaching and a good insight into what is involved. Anyone who is already involved with schools through their children, as governors etc may also find it useful.

Finally, developing communication skills with the general public, as opposed to communicating with other scientists and engineers is a valuable personal skill in itself.

Where can I find out more?

Information on http://www.stemnet.org.uk/Ambassadors_SEAs/Who_are_SEAs.cfm will be helpful or contact Martin Carr (Schools Liaison Officer: Email: martin.carr@materials.ox.ac.uk, Tel. 73710) in the Department.

How do I get involved?

If you are interested in becoming a SEA, please contact Martin Carr (martin.carr@materials.ox.ac.uk) to express interest in the short one-day course run by SETNET. Note that this course will only run if there are sufficient numbers of students interested.

Researchers in Residence Scheme

This is a similar scheme, intended to enable researchers to share their work with secondary school pupils. For details see <http://www.researchersinresidence.ac.uk>.

9. DEPARTMENTAL COLLOQUIA

We have seen that the first requirement for transfer from PRS to DPhil/MSc status is that you have passed two assessed courses. The second requirement is that you have attended at least 50% of the Departmental Colloquia during your first two terms. A list will be circulated at each colloquium for you to sign so as to provide a record that you were present. The Department regards attendance at the Thursday afternoon colloquia as very important in broadening your general knowledge about materials science and engineering. The invited lecturers are asked to spend the first part of their talk in bringing up to speed graduate students with little or no expertise in the colloquium topic. Coffee and biscuits is served immediately before the colloquium in the foyer outside the Hume-Rothery lecture theatre. This is to encourage students to meet the speaker, if they so wish, and to discuss the topic of the talk amongst themselves and with the other academic staff attending.

Some students involved in interdisciplinary projects may feel they want to attend colloquia in other departments in order to broaden their knowledge of other subjects. In such cases, the Department will accept attendance at up to 4 colloquia in other departments towards the 1st year course requirement. Students will need to obtain the agreement of their supervisor in advance which must be copied to the Graduate Studies Secretary and subsequently obtain confirmation from their supervisor that they have attended the colloquia. Details of colloquia being held in the Departments of the Mathematical, Physical and Life Sciences Division can be found at the following website address: <http://www.mpls.ox.ac.uk/research/colloquia.html>.

10. FIRST-YEAR REPORT AND VIVA

The third requirement for transfer from PRS to DPhil/MSc status is that you pass your first year viva, which is usually held on a Friday afternoon during weeks 3, 4 or 5 of Trinity Term. (This academic year these correspond to 15 May, 22 May or 29 May 2009 respectively - **please keep these dates free.**) The viva involves you giving a five-minute summary on the progress of your research during

the first year, the talk ending with a single slide displaying the proposed timetable for completion of your DPhil or MSc thesis. (You must use a visualiser rather than a data projector due to the tight time constraints between vivas.) This oral presentation will be based on the written 2,500 word first-year report that you will already have submitted to the Director of Studies by the end of the first week of Trinity Term (i.e. by Friday, 1 May 2009 for this academic year). Your five-minute oral presentation will be followed by 5-10 minutes of questions or suggestions from members of the Department. The Director of Studies will also raise any apparent problems you might be having with your two assessed courses or attendance at the Departmental Colloquia. (No technical questions will be asked about courses or colloquia).

The vivas are always held in a friendly, informal atmosphere. (There is no need to don the black and white attire of Oxford University's *subfusc* academic dress.) The intention is to provide helpful and useful feedback to you (and sometimes your supervisor!) on the progress and directions of your research. The Director of Studies will send you a letter after the viva detailing any feedback and letting you know the outcome of the viva. Very occasionally PR students are requested to attend a new viva at some later date if serious concerns are expressed over their progress or directions. You should note in your diary now that lectures on 'Presentation skills' and 'Writing skills' will be given during Week 2 and Week 5 respectively of Hilary Term. This is well in advance of your viva and is to help start you thinking about the preparation of your five-minute talk and 2,500 word report.

Provided you have successfully completed your two assessed courses, attended sufficient Departmental Colloquia and your first year report and the viva are satisfactory, at the end of your first year the Director of Studies will send you form GSO.2 to transfer from PRS to DPhil or MSc status. This transfer is then subject to approval by your supervisor.

11. LITERATURE REVIEW

By the end of your First Year you must successfully complete a Literature Review, the aim of which is to ensure that early in your project you are fully conversant with the prior research in your area of study. Your Literature Review should be completed and submitted to the Graduate Studies Secretary by 30th September 2008. It should comprise a survey of your research field within 7,000 to 10,000 words (excluding references and captions). Your survey should not omit any references to work that would crucially affect the nature or direction of research, but it should not simply be a catalogue. It should show critical judgement, and above all it should tell a scientific 'story', setting the scene for your own work. You should regard this as the preparation of one chapter of your eventual thesis. Its structure and content are discussed further in the 'Writing skills' workshop. Your

Literature Review will be read by a member of the Department whose comments on overall standard, breadth of coverage, critical judgement shown, and style and presentation of the review will be copied to you. A strong incentive for writing a high-quality critical review is provided by the Institute of Materials, who offer a £350 Materials Literature Review Prize for the best review from a graduate studying in the UK. Further information can be found on the IoM3 webpage at <http://www.iom3.org/content/student-awards>. Winning reviews are published in the Institute's journal, Materials Science & Technology. Students from the Department have won a number of prizes in the past, so a high standard has been set.

12. SECOND-YEAR TALK

Wednesday, Thursday and Friday (11.00 am – 6.00 pm) of Week 7 in Hilary Term are reserved for the second-year talks, in which the students present their current research findings. The talks are each allocated 20 minutes which comprises 15 minutes for presentation and 5 minutes for questions. Second year students might like to brush up on their Presentation skills by attending the lecture in Week 2 of Hilary Term. The best talk in terms of preparation and presentation is awarded the Hetherington Prize. This provides a prize of £100 and the winner's name is added to the list on the award board in the foyer to the library. The talks will be judged by the Director of Studies and by the senior members of academic staff that chair the two afternoon sessions. They will be looking at the quality of the visual aids; the pace and diction; the structure of the talk; the ability to get points across at peer-group level; self-confidence and the handling of questions; and timing. The Director of Studies will give written feedback to the students after the talks.

13. THESIS WRITE-UP, SUBMISSION AND VIVA

The 'Just for Postgraduates' section of the UKGRAD website www.grad.ac.uk contains an excellent section on 'Writing-up', with many helpful tips. Some of these will be covered during the 'Writing skills' lecture in Week 5 of Hilary Term, which will also deal with the practicalities of producing the thesis. You will need to prepare at least four copies of the thesis: one for the University's Bodleian Library, one for the Department's Library, one (or more) for your supervisor(s), and one for yourself. You are also required to submit an electronic copy of your thesis to the Oxford Research Archive. It is up to you to cover the cost of producing the copies of your thesis. However, you can claim a contribution of £30 towards the cost of DPhil or MSc theses when you submit one final hardbound copy to the Department Librarian. At this time the Department would also like you to provide the Librarian with 2 pdf copies of your thesis (on CD's).

Further detailed information on the examination process may be found in:

- (i) **the notes of guidance (www.admin.ox.ac.uk/gso/forms/) from the Graduate Studies Office. You should look at these notes early on during the writing of your thesis and make sure that you are in a position to submit form GSO3 and, if needed, GSO3c, GSO6 and GSO16 four to six weeks prior to submitting your thesis.**
- (ii) the 'Mathematical, Physical and Life Sciences Division's Graduate Handbook 2008-9' (www.mpls.ox.ac.uk/intranet/teachingandlearning/graduateprog.html). This contains useful sections on the preparation and submission of theses, the appointment of examiners and examination arrangements, and the notification of the results of the viva and the conferring of the degree.
- (iii) the University Regulations (the "Grey Book"), look at sections 11 (MSc) or 12 (DPhil) or 13 (EngD) - see www.admin.ox.ac.uk/examregs/contents.shtml

It suffices to note here that for the award of a DPhil you will need not only to have demonstrated a good general knowledge of your research discipline but also to have presented 'a significant and substantial' piece of research of a kind which might 'reasonably be expected of a capable and diligent student after three or at most four years of full-time study' (from Oxford University's 'Examination Decrees and Regulations'). External examiners will interpret this phraseology to mean that the DPhil thesis exhibits 'substantial evidence of original scholarship and contains material worthy of publication' (from the website www.grad.ac.uk). For the award of a MSc the standard required is that the candidate should have made 'a worthwhile contribution to knowledge or understanding of a kind which might reasonably be expected after two years of full-time study'.

Note the word limits for Materials Science theses:

- (i) MSc (by Research) 25,000 words;
- (ii) DPhil 40,000 words.

Only in exceptional circumstances will your supervisor be able to make a case to the Director of Studies for an increased word limit.

For the purpose of the examination, you only need to submit two soft-bound copies of your thesis (though you ought to make a third copy for yourself). Normally these are submitted a few weeks after the form GSO.3 for Application for Appointment of Examiners. Once appointed the internal examiner (usually a senior member of the Department) will contact you to arrange a date for the viva. This is usually 2-3 months after submission of your thesis, but special arrangements can be made for an early examination if you have good reason to need this. In this case, you should contact the Departmental Graduate Studies Secretary well in advance of submission to ensure all the paperwork is handled quickly.

If all goes well at the viva you will be granted 'leave to supplicate', a quaint Oxford term dating back to 1691. You will then submit to the Examination Schools forms GSO3a and GSO26 together with a hard-bound copy of your thesis incorporating any amendments required by the examiners for deposit in the Bodleian Library and wait for a suitable Saturday when you may have your degree conferred at the Sheldonian Theatre. Good luck!

Useful Books: W E Russey, H F Ebel and C Bliefert, How to Write a Successful Science Thesis (Wiley, 2006);
R Arshady, Science and Medical Style Guide, Volume 1 (Kentuo, 2006).

14. SUPPORT STRUCTURE

The Department of Materials is a relatively small and cohesive unit so that you will find support as a graduate student from many quarters, not only from your own immediate research group and supervisor. In addition, of course, you have a second line of support from your College, not only for personal and academic matters, but also often for help with travel and hardship. The following is a list of people in the Department you might need to approach for personal, financial, technical or academic advice; you should have been given a corresponding list for your College.

