Faculty of Engineering

UNIVERSITY OF LEEDS

STUDENT HANDBOOK

INFORMATION FOR RESEARCH STUDENTS

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Section 1 - Introduction

Welcome to the Engineering Graduate School

On behalf of the Director of the Graduate School, Dr Andy Mullis, and the staff of the Graduate School Office, School of Computing Student Office and the whole Faculty, we would like to welcome you as you begin your studies as a research student.

The Graduate School Office (GSO) manages the support to students in the Faculty of Engineering with the exception of the School of Computing (SoC), which is supported by their School's Student Office. You join us at a time when the University and the Faculty are investing in a raft of new developments intended to benefit research students amongst others.

The University has appointed Prof Paul Harrison (previously Head of our School of Electronic and Electrical Engineering) in a new role of Dean of Postgraduate Research Studies. You can see Paul's welcome message to students on our central Research Student Administration website. The University is also reviewing its support to all students in a major campus-wide exercise, which will start to deliver over 2012.

A new online Postgraduate Development Record system was rolled out in September 2011, drawing together shared online meeting records for research students and supervisors, records of training attended and any modules taken, and a space for personal development. PDR will build to a personal record for each research student and will also mean less paper and more electronic processes.

In the Faculty of Engineering, it is planned that administrative support to research students in the School of Computing will transfer to the Graduate School Office over the course of 2011/12 academic year. Major building refurbishment will improve the quality of office and other space within the building. Our research continues to grow, and you can read a little more about this on the following pages.

About the Faculty of Engineering – Building a World Class Profile

As you start your studies, we would like to take the opportunity to tell you a little about the Faculty of Engineering at Leeds. The Faculty is one of the largest at the University of Leeds, and one of the largest engineering groupings in the UK; over 700 staff, 3,000 students and an annual turnover of around £50m.

Our vision is that by 2015, the Faculty of Engineering will be recognised as being in the top 5 in the UK and the top 50 in the world, contributing to enhancing industrial competitiveness and the quality of life through the integration of world-class research and education. Critical to our vision is the need to recruit and retain high quality staff and students. We are committed to staff development and to recognising and rewarding excellence and commitment.

Within the Faculty of Engineering our approach is to:

- encourage, reward and promote excellence to achieve and sustain international standing in higher education teaching, learning and research
- invest in staff, attracting, developing, rewarding and retaining high quality staff
- invest in facilities and to create impressive space
- establish and grow our centres of research excellence from which we grow and develop learning, teaching and world-class research
- expansion of Enterprise and Knowledge Transfer activities to wider communities

The Faculty is ranked 7th[1] in the UK for the quality of its research (2008 Research Assessment Exercise); an impressive 75% of the Faculty's research activity rated as internationally excellent or World leading. As a member of the '*Russell Group*' of leading UK research-intensive universities we are committed to maintaining the highest standards of research, education and knowledge transfer. So our research is vitally important to us. Not only does it allow us to attract the best staff, it also enables us to invest in excellent facilities, and with our research feeding directly into our teaching it ensures that our courses are at the forefront of thinking in their respective fields. Much of our research is linked to industry, with major collaborators throughout the UK and Europe.

The range and scope of our activity is extensive covering all the major Engineering disciplines, plus Energy, Materials Science and Computing; with theoretical, experimental and modelling work underpinning all areas. The breadth of our portfolio provides an ideal platform for multidisciplinary research, which is a rapidly growing aspect of our activity. International collaborations are high on our agenda. In addition to our participation in the Worldwide Universities Network (WUN), we are partners in more than 20 internationally funded collaborations and host to more than 30 long-term international Visiting Professors each year.

The Faculty benefits from excellent facilities across the majority of activities, from a state-of-the-art electron microscopy suite to a world-leading TeraHertz technology laboratory. Investments of more than £15m in research infrastructure are planned over the next five years to ensure our facilities remain world-class.

Two thirds of our 3,000 students are undergraduates with the remaining third split evenly between taught masters and research degrees. The Faculty attracts staff and students from all around the world; one third of students are from outside the UK and representing over 90 different nationalities. Our focus is on providing research-led teaching and supervision, inspiring our students and through this helping them to achieve their goals and ambitions.

There is a friendly atmosphere and student-focused approach to undergraduate and postgraduate education. We pride ourselves on the professionalism of our staff and the quality of the research environment, promoting excellence by offering a range of cutting edge programmes, many in conjunction with industrial sponsors and collaborators.