Graduate Studies Administration:

Director of Studies: Dr Adrian Taylor
(adrian.taylor@materials.ox.ac.uk) 83227)

Graduate Studies Secretary: Marion Beckett
(marion.beckett@materials.ox.ac.uk, 83226)

Graduate Studies Committee:

Chairperson: Dr Adrian Taylor
(adrian.taylor@materials.ox.ac.uk, 83227)

Prof Chris Grovenor
(chris.grovenor@materials.ox.ac.uk)

Dr Simon Benjamin
(simon.benjamin@materials.ox.ac.uk, 73732)

Joint Consultative Committee for Graduate Students (JCCG):

Chair: Karleen Dudeck (karleen.dudeck@materials.ox.ac.uk, 73660)
Secretary: Adam Shaw (adam.shaw@materials.ox.ac.uk, 83338)

First-year representatives: To be elected at Induction Course
MT08-TT11

Second-year representatives: MT07-TT10	Guoquan Liu Katie Moore Geoffrey Otieno	(guoquan.liu@materials.ox.ac.uk, 73717) (katie.moore@materials.ox.ac.uk, 73766) (geoffrey.otieno@materials.ox.ac.uk, 83342)
Third-year representatives: MT06-TT09	Douglas Jordan Karleen Dudeck Adam Shaw	(douglas.jordan@materials.ox.ac.uk, 73746/ 83212) (karleen.dudeck@materials.ox.ac.uk, 73660) (adam.shaw@materials.ox.ac.uk, 83338)
Overseas representative:	To be elected at first JCCG meeting	
Safety Officer:	Dr Mike Jenkins (mike.jenkins@materials.ox.ac.uk, 73655)	
Harassment Advisors:	Dr Laura Jones (laura.jones@materials.oxford.ac.uk, 73750)	
	Dr Jan Czernuska (jan.czernuska@materials.ox.ac.uk, 73771)	
	Paula Topping (paula.topping@materials.ox.ac.uk, 73658)	
	Laurie Walton (laurie.walton@materials.ox.ac.uk, 73687/73749)	
Counselling Service:	Secretary (no formal referment required) (70300)	
Teaching:		
Practical Class Organiser:	Dr Angus Wilkinson (angus.wilkinson@materials.ox.ac.uk, 73792)	
Teaching Laboratory Technician:	Paula Topping (paula.topping@materials.ox.ac.uk, 73658)	
Maths Classes Organiser:	Dr Vlado Lazarov (vlado.lazarov@materials.ox.ac.uk, 73739)	
Chair, Tutors' Committee:	Dr Jason Smith (jason.smith@materials.ox.ac.uk, 73780)	
Chair, Faculty of Materials:	Dr Jan Czernuszka (jan.czernuszka@materials.ox.ac.uk, 73771)	
Chair, Dept Academic Committee:	Dr Adrian Taylor (adrian.taylor@materials.ox.ac.uk, 83227)	
Library:		
Librarian:	Grace Sewell (library@materials.ox.ac.uk, 73697)	
Academic Librarian:	Prof George Smith (george.smith@materials.ox.ac.uk, 73762)	

Schools Liaison Officer:	Dr Martin Carr (martin.carr@materials.ox.ac.uk, 73710)
IT Support:	Dr Paul Warren (paul.warren@materials.ox.ac.uk, 73727)
	Dr Alex Cock (alex.cock@materials.ox.ac.uk, 73727)
	Mr Khalid Schofield (khalid.schofield@materials.ox.ac.uk, 73728)
Technical Support:	Mr Chris Akinola (chris.akinola@materials.ox.ac.uk, 73667)
Head of Workshop:	Laurie Walton (laurie.walton@materials.ox.ac.uk, 73687)
Stores Technician:	Ian Sutton (ian.sutton@materials.ox.ac.uk, 73691)
Administration:	
Departmental Administrator:	Mrs Alana Davies (alana.davies@materials.ox.ac.uk, 73747)
Deputy Administrator (Academic & Personnel):	Dr Laura Jones (laura.jones@materials.ox.ac.uk, 73750)
Deputy Administrator (Academic & Finance):	Dr Ian Stone (ian.stone@materials.ox.ac.uk, 73712)
Deputy Administrator (Finance):	Mr Tim McAree (tim.mcaree@materials.ox.ac.uk, 73722)
Secretary to Head of Department:	Carol Spruce (carol.spruce@materials.ox.ac.uk, 73737)
Administrative Secretary:	Alison Jewitt (alison.jewitt@materials.ox.ac.uk, 73666)
Finance Officer at Begbroke:	Laura Vockins (laura.vockins@materials.ox.ac.uk, 83777)
General Office:	Kazia Fewings (kazia.fewings@materials.ox.ac.uk, 73680)
	Lyn Richmond (lyn.richmond@materials.ox.ac.uk, 73777)

15. FACILITIES

The Department and University provide a range of general facilities to which you will have access during the course of your research:

- Libraries (books, journals, literature searching)
- Mechanical workshop (tools, construction of components)

- Electronics workshop (design/construction/repair of electronic units)
- Heat treatment workshop (furnaces for a variety of needs)
- Photographic (film processing and printing, digital images)
- Specimen preparation (cutting, grinding, polishing)
- Electron microscopes (SEMs, TEMs, microprobes)
- Optical microscopes
- X-ray diffraction facilities
- Stores (supply of chemicals, components, stationery etc.)
- Computing (email, DTP, backup of desktop computers, modelling, special printing etc.)

You will find full details of the facilities, and how to obtain access and training, in the Department's handbook on "Facilities and Procedures".

16. GAINING TEACHING EXPERIENCE

16.1. Junior Demonstrating in the Teaching Laboratory

An essential part of the undergraduate courses is practical work which is undertaken in the Teaching Laboratories. This provides an opportunity for graduate students to gain experience of teaching and at the same time earn a useful supplement to their subsistence grant. The Department promotes this by way of Teaching Assistantships (TA).

Each year the Department requires about 15 TAs to help with the Undergraduate Practical Classes. The TA appointments are for one year, with the expectation of renewal for a second and perhaps a third year subject to satisfactory performance, and provided the Department continues with the scheme. Students will be remunerated at the appropriate rate **for work done**.

Each Teaching Assistant on Practical Class duty will be in the class for, typically, 4-6 afternoons (2.00 - 5.00 pm) for each of two terms. There will also be some training time, including a requirement to assist with setting up equipment, and to carry out the full experiment & to produce a set of model results. Each TA will be expert in one particular undergraduate practical being done during the term. Other similar duties include helping with the Open Days the Department arranges for schools. The contract is for up to 120 hours per year, but in most years the actual requirement should be somewhat less. As ever, good verbal communication skills and a reasonable amount of practical expertise will be essential requirements. You should also have the agreement of your supervisor from whom we will seek a reference. Further details on junior demonstrating can be obtained from the Practical Class Organiser Dr Angus Wilkinson (73792, angus.wilkinson@materials.ox.ac.uk).

16.2. Tutoring

A special feature of undergraduate courses at Oxford is the college tutorial. Every week students prepare work for 1-2 tutorials, which they then discuss (usually in pairs) with a college tutor. Tutoring undergraduates is valuable experience and an excellent way of consolidating your knowledge. It also provides extra income. If opportunities arise, in an area where you feel confident, you are encouraged to take on a moderate amount of teaching (discuss it with your supervisor). You should be aware though that the ratio of staff and postdoctoral researchers to undergraduates is high in the Materials Department and few postgraduate students actually have this opportunity. Some demonstrators are needed for crystallography and mathematics classes. Further details on tutoring can be obtained from the Chair of the Tutors' Committee, Dr Jason Smith (73780, Jason.smith@materials.ox.ac.uk) or, for Maths Classes, from Dr Vlado Lazarov (73739, vlado.lazarov@materials.ox.ac.uk).

16.3. Training to Teach

A number of training workshops are organized for those new to teaching. Details are announced by e-mail and appear in the termly lecture lists.

17. THE JOINT CONSULTATIVE COMMITTEE FOR GRADUATES (JCCG)

The Department of Materials is very interested in receiving feedback and suggestions from its students on everything that impacts their time here. For this reason we have the JCCG, a body through which the postgraduate students have an official voice in the decision making of the Department. The JCCG consists of 2 or 3 student representatives from each year together with the members of the Graduate Studies Committee. Meetings are held once a term (and usually one in the Long Vacation) and student representatives act as Chair and Secretary. The minutes of the JCCG are then brought to the attention of the senior committees in the Department. A JCCG representative reports to the Academic Committee. It is the aim of the JCCG to provide the Director of Studies and the hierarchy of the Department with a sounding board to gauge postgraduate opinion as well as to provide postgraduates with a forum to bring up issues concerning the running of the course and the many other issues concerning them and the Department.

A similar committee exists for the undergraduate course (JCCU), and both JCCU and JCCG have managed to influence many decisions of the Department on the course structure and teaching provision, and helped to introduce new initiatives.

One of the roles of the JCCG is to collate feedback on graduate lectures and report this to the lecturers concerned. All the lecturers are asked to circulate questionnaires at the end of their course.

The JCCG is keen to obtain your feedback on the courses, and sees the questionnaires as very important, so please make sure you receive, complete and return your forms. Apart from student feedback on graduate lectures, the JCCG organizes an annual questionnaire covering a broad range of subjects such as facilities, course structure and colloquia. However, it is the intention that the student representatives will raise any matters or suggestions brought to their attention by other postgraduates. Therefore, your feedback on any aspect of the course is welcome at all times throughout your stay in the Department. Any comments will be brought up at the next JCCG meeting, so feel free to contact any of the representatives. (A full list is given in section 14 of this booklet.)

To provide a forum at which (i) your views can be sought and (ii) you can meet and network with research students from other groups, once a week, on Wednesdays at 11.00 am in the Holder Café, the JCCG organise free coffee and biscuits for all research students.

18. CONFERENCE AND STUDY TRAVEL

During the course of your postgraduate studies, it is likely that you will have to travel to a conference or to visit other laboratories as part of a collaborative research programme. The Department is keen that every student should have the opportunity to attend at least one conference in their field of study during the course of their project. We would not expect students to cover the cost of such travel, this being funded instead from grants or other sources. However, this means it is essential that students organise themselves to secure sources of funding well in advance of the date of registration and travel, and before any expenditure has been incurred. This of course does not apply to routine travel, such as visits to an industrial sponsor, the costs of which should be included within the grant allocation for the project and are claimed by means of a travel claim form or direct from the sponsor.

If you are considering travelling to attend a conference or for a study visit, first consult your supervisor and consider possible sources of funding several months before you plan to travel. There are a number of sources to which you can apply for travel funds, including your College, the Institute of Materials (all students are encouraged to join) and the Institute of Physics (if you are a member). Some sources are available for travel to given locations, such as the Sasakawa Fund for study visits to Japan. Your supervisor will be able to advise you on suitable sources of funding, and you can also consult the Director of Studies or look at the Department's web pages.

There are sources of funding, both internal and external (such as the Worshipful Company of Armourers and Brasiers and the Worshipful Company of Founders), which are available to graduate students to fund conference and study travel. Grants from the Department would typically be to the value of a few hundred pounds, and would normally be awarded only once during the period of a course of study. However, it is also possible to apply more frequently for smaller amounts of money (say, £100) to 'pump-prime' applications to other sources who would be paying the majority of the

cost (such as the Sasakawa Fund). Note that students with specific research funding (such as a CASE studentship or a government or industrial research grant) are expected to use these sources to cover the cost of travel and not apply to the Department.

Applications for Departmental travel funds should be made **well in advance**, using the specific Department form, a copy of which is attached as an appendix to this Handbook. The form can also be downloaded from the Department's website at <http://www.materials.ox.ac.uk/local>. It is located under the 'Administrative Forms and Documents' section. Students will need to obtain the support of their supervisor for the application, and also indicate the other sources of funding they have approached to cover at least some of the cost of travel.

Each year, usually in Hilary Term, the Head of Department will circulate information on how to apply for one of four annual 'Founders Graduate Travel Scholarships', each worth £500.

Information on support from the Institute of Materials can be found at <http://www.iom3.org/content/student-awards>.

Requests for support from the Armourers and Brasiers' company should be made to The Clerk, Commodore C W Waite, RN, Armourers & Brasiers' Company, Armourers Hall, 81 Coleman Street, London, EC2R 5BJ.

Holders of UK passports can apply to the Royal Academy of Engineering. They support students working on projects with industrial links or direct industrial relevance and such links/relevance should be made clear in your application. Details of <http://raeng.org.uk/research/researcher/travelgrant/default.htm>.

Finally, in addition to all of the funding described above, all EPSRC-sponsored students may apply to the Director of studies, in either their second year or their third year, for a grant of up to £500 from the 'Roberts Skills Training Fund', normally in order to attend a conference at which they are presenting their work as an oral or poster contribution. Applications should be made using the abovementioned Department form (as appended to this handbook).

19. CONTINUATION BURSARIES AND HARDSHIP FUNDS

(a) Continuation Bursaries

As indicated in section 2 of this handbook, the normal period for completion of a DPhil is 3 or 3½ years, and one of the purposes of the regular project management reviews is to assist in achieving the relevant target. However it sometimes happens that unavoidable or unpredictable delays or problems prevent completion in the allotted time. For this reason the Department has provision to fund a small number of continuation bursaries to assist with living costs during a few months over-run. Note however that the award of such a bursary is an exception: the funds for any one year are sufficient to help only a small fraction of the total number of DPhil students. **Normally, a student who has been funded for a 3½ year project will not be eligible for consideration for a continuation bursary.**

If you think that you are likely to over-run you should discuss this with your supervisor, and if necessary the Director of Studies, **before** your three year period has ended. The procedure for application for a continuation bursary is as follows:

- (i) The student/supervisor to make best efforts to source matching funds (bursaries will only be awarded in exceptional circumstances if matching funds are not offered).
- (ii) A **realistic** timetable for completion, including thesis writing, must be agreed with your supervisor.
- (iii) A formal written application should then be made to the Director of Studies (not by e-mail), to include your agreed completion plan and evidence of the matching funding.
- (iv) Your supervisor should write to the Director of Studies (e-mail is OK) to support your application and to confirm that your completion plan is realistic. This e-mail should also identify the grant code for any matching funds.

The current rate for a continuation bursary is pro-rata to £9,000 pa and the Department will normally fund up to 3 months (£2,250). Thus with the matching funding a period of **up to 6 months** funded continuation is possible. Regardless of this funding limitation your completion plan is expected to be a genuine assessment of the time required for completion - which will rarely be exactly six months.

(b) Hardship Funds

In total there is only a relatively small amount of money available within the Collegiate University to help with hardship. Your College Office is a key source of advice on some of the sources of hardship funds. Enquiries can also be made to student.funding@admin.ox.ac.uk. The list below outlines several sources for hardship funds.

University Hardship Fund (<http://www.admin.ox.ac.uk/shw/hardship.shtml>). Deadlines usually early in each of Michaelmas, Hilary and Trinity Terms.

Churches Commission for International Students (<http://www.admin.ox.ac.uk/shw/hardship.shtml>).

British Federation of Women Graduates (<http://www.admin.ox.ac.uk/shw/hardship.shtml>).

Childcare Relief Fund (<http://www.admin.ox.ac.uk/shw/hardship.shtml>).

Vice Chancellors' Fund Awards (<http://www.admin.ox.ac.uk/io/hardship.shtml>)

Application forms usually available in January.

Oxford Materials Hardship Fund. The Department is in the process of establishing a limited hardship fund. Once established, enquiries should be made via the Graduate Studies Secretary. Applications will be considered only in circumstances where there has been an unexpected and significant change in financial or personal circumstances of a kind that could not reasonably have been predicted and allowed for in advance.

20. PLAGIARISM, REFERENCING AND COPYRIGHT (A note from the University Educational Policy & Standards Committee)

This information can be applied to all aspects of assessment during the course.

In their **Essential Information for Students**, the University's Proctors and Assessor draw attention to two extremely important disciplinary regulations for all students.

“3 No candidate shall cheat or act dishonestly, or attempt to do so, in any way, whether before, during or after an examination, so as to obtain or seek to obtain an unfair advantage in an examination.

4 No candidate shall present for an examination as his or her own work any part or the substance of any part of another person's work.

5 In any written work (whether thesis, dissertation, essay, coursework, or written examinations) passages quoted or closely paraphrased from another person's work must be identified as quotations or paraphrases, and the source of the quoted or paraphrased material must be clearly acknowledged.

All undergraduate and graduate students must carefully read regulations 3, 4 and 5 in the Proctors' Disciplinary Regulations for University Examinations below. These make it clear that you must always indicate to the examiners when you have drawn on the work of others; other people's original ideas and methods should be clearly distinguished from your own, and other people's words, illustrations, diagrams etc. should be clearly indicated regardless of whether they are copied exactly, paraphrased, or adapted. Failure to acknowledge your sources by unambiguous citation and referencing constitutes **plagiarism**. The University reserves the right to use software applications to screen any individual's submitted work for matches either to published sources or to other submitted work. Any such matches respectively might indicate either plagiarism or collusion. Although the use of electronic resources by students in their academic work is encouraged, you should remember that the regulations on plagiarism apply to on-line material and other digital material just as much as to printed material.

...Where plagiarism is proven, it will be dealt with severely: in the most extreme cases, this can result in the student's career at Oxford being ended by expulsion from the University."

(The Proctors' and Assessor's Memorandum, Section 9.5 and 9.6
<http://www.admin.ox.ac.uk/proctors/pam/index.shtml>)

Guidance from the English Faculty provides a useful definition of plagiarism.

'Plagiarism is the use of material appropriated from another source or from other sources with the intention of passing it off as one's own work. Plagiarism may take the form of unacknowledged quotation or substantial paraphrase. Sources of material include all printed and electronically available publications in English or other languages, or unpublished materials, including theses, written by others.'

An on-line training course on how to avoid plagiarism is available at
http://www.skillsportal.ox.ac.uk/course_listing_details.php?code=OLC-1-1

Some Brief Guidance

Text

Take care when referring to the work of others. Not only are published words subject to plagiarism, but ideas and opinions can be plagiarised too. You should not allow the opinions and conclusions of others to appear to be your own or confused with your own criticism.

An extract from Stone IC & Tsakiroopoulos P, Materials Science and Engineering A, Vol.189 (1994) 285-290:

“The peak-aging time of Al-4wt.%Cu, aged at 463 K, was not altered by the addition of 20 wt.%SiCp. The particle size of the reinforcement and the matrix to reinforcement particle-size ratio did not affect the peak-aging time. This implies that, on a bulk scale, aging is not affected by the spatial distribution of the reinforcement, although it is likely to be affected locally.”

Here is one example of the use of this extract:

Stone and Tsakiroopoulos studied the aging of metal matrix composites based on Al-4wt%Cu containing 20wt% SiC particles [Stone & Tsakiroopoulos, 1994]. The peak-aging time of Al-4wt.%Cu, aged at 463 K, was not altered by the addition of 20 wt.%SiCp. The particle size of the reinforcement and the matrix to reinforcement particle-size ratio did not affect the peak-aging time. This implies that, on a bulk scale, aging is not affected by the spatial distribution of the reinforcement, although it is likely to be affected locally.

The first sentence is fine and is properly referenced. However the rest is plagiarised because (i) it is **directly copied** from the original without being identified as a quote and (ii) the author has not attributed the opinion in the fourth sentence to the original authors.

A second example:

Stone and Tsakiroopoulos studied the aging of metal matrix composites based on Al-4wt%Cu containing 20wt% SiC particles [Stone & Tsakiroopoulos, 1994]. They showed that the addition of the reinforcing particles had no effect on the time for peak aging of the matrix at 463K. The implication of this is that whilst

aging is likely to be affected locally by the dispersion of the particles, it is not affected macroscopically by the spatial distribution of the reinforcement.