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[1] *The Faculty of Engineering ranking of 7th in the UK is based on taking the weighted average of GPAs for the engineering related units of assessment (units 23 to 29 inclusive) for all universities with engineering submissions.*

Teaching and Research in the Faculty of Engineering

Teaching and research covers the full spectrum of engineering and computing and is organised in five schools:

- Civil Engineering
- Computing
- Electronic and Electrical Engineering
- Mechanical Engineering
- Process, Environmental and Materials Engineering

From 2010, the Faculty has also gathered its research activity under key research themes, which cross the boundaries of traditional disciplines, and build on key enabling technologies. These themes are:

- **Energy and Environment**
- **Global Infrastructure**
- **Health and Human Interaction**

You can click the links below to find more information, which is update regularly on our website.

Energy and Environment

The energy we use and the impact we have on our environment are two of the biggest issues of our age. At Leeds we work to find engineering solutions to these global problems for today, and develop the technology that will help improve and protect our world for tomorrow. Our specific areas of expertise relate to:

- Low carbon energy solutions
- Managing our natural resources
- Environmental mitigation

Global Infrastructure

The world we have created is becoming more complex which brings new challenges: how we travel, how we communicate, the buildings we inhabit, the industries we work in and all the things in between. At Leeds we focus on tackling such demands, while looking ahead to develop better infrastructures for the future. Our specific areas of expertise relate to:

- Digital economy
- Networks and communications
- Built environment

Health and Human Interaction

Demands for an improved quality of life are ever increasing. At Leeds we are working to find solutions at both an individual and community level, ranging from longer lasting replacement joints to improved sanitation in developing countries. At the same time we are looking at how technology can work better with us and for us. Our specific areas of expertise relate to:

- Medical technology
- Public health
- Interactive engineering

Enabling and Underpinning Technologies

There are a broad range of enabling and underpinning technologies that support many of the research themes. Our specific areas of expertise are in:

- Bio-inspired engineering and computing
- Computational science and engineering
- Design sciences
- Materials science
- Nanotechnology
- Tribology and surface engineering

Section 2 - Starting your Research Degree

Calendar of Lifecycle Events

The formal requirements for your studies are sketched out below. You can find further details in the *Protocol*, and copies of the relevant forms on the Graduate School Office website at http://www.engineering.leeds.ac.uk/go/lifecycle/

Year 1

Registration and initial meetings

Registration

Registration is the process by which you become a member of the University of Leeds. All students must register within three weeks of their formal start date and **must re-register each year** on the anniversary of their original start date. You should visit the Faculty's Graduate School Office/ School of Computing Office for information on how to complete the online registration process.

You will need to register online via the Student Portal http://portal.leeds.ac.uk and you may need to see the Accounts Receivable Team to make arrangements for your fees to be paid. You will need to visit Research Student Administration (RSA) to obtain your Student Card. If you hold a conditional offer, you will also need to show original or certified copies of any certificates which show that you meet your conditions of acceptance. Both these offices are based in the Student Services Centre in the Marjorie and Arnold Ziff Building. Detailed instructions will be provided to you when you visit the GSO.

Candidates for the degree of Doctor of Philosophy (PhD) will initially be registered under the category of 'Provisional PhD'. Transfer to the full registration category of PhD is subject to the Transfer process at the end of 12 months (full-time students) or 24 months (part-time students). Details of this process are given in the Faculty Protocol and in the University's Research Student Handbook.

Fees and Funding

The online registration process includes information about how to pay your fees. If you have difficulty in paying any of your University bills you should discuss this with the Accounts Receivable Team straight away. If you have been awarded a scholarship by the School, you will not receive any maintenance grant until you have registered and will not receive any repeat funding in future years unless you have re-registered.

First meeting with your Supervisor

The Graduate School Office/ School of Computing Student Office will arrange for you to meet your main supervisor shortly after your arrival in Leeds. One of the aims of the meeting is to begin the process of training needs analysis, which will lead to the completion of a draft training plan, which must be submitted to the Graduate School Office/ School of Computing Student Office within one month of your registration.

Arrangements for subsequent meetings are the responsibility of the student and supervisor. The University currently requires formal supervision meetings to take place at least ten times a year. You will need to record your meetings on the University's Postgraduate Development Record system. Your notes will be reviewed and commented by your supervisor.

Induction Events

The Faculty of Engineering organises a programme of Induction and Introductory Training Events which all new research students are required to attend at the first opportunity. These provide important information about your studies and are essential to enable you to get started safely and effectively on your research degree. They also give you the opportunity to meet other students and staff in an informal atmosphere. You should visit the Graduate School Office to book your place on the Induction Day, Speed PhD events and the certificate-level Health and Safety Training course.