This example is an improvement because the second sentence is now attributed to the original authors. The opinion in the final sentence is still plagiarised. This final sentence could be improved by

The authors concluded that the implication of this is that whilst aging is likely to be affected locally by the dispersion of the particles, it is not affected macroscopically by the spatial distribution of the reinforcement. This is a sensible conclusion.

because whilst the new author agrees with the original opinion/conclusion they have not passed it off as their own. A belt and braces approach might be:

The authors concluded, "This implies that, on a bulk scale, aging is not affected by the spatial distribution of the reinforcement, although it is likely to be affected locally" [Stone & Tsakirooulos, 1994]. This is a sensible conclusion.

Quite often you will not be simply referring to a single piece of published work, but comparing & contrasting several reports of relevance to a particular point in your own document and then offering your own considered opinion on this previous work and/or comparing it with your own data and conclusions. The principles illustrated above in respect of Stone & Tsakirooulos of course still apply to this more complicated case and in addition it is necessary to separately identify each contribution, for example:

It has been reported by two groups that the time for peak aging of the matrix at aging temperatures in the range 460-475K is not affected by the addition of reinforcing particles [Stone & Tsakirooulos (1994), Bloggs & Jones (1997)]. Although a more recent study did observe an apparent influence of the reinforcing particles [Smith (2006)], in the present work we have been unable to reproduce this effect, our data being fully consistent with the original work of Stone & Tsakirooulos. It seems likely that the results reported by Smith were an artefact of the analytical method that they adopted, such artefacts having been observed by others in related studies of a series of Al-Cu-Mg alloys [Jones et al (1999)].

Figures

Figures too are a potential source of plagiarism. If you use somebody else's diagram, graph, photograph or other artwork without acknowledging the original source then you are guilty of plagiarism (and possibly also of breach of copyright). If you use a figure from elsewhere then you should cite the original reference in the figure caption and in the associated body text. Even if you redraw a figure then you should still refer to the original source, e.g. [redrawn from Jones et al, 2006]. If you use a collection of data from other works to create a completely new figure (eg a graph to show a trend arising from a collection of data from several sources) then you must acknowledge the original data sources.

Copyright

If you wish to use artwork (this includes drawings, images, graphs and other figures etc) in a publication that is "communicated to the public" (including your thesis or material placed on an 'ox-only' website) you must seek permission from the copyright holder(s). A hard-copy thesis that is for examination purposes only is exempt from this rule but, since (i) such theses have to be deposited with the Bodleian and the British Library, who make them available to readers, and in particular (ii) you are required to deposit an e-thesis with the Oxford University Research Archive, you will not normally be able to take advantage of this exemption. For articles in journals the copyright holder is usually the publisher, although it is professional courtesy to ask the lead author too. Seeking permission from most publishers is a fairly painless task these days, usually achieved by completing a simple web-form. See for example <http://www.sherpa.ac.uk/romeo/index.html> and http://www.elsevier.com/wps/find/supportfaq-cws_home/permissionusematerial. You will then receive a certificate of permission from the publisher. Keep these permissions in a safe place – you will need to provide copies when you make the mandatory deposit of your e-thesis with the Oxford University Research Archive. Where web-based application for permission to use material in a thesis is not available you should e-mail the publisher, or other copyright holder, directly to seek such permission.

Why is referencing important?

Quite apart from the need to avoid plagiarism because of the danger that this may invalidate a piece of assessed work and/or lead to some other penalty, there are a number of other good reasons for the internationally accepted practise of using references in a factual document:

- (i) It is a simple professional courtesy to a fellow scientist who has laboured long & hard to generate the work that you are referring to.
- (ii) It enables the reader to verify the statements that you are making, to make his/her own judgements on both the conclusions that you report from the referenced work and the judgements that you make on this work, and of course to learn more about the detail of the original work.

- (iii) Your work is strengthened by its reference to respected authorities in a given field; as scientists we all build our work 'on the shoulders of giants'.
- (iv) It enables the reader to identify very clearly what are your own original contributions to the matters discussed. Since these contributions will undoubtedly be erudite and valuable, you will want the world to know that they are yours and to be able to give you credit for them when your work is referenced in the future!

21. UNIVERSITY POLICY ON INTELLECTUAL PROPERTY RIGHTS

The University of Oxford has in place arrangements governing the ownership and exploitation of intellectual property generated by students and researchers in the course of, or incidental to, their studies. These arrangements are set out in the University's Statutes 2000 (page 121 refers) under which the University claims ownership of certain forms of intellectual property which students may create. The main provisions in the Statutes are as follows.

Intellectual property (IP) is the result of creativity and innovation, to which legal rights (intellectual property rights) may be associated, such as patents, copyright, trademarks, design and database rights. Oxford was one of the first UK universities to develop an intellectual property policy to govern the ownership and exploitation of IP generated by students and employees in the course of their employment or studies.

Oxford's IP policy is governed by the University's Statutes and Regulations. For ease of reference, an extract from the Statutes and Regulations is contained below. The Statutes and Regulations, as they relate to the University's IP policy, together with regulations for the administration of the IP policy, may be found in full on the University website (<http://www.admin.ox.ac.uk/rso/integrity/ip.shtml>).

Essential ingredients of the University's approach are a generous revenue-sharing policy, which brings significant personal benefits to researchers (employees or students), and a hugely successful and well-resourced technology transfer operation, Isis Innovation, which has earned national and international recognition. Isis was established specifically to help researchers in the University commercialise their research. Isis files, on average, one new patent a week, and has helped create more than 50 spin-out companies and many more licence deals. Isis works closely with Research Services, a part of the University's central administration. Research Services' remit includes the management of research grants and contracts to the University, and the assignment of University intellectual property to Isis for exploitation.

University intellectual property policy

(Extract from Statute XVI – Part B)

5. (1) The University claims ownership of all intellectual property specified in section 6 of this statute which is devised, made, or created:
 - (a) by persons employed by the University in the course of their employment;
 - (b) by student members in the course of or incidentally to their studies;
 - (c) by other persons engaged in study or research in the University who, as a condition of their being granted access to the University's premises or facilities, have agreed in writing that this Part shall apply to them; and
 - (d) by persons engaged by the University under contracts for services during the course of or incidentally to that engagement.(2) The University's rights under sub-section (1) above in relation to any particular piece of intellectual property may be waived or modified by agreement in writing with the person concerned.
6. The intellectual property of which ownership is claimed under section 5(1) of this statute comprises:
 - (1) works generated by computer hardware or software owned or operated by the University;
 - (2) films, videos, multimedia works, typographical arrangements, field and laboratory notebooks, and other works created with the aid of university facilities;
 - (3) patentable and non-patentable inventions;
 - (4) registered and unregistered designs, plant varieties, and topographies;
 - (5) university-commissioned works not within (1), (2), (3), or (4);
 - (6) databases, computer software, firmware, courseware, and related material not within (1), (2), (3), (4), or (5), but only if they may reasonably be considered to possess commercial potential; and
 - (7) know-how and information associated with the above.
7. Notwithstanding section 6 of this statute, the University will not assert any claim to the ownership of copyright in:
 - (1) artistic works, books, articles, plays, lyrics, scores, or lectures, apart from those specifically commissioned by the University;
 - (2) audio or visual aids to the giving of lectures; or
 - (3) computer-related works other than those specified in section 6 of this statute.
8. For the purpose of sections 6 and 7 of this statute, 'commissioned works' are works which the

University has specifically employed or requested the person concerned to produce, whether in return for special payment or not, but, save as may be separately agreed between the University Press and the person concerned, works commissioned by the University Press in the course of its publishing business shall not be regarded as 'works commissioned by the University'.

9. Council may make regulations:

(1) defining the classes of persons or naming individuals to whom section 5(1)(c) of this statute shall apply;

(2) requiring student members and such other persons as may be specified in regulations to sign any documents necessary in order

to give effect to the claim made by the University in this Part and to waive any rights in respect of the subject-matter of the claim which may be conferred on them by Chapter IV of Part 1 of the Copyright, Designs and Patents Act 1988; and

(3) generally for the purposes of this Part.

10. This Part shall apply to all intellectual property devised, made, or created on or after 1 October 2000 and is subject to the provisions of the Patents Act 1977.

22. COMPLAINTS AND APPEALS

Complaints and academic appeals within the Department of Materials:

1. The University, the Mathematical, Physical and Life Sciences Division and the Materials Department all hope that provision made for students at all stages of their programme of study will make the need for complaints (about that provision) or appeals (against the outcomes of any form of assessment) infrequent.

2. However, all those concerned believe that it is important for students to be clear about how to raise a concern or make a complaint, and how to appeal against the outcome of assessment. The following guidance attempts to provide such information.

3. Nothing in this guidance precludes an informal discussion with the person immediately responsible for the issue that you wish to complain about (and who may not be one of the individuals identified below). This is often the simplest way to achieve a satisfactory resolution.

4. Many sources of advice are available within colleges, within faculties/departments and from bodies like OUSU or the Counselling Service, which have extensive experience in advising students. You may wish to take advice from one of these sources before pursuing your complaint.

5. General areas of concern about provision affecting students as a whole should, of course, continue to be raised through Joint Consultative Committees or via student representation on the department's committees.

Complaints

3.1 If your concern or complaint relates to teaching or other provision made **by the faculty/department**, then you should raise it with the Director of Graduate Studies (Dr Adrian Taylor) as appropriate. Within the department the officer concerned will attempt to resolve your concern/complaint informally.

3.2 If you are dissatisfied with the outcome, then you may take your concern further by making a formal complaint to the University Proctors. A complaint may cover aspects of teaching and learning (e.g. teaching facilities, supervision arrangements, etc.), and non-academic issues (e.g. support services, library services, university accommodation, university clubs and societies, etc.). A complaint to the Proctors should be made only if attempts at informal resolution have been unsuccessful. The procedures adopted by the Proctors for the consideration of complaints and appeals are described in the Proctors and Assessor's Memorandum [<http://www.admin.ox.ac.uk/proctors/info/pam/>] and the relevant Council regulations [<http://www.admin.ox.ac.uk/statutes/regulations/>].

[4. If your concern or complaint relates to teaching or other provision **made by your college**, then you should raise it either with your tutor or with one of the college officers, Senior Tutor, Tutor for Graduates (as appropriate). Your college will also be able to explain how to take your complaint further if you are dissatisfied with the outcome of its consideration.]

Academic appeals

5. An appeal is defined as a formal questioning of a decision on an academic matter made by the responsible academic body.

6. For undergraduate or taught graduate courses, a concern which might lead to an appeal should be raised with your college authorities and the individual responsible for overseeing your work. **It must not be raised directly with examiners or assessors.** If it is not possible to clear up your concern in this way, you may put your concern in writing and submit it to the Proctors via the Senior Tutor of your college. As noted above, the procedures adopted by the Proctors in relation to complaints and appeals are on the web [<http://www.admin.ox.ac.uk/statutes/regulations/>].

7. For the examination of research degrees, or in relation to transfer or confirmation of status, your concern should be raised initially with the Director of Graduate Studies. Where a concern is not

satisfactorily settled by that means, then you, your supervisor, or your college authority may put your appeal directly to the Proctors.

8. Please remember in connection with all the cases in paragraphs 5 - 7 that:
 - (a) The Proctors are not empowered to challenge the academic judgement of examiners or academic bodies.
 - (b) The Proctors can consider whether the procedures for reaching an academic decision were properly followed; i.e. whether there was a significant procedural administrative error; whether there is evidence of bias or inadequate assessment; whether the examiners failed to take into account special factors affecting a candidate's performance.
 - (c) On no account should you contact your examiners or assessors directly.

9. The Proctors will indicate what further action you can take if you are dissatisfied with the outcome of a complaint or appeal considered by them.

G:\roh\EPSC\Notes of Guidance\Research Degrees (Revised version).doc
g/epsc/reviews of notes of guidance/jmgm/updated for 2004-5/240804/241104

23. OUTLINE OF THE DISCIPLINARY PROCEDURE IN THE EVENT OF MISUSE OF ICT FACILITIES BY RESEARCH STUDENTS

(Further details provided during the IT briefing)

Procedure in the event of ICT misuse by research students

1st Offence Referral to the DGS following investigation by the Dept IT Manager. If the offence is confirmed a written warning will be issued by the DGS. This will be placed on file and copied to the Supervisor(s) and the Dean/Senior Tutor for Graduate Students at the offender's college (it will include a reminder of the consequences of a 2nd offence). Also the Department's IT Manager will present to the offender a detailed verbal reminder of the University ICTC Regulations. In addition the Department reserves the right to (i) require surrender to the Department's IT staff of the offending PC (for the removal of prohibited software), (ii) to require the student to pay any administration charge imposed by OUCS in relation to the offence, and (iii) in the case of infringements judged to be more serious to report the matter for action by the Proctors and to withdraw access to ICT facilities pending a Proctorial investigation.

2nd Offence Referral to the Proctors. Pending an investigation, access to ICT facilities may be withdrawn or made subject to such conditions as the Proctors shall think proper in the circumstances. In addition the Department reserves the right to require the student to pay any administration charge

imposed by OUCS in relation to the offence. The Supervisor(s) and the Dean/Senior Tutor for Graduate Students at the offender's college will be informed of the referral to the Proctors.

24. (i) PROVISION FOR MATERIALS RESEARCH STUDENTS

The purpose of this statement is to indicate what a graduate research student might expect to be offered in the **Department of Materials**. It is expected that during a graduate's first term at Oxford, each graduate student and their supervisor will discuss the statement of provision, and the supervisor will confirm to the departmental DGS the individualised provision as it applies to that student. The provision should be reviewed by the supervisor with the student at least once a year.

Further information and guidance about research degrees may be found in the University's 'Notes of Guidance for Research Degrees' at <http://www.admin.ox.ac.uk/epsc/guidance/index.shtml>.

1. What arrangements will be put in place for supervising the graduate's work?

You will have a named supervisor or supervisors, normally as indicated in your offer letter, who will have overall responsibility for the direction of your work on behalf of your department. Typically, you should expect to have meetings with your supervisor or a member of the supervisory team with a frequency of at least once a fortnight averaged across the year. The regularity of these meetings may be subject to variations according to the time of the year, and the stage you are at in your research programme. Please note that this is a minimum and your supervisors may require more frequent meetings.

2. What induction arrangements will be made?

You will have departmental induction at the beginning of your first term. The main induction to the department is provided at the start of Michaelmas Term. Other arrangements will be made for students starting at other times of the year. Your supervisor(s) will arrange more specialised induction subsequently. The main set of slides from the most recent Departmental induction event can be found at <http://www.materials.ox.ac.uk/teaching/pg/pginduction.html>.

3. What workspace will be provided?

Workspace will be related to individual circumstances. If undertaking experimental work, you will be provided with bench space, or its equivalent, in a laboratory and, where possible, with shared office space. If undertaking theoretical research, you will have shared office space.

4. What IT support/ library facilities/ experimental facilities will be available?

You will have access to the Department of Materials IT Support Team, the Departmental Workshop (after completing workshop induction), the Department of Materials Library (in addition to the RSL and other university libraries, and the centrally provided electronic resources). Experimental, photographic and materials modelling facilities are available as appropriate to your research topic. The provision of other resources specific to your project should be agreed with your supervisor as a part of the planning stages of the agreed project. Details of the facilities mentioned above and others are given in the Department's 'Facilities & Procedures' booklet (<http://www.materials.ox.ac.uk/local/FP.html>) and at http://begbrokenano.materials.ox.ac.uk/index.php?option=com_content&task=view&id=31&Itemid=39.

5. Which research seminars will be available?

You will have access to the seminars that individual research groups or groups with common areas of interest organise for their own members and others. You will also have access to the other departmental seminars and colloquia in the Department of Materials, and many of those offered by other Departments too.

6. What access to research funds will be available?

You will find that limited departmental funds are available to assist with attendance at conferences, in addition to any allocated funds via individual research group/supervisors. In the Department of Materials it is the responsibility of individual research groups to provide appropriate desktop or laptop computing facilities. Your supervisor will have a small budget to cover day-to-day consumables used in your project.

7. What formal graduate skills training will be provided?

As appropriate to the different stages of your graduate career, you will have the opportunity to attend a variety of skills training sessions and specific research training offered by the Department, as described in the Department's 'Graduate Course Handbook' and 'Postgraduate Lecture & Training Course Synopses and Research Colloquia Details' booklet

(<http://www.materials.ox.ac.uk/teaching/pg/pghandbooks.html>). The slides from many of the generic skills training workshops are available at <http://www.materials.ox.ac.uk/teaching/pg/pgskills.html> although these cannot fully substitute for engaging in discussion & group exercises at the live workshops. The MPLS Division also organises courses and career planning events, details of which are emailed to students via their departments. Information about transferable skills training is provided in the division's WebLearn site

<http://www.weblearn.ox.ac.uk/site/mathspphys/gradstudents/>. Information about divisional training and other courses offered across the University is also available through the Skills Portal at <http://www.skillsportal.ox.ac.uk>. This site provides information about transferable skills development for research students and research staff at Oxford University, and includes a searchable database of skills training opportunities, links to articles on subjects such as project management, teaching and career planning, and message boards for asking questions and discussing issues with other researchers. An online Personal Development Planning System also is available through the Skills Portal.

8. What opportunities will be available for developing and practising teaching skills (for second and third year graduates)?

The University has established a Centre for Excellence in Teaching and Learning (CETL), which will support the development of research students who wish to follow an academic career, including training in teaching skills. Information about teaching skills training and teaching opportunities provided by the Department of Materials can be found in the three Departmental sources given in (7) above and in the General Scheme of Lectures and the Termly Lecture Lists found at <http://www.materials.ox.ac.uk/teaching/lecturelists.html>. These opportunities are NOT restricted to those who declare a wish to follow an academic career.

9. What arrangements for accommodation, meals and social facilities, will be made, on a year round basis?

Department:

Research students can use the Parks View Cafeteria in the Holder Building. This facility is shared by all staff & students of the Departments of Materials and of Engineering Science and facilitates interaction between different research groups and with support staff. Departmental seminars, colloquia and training workshops bring research students together with academic and other research staff in the department to hear about on-going research and to develop new skills and provide an opportunity for networking and socialising. In addition to many *ad hoc* social events that take place, the Department's graduate student-staff liaison committee (the JCCG) organises a number of social events including free coffee once a week for all graduate students and final year undergraduates, a subsidised evening social event in Michaelmas Term and a subsidised summer barbeque.

College:

Many colleges will be able to provide you with at least one year's accommodation. Generally speaking your college will provide meals throughout the year, but provision will vary from college to college, especially during vacations, and you will need to familiarise yourself with your college's detailed arrangements. In addition there are usually self-catering facilities available in graduate accommodation. You will be a member of the Middle Common Room, or equivalent, of your college, which is the main social centre for graduates. The MCR provides a common room and usually organises a programme of social events throughout the year. The college will also provide a bar, some computing facilities and a library, and may often have dedicated funds for research (conference and field grants). It also represents the interests of its members to the college through an elected Committee or through elected representatives to College Committees. Again, details will vary from college to college. Graduates are also welcome to participate in all other social and sporting activities of the college. Please see individual college websites for further details about all aspects of college provision.

Central:

Graduate Research Students may become members of the University Club in Mansfield Road, and participate in the range of sporting activities provided by the University.

10. What arrangements are in place for pastoral and welfare support?**Department:**

Within the Department, your supervisor, Director of Graduate Studies, Graduate Studies Secretary, Departmental Administrator and their teams are all available to offer support. The Joint Consultative Committee for Graduates (JCCG) provides a channel through which graduate students' views and concerns can be brought to the attention of the Department of Materials Academic Committee.

College:

There is an extensive framework of support for graduates within each college. Your college will allocate to you a College Advisor from among its Senior Members, usually in a cognate subject, who will arrange to see you from time to time and whom you may contact for additional advice and support on academic and other matters. In college you may also approach the Tutor for Graduates and/or the Senior Tutor for advice. The Tutor for Graduates is a fellow of the college with particular responsibility for the interests and welfare of graduate students. In some colleges, the Senior Tutor will also have the role of Tutor for Graduates. Each college will also have other named individuals who can offer individual advice. The University also has a professionally staffed confidential Student Counselling Service which offers assistance with personal, emotional, social and academic problems.

Central:

The University provides a Student Counselling Service (<http://www.admin.ox.ac.uk/shw/counserv.shtml>) and Careers Service (<http://www.careers.ox.ac.uk/>).

24 (ii) MPLSD CODE OF PRACTICE ON THE SUPERVISION OF RESEARCH STUDENTS**A. The wider context**

This divisional code seeks to supplement in certain important areas the codes of practice already in place in the University, particularly the EPSC *Notes of Guidance for Research Degrees* <http://www.admin.ox.ac.uk/epsc/guidance/index.shtml>, and the *Memorandum of Guidance for Supervisors and Research Students (Examination Regulations, 2007, pp.878-82)*. Attention is also drawn to the Quality Assurance Agency's Precepts on Postgraduate Research Programmes <http://www.qaa.ac.uk/academicinfrastructure/codeOfPractice/section1/default.asp#precepts>, which underlies these Codes of Practice.

The attached summary note "Research Supervision: A Brief Guide" provides a brief guide to the roles and responsibilities of supervisors and graduate research students. Departments are asked to ensure that a copy of the divisional code and the brief guide is given to every supervisor and every graduate research student in the department.

B. Appointment of supervisors for Graduate Research Students*The supervisory structure and sources of support*

Patterns of supervision differ in the MPLS Division according to the nature of the subject. In some subjects there is typically a sole supervisor; others may typically have two or more supervisors, with one designated as the primary supervisor; and others may have supervisory teams.

Where more than one supervisor is appointed, one of the supervisors shall clearly be designated the primary supervisor.

In all cases, the department shall ensure that each graduate student has access to one or more named persons in addition to the supervisor to whom he/she can turn for support, such as the head of the research group, the Director of Graduate Studies, or where appropriate the Head of Department. Where there is a sole supervisor, these other sources of support, and the arrangements for providing cover during the absence of the supervisor referred to at 4 below, are especially crucial.

In all cases students should also expect to be able to approach a college advisor. The student's college will appoint a college advisor, receive termly supervision reports, and transfer and confirmation of status reports. The Division asks colleges not to appoint a student's departmental supervisor as a college advisor. The college may also have procedures in place to monitor the overall well-being of the graduate research student, including a discussion of academic reports. If the college identifies any concerns which might impact on the academic progress of the student concerned, and which may not already have been recognised in departmental reports, it may refer these in confidence to the Director of Graduate Studies in the department concerned, who will initiate such action in the department as seems to him/her to be necessary in the individual circumstances.

The person(s) appointed to supervise

The supervisor shall normally be:

1. *Someone of sufficient standing to be able to operate with credibility on behalf of the responsible body*

The main supervisor shall normally be a member of academic staff of the University, or a college fellow.

Where specialist supervision is needed that is not available from a member of academic staff or college fellow, a senior member of research staff (Grade 8 or above) may be appointed as a subject specialist supervisor, OR, in appropriate cases, a supervisor may be appointed who is external to the University of Oxford. A person in the department holding a substantial external fellowship, e.g. a Royal Society Fellowship or equivalent on a fixed-term contract also may be appointed to act as a student's main supervisor. In these circumstances, an experienced member of academic staff shall always be appointed as joint supervisor. This must be a member of staff responsible to the Head of Department or Head of the Division.

2. *Someone who has sufficient experience to be able to provide appropriate guidance to the student about the necessary procedures and, in particular, the academic expectations associated with an Oxford doctorate in their subject area.*

At least one supervisor will currently be engaged in research in the relevant discipline(s) so as to ensure that the direction and monitoring of the student's progress is informed by up to date subject knowledge and research developments.

Appropriate support and training will be given to new supervisors.

For supervisors undertaking their first graduate student supervision, an experienced co-supervisor will be appointed to support the student and the supervisor.

For members of academic staff in their first period of office, the Divisional Board will appoint a mentor who will, amongst his/her other duties, provide confidential advice, support, and guidance on teaching, and supervision of research students. The supervision record of a new member of academic staff is included in the review prior to appointment to retiring age.

Departments shall encourage all new supervisors to attend the Learning Institute's Seminar on Graduate Supervision (http://www.learning.ox.ac.uk/seminar_desc.php?cc=ap/pgs).

(These seminars can be arranged on a departmental or divisional basis for groups of six or more).

When a supervisor is not a member of academic staff at the University, or a fellow of an Oxford college, or a person with previous supervisory experience, an experienced member of academic staff will be appointed by the department either as joint supervisor or as an advisor to the supervisor, and will be expected to act as mentor to the new supervisor.

When the supervisor is a member of contract research staff, s/he will be expected to attend the Learning Institute seminar.

For the avoidance of doubt, a candidate should not be admitted if there is no suitable specialist supervision available in the University or its colleges.

3. *Someone who is able to undertake the tasks assigned to the supervisor in the memorandum and notes of guidance including integrating them into the national and international network in their subject.*

In terms of academic standing and experience, this is dealt with above.

Departments should put in place mechanisms to ensure that the quality of supervision is not put at risk as a result of the excessive volume and range of burdens assigned to individual supervisors. Although for an individual supervisor with a normal academic load, a supervisory load equivalent to six full-time students would be regarded as the normal maximum, it is recognised that there is a range of supervisory practice, in terms of supervisory teams, and the Division emphasizes the importance of adhering to the Quality Assurance Agency's precepts on supervisory practice. These are that:

- "11 Institutions will appoint supervisors who have the appropriate skills and subject knowledge to support, encourage and monitor research students effectively.
- 12 Each research student will have a minimum of one main supervisor. He or she will normally be part of a supervisory team. There must always be one clearly identified point of contact for the student.

- 13 Institutions will ensure that the responsibilities of all research student supervisors are clearly communicated to supervisors and students through written guidance.
- 14 Institutions will ensure that the quality of supervision is not put at risk as a result of an excessive volume and range of responsibilities assigned to individual supervisors.”

(An individual supervisor’s responsibilities for graduate supervision should be assessed in the context of the divisional template of provision for postgraduate research students. There, the Division has stated of a research student ‘Typically, you should expect to have meetings with your supervisor or a member of the supervisory team with a frequency of at least once every two weeks averaged across the year. The regularity of these meetings may be subject to variations according to the time of the year, and the stage you are at in your research programme.’ It follows that, alongside his/her other duties, a supervisor should be able to provide this typical level of support for each of his/her research students.)

Departments should ensure that students are not disadvantaged by the appointment as a supervisor of someone who is about to go on leave, and shall make appropriate arrangements to cover for a supervisor’s absence on leave or for other reasons.

4. *Someone who has sufficient security of tenure to make it likely that they will see the student’s research through to successful conclusion.*

Nobody should be appointed as sole supervisor if it is known at the time of the appointment that he or she will not be in post at the time the student is due to complete the programme in question.

C. How skills training needs are to be assessed.

Skills training needs are an important part of a postgraduate research student’s programme. These include skills that are specific to the research being undertaken, and personal and professional skills training, as outlined in the Joint Statement of the Research Councils on Skills Training for Research Students <http://www.grad.ac.uk/downloads/documents/general/Joint%20Skills%20Statement.pdf>.

The student’s skills training needs are assessed at three specific points in his/her programme: in the initial general review of the student’s needs with their supervisor, at Transfer of Status, and at Confirmation of Status. It is, however, an integral part of the supervisor’s role, at the regular supervisory meetings, to continue to monitor and advise the student on his/her skills training needs, and to draw to the attention of the research student, and encourage the student to take up, such opportunities that are available for the further development of these skills. A full review of your skills training needs should be carried out each year with your supervisor.

In addition, an online Personal Development Planning system is available through the University's Skills Portal (see below). Students should be encouraged to use this to evaluate their own skills training needs, and are encouraged to discuss these regularly with their supervisors.

A review of research and transferable skills training needs should form part of at least one meeting per term between the supervisor and the student. In a student's third and subsequent years the supervisor should also discuss career paths with the student. The student should keep a written record of the discussions.

Extensive information about transferable skills training can be found in the Division's skills training webpages at:

<http://www.mpls.ox.ac.uk/skillstraining/index.html>

Information about divisional training and other courses offered across the University is also available through the Skills Portal at

<http://www.skillsportal.ox.ac.uk>.

Research Supervision: A Brief Guide

The primary purpose of a research degree programme in the Mathematical, Physical and Life Sciences Division is to enhance and develop your knowledge in a specific area of research, and to equip you with the research and transferable skills needed to become an independent researcher, or to prepare you to be able to adapt the skills you have learnt to pursue a career in other fields. Our aim is to provide you with an excellent educational experience, which should also be fun and enjoyable, as well as hard work. To achieve this result, both supervisors and students need to be clear about their respective roles and responsibilities. This note provides a brief guide to these roles. If you have any concerns about the roles described below, do discuss these with your supervisor or the Director of Graduate Studies in your department.

The role of the Supervisor (and in some cases the supervisory team) is to:

- Establish a timetable of regular meetings for detailed discussion of your progress (these meetings should take place at least once every two weeks averaged across the year)
- Agree a research plan and programme of work, and to establish clear academic expectations and milestones
- Agree with you a timetable for the submission of any written work and to return your work within a reasonable time

- Advise you of your department's health and safety regulations. Supervisors are responsible for all aspects of safety under their control, and in particular for the safe conduct of all experiments carried out in the course of their student's research
- Assess formally your subject-specific and personal and professional skills training needs on a regular basis and ensure you are aware of the opportunities available to meet these needs. A full review of your skills training needs should be carried out each year with your supervisor
- Co-operate with you to produce a detailed joint report on your progress at the end of each term
- Ensure you are aware of the formal requirements in relation to transfer and confirmation of status and final submission, and help you to incorporate these into your plan of work

The role of the Student is to:

- Meet with your supervisor regularly and give due weight to any guidance or corrective action proposed, keeping a written record of your discussions where appropriate
- Draw up a research plan and timetable of work in consultation with your supervisor, and to keep relevant records of all aspects of your work
- Co-operate with your supervisor to make a detailed joint report on your progress at the end of each term
- Take ultimate responsibility for your research programme, including the development of subject-specific, research, personal and professional skills
- Carry out research with proper regard to good health and safety practices
- Be aware of the University's guidance on plagiarism and of any ethical or legal issues, health and safety requirements, or intellectual property issues arising from your research
- Pursue opportunities to engage with the wider academic community at University, national and international level

The Division's more detailed Code of Practice on the Supervision of Graduate Research Students is available at

<http://www.mpls.ox.ac.uk/intranet/teachingandlearning/graduateprog.html>.

Contacts

If you have any queries about the Division's code of practice on supervision please contact Mary Childs, Divisional Graduate Officer, email mary.childs@mpls.ox.ac.uk.

If you have any queries about the implementation of the code of supervision in your department please contact: the Director of Graduate Studies in your department, or the departmental Graduate Office.

25. APPENDICES

On the following pages you will find copies of forms that you will need to complete over the course of your research project and also the Department's statement of minimum provision for its research students:

- (i) Graduate student questionnaire
- (ii) Project management form 1
- (iii) Project management form 2
- (iv) Project management form 3
- (v) Project management form 4
- (vi) Risk assessment form
- (vii) DSE self-assessment form
- (viii) Application form for conference/travel funds

You can also find copies of the various forms on the Departmental web pages at <http://www.materials.ox.ac.uk/>.

UNIVERSITY OF OXFORD
 Department of Materials
 Post-graduate Student Questionnaire

Last Name: (Surname or family name)	First Name:	Middle Names:
Address Post Code:		Telephone:
College:		
Your UID number:	University email address:	Other email address:
Name of person to contact in an emergency: What is the relationship of this person to you?	Address: Telephone Number:	
Your date of birth:	Your place of birth:	
Nationality:	Gender:	
Any disabilities, including dyslexia:	Have these been registered:	
First Degree Degree Title: Class Awarded: Subject: University: Country: Year Completed:	Higher Post Degree Qualifications? Qualification: Subject: University: Country: Year Completed:	

Continued over....

RESEARCH PROGRAMME DETAILS

DPHil: <input type="checkbox"/>	MSc: <input type="checkbox"/>	EngD: <input type="checkbox"/>
Project Title:		
Project Supervisor(s):		
Lead Supervisor:	Oxford Co-Supervisor(s) (if applicable):	
Deputy Supervisor (Safety):		
External Co-Supervisor (if applicable):	Departmental Advisor:	
Full Address:		
E-mail:	College Advisor (should not be one of the supervisors):	
	Address:	
Total Period expected to be spent at external premises (months per year):		
Professional Body Membership:		
IoM3: <input type="checkbox"/>	IoP: <input type="checkbox"/>	RSC: <input type="checkbox"/> Other: <input type="checkbox"/>
How did you hear about DPhil programme?		
Signed:	Dated:	
PLEASE RETURN TO MARION BECKETT, DEPARTMENT OF MATERIALS GRADUATE STUDIES SECRETARY BY THE END OF WEEK 1 (17 OCTOBER 2008)		

Project Management Form 1

Graduate Studies Project Description Form

After discussion with your supervisor YOU should complete this form and associated Work Breakdown Structure and Gantt Chart. Send a copy to the Graduate Studies Secretary by Friday of 5th week of Michaelmas Term.

Name:

College:

Address for correspondence:

Contact telephone number:

Title of project:

Supervisor:

In general terms describe the overall scientific objectives of your project. (Do not put in much detail at this stage.)

For the **next 6 months** of your project:

What are your major goals?

What training will you need (eg. specific experimental equipment, software etc.) and how are you going to obtain that training?

What resources will you need (equipment, materials, technician support etc.) and are they available?

Your signature:

Your supervisor's signature:

Date:

Date:

Now complete a Work Breakdown Structure and Gantt Chart for your project.

Project Management Form 2

First Year Report Form - Graduate Studies

After discussion with your supervisor complete this form and associated Gantt Chart. Include a copy as an appendix to your First Year Report.

Name:

College:

Title of project:

Supervisor:

Refer back to your Project Description Form. What were your goals for the **previous 6 months** and to what extent have you achieved them?

For the **next 6 months** of your project:

What are your major goals?

What training will you need (eg. specific experimental equipment, software etc.) and how are you going to obtain that training?

What resources will you need (equipment, materials, technician support etc.) and are they available?

Describe the objectives for the remainder of your project. Include brief details of the science involved and any experiments and/or models that you may need to develop. Then complete a revised Gantt Chart covering the period from the start of your project up to thesis submission. Show all necessary tasks with their approximate dates. Indicate those tasks and milestones already completed.

Your signature:

Your supervisor's signature:

Date:

Date:

Project Management Form 3A, 3B, 3C, 3D

(please circle correct number)

Graduate Studies Project Analysis Form

After discussion with your supervisor complete this form and associated Gantt Chart. Send a copy to the Graduate Studies Secretary by Friday of 5th week Michaelmas/Trinity Term.

Name:

College:

Title of project:

Supervisor:

Describe the progress you have made in the last six months. To what extent have you achieved your goals?

For the **next 6 months** of your project:

What are your major goals?

What resources will you need (equipment, materials, technician support etc.) and are they available?

Are you satisfied with the progress of your work? If not can you identify how you may improve matters?

Describe the objectives for the remainder of your project. Include brief details of the science involved and any experiments and/or models that you may need to develop. Then complete a revised Gantt Chart covering the period from the start of your project up to thesis submission. Show all necessary tasks with their approximate dates. Indicate those tasks and milestones already completed.

Your signature:

Your supervisor's signature:

Date:

Date:

Project Management Form 4

Graduate Studies Project Analysis Form

After discussion with your supervisor complete this form and associated Gantt Chart. Send a copy to the Graduate Studies Secretary by Friday of 2nd week of your final Trinity Term (2 or 3 year projects) or Friday of 0th week of your final Michaelmas Term (3.5 year projects).

Name:

College:

Title of project:

Supervisor:

Describe the progress you have made in the last six months. To what extent have you achieved your goals?

When do you expect to submit your thesis?

For the **final 5 months** of your funded period (**4 months** for MSc):

1. Outline any remaining experiments/modelling runs that are essential to the completion of your thesis.

Are the resources for the above all available?

2. Give an outline structure for your thesis in the form of a provisional table of contents page.

Are you satisfied with the progress of your work? If not can you identify how you may improve matters?

Finally, complete a revised Gantt Chart covering the period from the start of your project up to thesis submission. Show all necessary tasks with their approximate dates. Indicate those tasks and milestones already completed.

Your signature:

Your supervisor's signature:

Date:

Date:

This form must be completed by all new arrivals (employees, visitors, graduate students etc) in consultation with their supervisor, and **returned within 2 weeks**. The objective is to ensure proper assessment, guidance and training is provided for work undertaken. Forms should be reviewed annually but a new one may be submitted at any time to reflect changes in work type or risk category.

Please read the footnotes¹ for guidance on the risk categories involved. If you need further risk assessments / training you **MUST** contact the person(s) specified in the Departmental Statement of Safety Organisation as referred to in the table below. This must be done **within 2 weeks of completing the form**.

Please return form to Dr Mike Jenkins, DSO – Holder Building, room 30.10.

Will Your Work Involve:	Yes / No	If “Yes”, Give Details and refer to the relevant Appendix in the Statement of Safety Organisation	Risk Category	Relevant Appendix in S. of S.O.
Radioactive Isotopes				A & J
X-Ray Machines				A & J
Lasers				A & J
Biological hazards				C
Hazardous Chemicals, Dust or Gas				C
Workshop Machinery				C & H
Display Screen Equipment (more than 1hr continuous/day)				L
Manual Handling / Lifting heavy loads				I

¹ Risk Categories

- A. Where work may not be undertaken without senior supervision;
- B. Where work may not be started without advice from the Academic Supervisor. Advice should include the method of work and the safeguards to be used;
- C. Where the risks are such that extra care must be observed, but where it is considered that the worker is adequately trained and competent in the procedures.

Will Your Work Involve:	Yes / No	If "Yes", Give Details and refer to the relevant Appendix in the Statement of Safety Organisation	Risk Category	Relevant Appendix in S. of S.O.
Live Electrical Working				A & G
Liquid Gases				C
Use of Gas Cylinders				C
Work out of the Department				
Other significant risk (specify)		If yes, you MUST contact Dr Mike Jenkins for further advice.		

Declaration of Worker: Where **NO** has been given as an answer, it is in the belief that the work I shall be doing will expose me to no significant hazards, the consequence of which could be avoided by taking the preventative or protective measures that have been offered to me. I make this declaration, having read the Departmental Statement of Safety Organisation, and I recognise that, in the case of uncertainty, my supervisor or the Departmental Safety Officer is available to offer advice. If **YES** has been given as an answer, I recognize that is my responsibility, where appropriate to contact the person listed in the Statement of Safety Organisation or the Departmental Safety Officer, in cases of uncertainty, in order to organize the required risk assessments and training. This must be done **within two weeks of completing the form.**

Name (print)Room

Status (e.g. visitor/post grad student/member of staff)

Signed Date

Declaration of Academic Supervisor: Having specialist knowledge in the field of work to be carried out by the applicant, I believe that he/she has properly declared the circumstances under which his/her work will be undertaken. I furthermore have indicated the category risk involved, and have named the person(s) who will immediately supervise work of Risk Category A. I will ensure the applicant completes all further risk assessments and/or training before the work commences.

Name (print) Date

Signed

Departmental Administrative record

DSO Approval: Signed Date

Date form received for central filing:

Display Screen Equipment Self Assessment

Please answer the questions in column headed 'Risk Factor' by putting tick answers where indicated. Please add comments, or required actions, in the final column. Please return the completed form to the Area Safety Officer (Linda Curson – email aso@earth.ox.ac.uk or by internal post to the Department of Earth Sciences) who will take any necessary actions.

User: <input style="width: 90%;" type="text"/>	Location: <input style="width: 90%;" type="text"/>	Date: March 05
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Risk Factors	Tick		Help	Required Action / Comment
	Yes	No		
Display Screen				
Are the characters clear and readable?			The screen should be clean – cleaning materials are available from the Stores. Use contrasting colours for text and background colours.	
Is the text size comfortable to read?			Software setting may be adjusted to change text size.	
Is the image stable (no flicker)?			Try using different colours to reduce flicker e.g. darker background and lighter text.	
Is the screen suitable?			Intensive graphic work may require larger display screen.	
Can you adjust brightness and contrast?				
Does the screen swivel and tilt?			Swivel and tilt need not be built in, but please indicate if you cannot get the screen to a comfortable position.	
Is the screen free from glare and reflections?			You may need to move the screen, or the desk, to shield the screen from the light. Dark characters on a light background are less prone to glare & reflection.	
Are adjustable blinds/curtains provided and in good condition?			Check that blinds work – and that they cut out unwanted light.	

Keyboard				
Is the keyboard separate from the screen?			This is required unless there is a need to use a portable.	
Does the keyboard tilt?			Tilt need not be built in.	
Is it possible to find a comfortable keying position?			The keyboard should be approximately 5cm from the front of the desk	

Risk Factors	Tick		Help	Required Action / Comment
	Yes	No		
Mouse, trackball, etc				
Is the device suitable for the tasks you use it for?			The mouse and trackballs are general-purpose devices suitable for many tasks and are available in a variety of shapes and sizes. If in doubt – ask the ASO for further advice.	
Is the device positioned close to you?			Most devices are best placed right by the side of the keyboard. <ul style="list-style-type: none"> • Do not overstretch arm to reach device • Do not leave hand on the device when it is not in use • Try to keep a relaxed arm and straight wrist. 	
Do you have support for your wrist and forearm?			Support may be gained from the desk or chair arm - or a separate supporting device. You should be able to find a comfortable working position with the device.	
Does the device work smoothly and at a suitable speed?			The device may need cleaning or a mouse mat may be required.	

Software				
Is the software suitable for your requirements?			Training is available for many software packages – please indicate if required. Software should be user-friendly. It should respond quickly and clearly, with adequate feedback, such as clear help messages.	

Furniture/Ergonomics				
Is the desk large enough for all equipment, papers, etc?			Create more room by moving printers, reference materials etc elsewhere. If necessary, it may be possible to provide new power and telecom sockets.	
Can you reach all the papers and equipment you need?			Ensure frequently used items are within easy reach. A document holder may be required to minimise head and eye movements.	
Are surfaces free from glare and reflection?			Consider mats or blotters if there is a problem.	
Is the small of your back supported by the chair's backrest?			You should have a straight back, supported by the chair, with relaxed shoulders.	
Are feet flat on the floor?			If not, a footrest may be needed.	

Risk Factors	Tick		Help	Required Action / Comment
	Yes	No		
Is the chair suitable? Does it have: <ul style="list-style-type: none"> • Back height and tilt adjustment • Seat height adjustment • Swivel mechanism • Castors or glides. 			The chair may need repairing or replacing if the user is uncomfortable, or cannot use the adjustment mechanisms.	
Is the chair adjusted correctly?			See the diagram on page 5 that illustrates how to use your chair.	
Are forearms horizontal and eyes at roughly the same height as the top of the VDU?			Adjust the chair height to get your arms in the correct position – THEN adjust the VDU height, if necessary.	
Do you have a good keyboard technique?			Elbows should be at a right angle with shoulders relaxed. The forearm, wrist and hands should be straight and level. Wrists must not rest on table – see diagram on page 5.	

Environment				
Is there enough room to change position and vary movement?			Space is needed to move, stretch and fidget. Cables should be tidy and not a trip hazard.	
Is the lighting suitable, e.g. not too bright or too dim to work comfortably?			You should be able to adjust light levels, e.g. by adjusting blinds or light switches, or by the use of a desk lamp.	
Does the air feel comfortable?			Circulate fresh air if possible. Plants may help.	
Are levels of heat and noise comfortable?			Neither too high nor too low?	

Final Questions				
Have you experienced any discomfort or other symptoms that you attribute to working a VDU?			Please state any problems currently experienced.	
Do you take regular breaks working away from VDUs?			It is recommended that you take a short break (one minute) every half an hour.	
How much time do you spend using the VDU on a typical day			Please answer in hours – you may give a range.	

DSE work outside the department

It is recommended that you follow the advice and guidance given within this assessment for any computer work undertaken outside of the department. When working in a non-departmental location please take particular care with:

1. Arranging your equipment and workstation in accordance with the diagram given on page 5 of this assessment.
2. Arrange a timely repair if your computer screen flickers or your equipment, including the flexes and plugs, become physically damaged.
3. Reporting, without delay, to your supervisor/manager any personal discomfort, e.g. tingling sensations or pain in your hands or forearms or necks, thought to be associated with your use of the workstation.

Any other User comments:

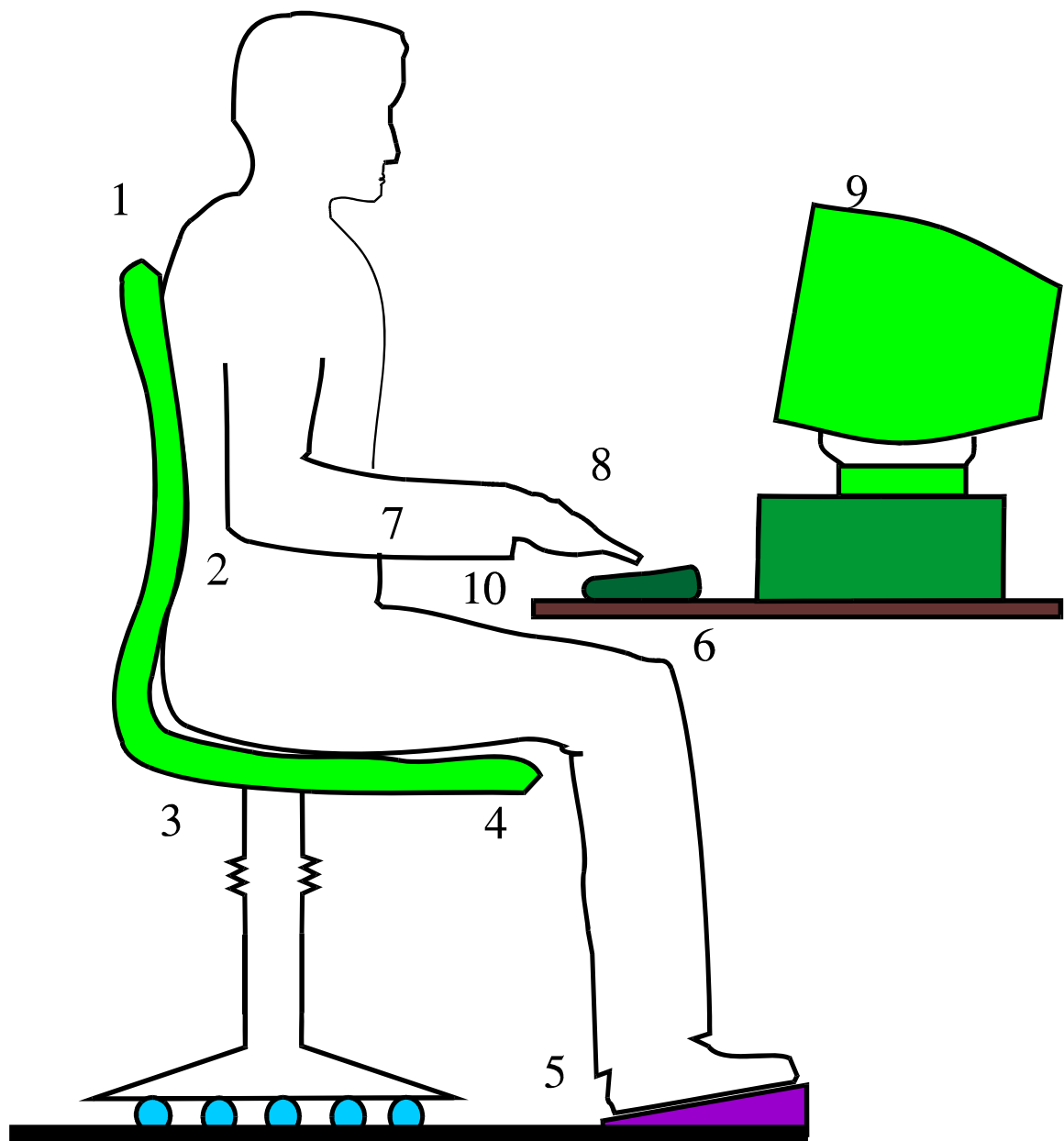
To be completed by Assessment Coordinator

Assessment checked by:
Follow-up action completed on:

Further action needed?	YES/NO
Review date:	

Assessment Coordinator comments:

Department of Materials



- 1 Seat back adjustability
- 2 Good lumbar support
- 3 Seat height adjustability
- 4 No excess pressure on underside of thighs and backs of knees
- 5 Foot support if needed
- 6 Space for postural change, no obstacles under desk
- 7 Forearms approximately horizontal
- 8 Minimal extension, flexion or deviation of wrists
- 9 Screen height and angle should allow comfortable head position
- 10 Space in front of keyboard to support hands/wrists during pauses in keying

DEPARTMENT OF MATERIALS
Application for Conference/Travel/Skills Training Funds

The Department has a policy of seeking to support each graduate student to attend a conference approved by their supervisor, during the course of their studies. Students are expected to seek support from other sources as well as approaching the Department. Please use this form when applying for funds, indicating in section 4 other sources you have approached. When you have completed sections 1-5, ask your supervisor to complete section 6 and sign it. The completed form should be sent to the Departmental Graduate Studies Secretary (Marion Simons).

1. Your details: Name: Research Group: College: Sponsor *: Year started: * if applicable	2. Conference/Other Details: Title: Date: Location:
3. Cost: Registration: Travel: Subsistence: Other: Total: Any special feature:	4. Sources approached: (please tick) Please indicate in each case the sum requested and granted Sponsor: College: University: Other: Total:
5. Request to Department Sum requested this time: _____ Sums previously granted: _____ (give date)	
6. Statement of support by supervisor 	
<u>Admin use only</u> Amount granted _____ Notes/special conditions _____ Signed _____ Date _____	



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