Faculty Induction - a welcome to the Faculty of Engineering	Introductory information on University library, careers and computing services, an essential safety awareness briefing, and information on the Faculty and University-wide training and development provision.
Lab and Research Team Housekeeping including Site-specific Safety Induction	You should go through your team and department's working practices and procedures with your supervisor. The *Lab and Team Housekeeping* checklist provided in the Appendix should be returned to the Graduate School Office/ School of Computing Office within 4 weeks of starting your studies to ensure you cover all appropriate areas. As part of the *Lab and Research Team Housekeeping* exercise, you should arrange to see your school Safety Advisor to receive a briefing in the essential aspects of health and safety including fire, manual handling, COSHH and risk assessment for laboratory safety, portable appliance testing and any specific local rules such as laser or radiation. If your work is laboratory-based, you must discuss relevant safety arrangements with your supervisor and arrange an induction session with the relevant laboratory technician or supervisor. *You must do this before starting any laboratory work.*
Speed PhD – An Introduction to PhD Studies – a two-day active learning workshop	Gear yourself up for research and get to know other new research students at the same time: this workshop takes an enjoyable look at the practicalities of doing a research degree at Leeds, at how to work with your supervisor; gather and manage information; plan and manage your time; focus on your research problem; monitor your progress, deal with ethical issues, avoid plagiarism and protect intellectual property rights, etc.
Certificate-Level Safety Course	You are required to complete a certificate-level training course within a short time of joining the University. If you do not, you may be asked to withdraw from laboratory or other activities.
Teaching and Learning Days	Essential for those who have been asked to supervise small groups, do laboratory demonstrations or mark student work. You must complete this training before you start teaching work – booking forms are available at the Graduate School Office or from n.scanlon@leeds.ac.uk. These must be countersigned by whoever requested you to teach or supervise.

Other requirements for new students

English Language Test

All students whose first language is not English must take the University's English Language Test within one month of registration. This is a diagnostic test designed to identify any areas which may require additional support or training, which is generally provided free of charge. The test is not part of the admissions process. Information about booking a test date is available from the Graduate School Office/ School of Computing Office.

Training plan

The University requires that, within one month of a research student commencing their studies, supervisors should review needs and agree (in writing) a draft training plan. Your supervisor is responsible for initiating this process, which is intended to help monitor and assess the achievements of students in acquiring sufficient expertise in generic and subject/professional skills. A copy of the draft plan must be retained by the Graduate School Office/ School of Computing Office in the student's file. It is expected that the training plan will be amended as the student's needs develop.

If you have already attended our student induction workshop *Speed PhD*, the formal plan should be informed by the Training and Development Needs Analysis process from the workshop, and by any personal development planning you have already begun.

Requirements for remainder of Year 1

Initial progress review - full time students within 6 months and part-time students within 9 months of registration
Supervisors are required to submit a progress report to the School's Postgraduate Tutor and may require students to complete a short report. You are asked to initiate this process by completing the first part of the relevant form.

Transfer Report - full time provisional PhD students within 12 months and part-time provisional PhD students within 24 months of registration (not required for other students)
All PhD students start their studies registered as 'provisional PhD'. Transfer is the process by which students' progress is assessed in order to determine whether a student will progress to register for PhD study. Full details of the Transfer Report are set out in the Faculty Protocol. In order to complete the transfer process by the deadline, students are expected to submit their draft report by the end of month 9 (full-time students) or month 18 (part-time students).

Requirements for subsequent years

Year 2

Annual report - all students no later than 24 months after formal start date
Supervisors are required to submit a progress report to the School's Postgraduate Tutor. You are asked to initiate this process by completing the first part of the relevant form. Your supervisor may also require you to produce a short report. For part-time PhD students this will be the Transfer Report. This report will be required before you re-register.

Formal Registration - all students no later than three weeks after anniversary of formal start date
Register with the University

Year 3 and subsequent years as appropriate

Annual report - all students no later than 36 months after formal start date
Supervisors are required to submit a progress report to the School's Postgraduate Tutor. You are asked to initiate this process by completing the first part of the relevant form. Your supervisor may also require you to produce a short report. This report will be required before you re-register. An annual report is required even when a student is planning to submit their thesis.

Formal Registration - all students no later than three weeks after anniversary of formal start date
Register with the University

Final Year

Formal Registration - all students no later than three weeks after anniversary of formal start date
Please note that students in their overtime year must normally still register with the University

Enter for examination - all students at least three months before the submission of the thesis
Submit the relevant examination entry form to supervisor for completion and forwarding to Research Student Administration.

Submit thesis - all students within timescale specified by the University
Submit a bound copy of the thesis to the Research Student Administration. Students are strongly recommended to familiarise themselves with the formal submission deadlines at an early stage.

Take part in an oral examination - all students as arranged by the School
Further advice is provided in the University Research Degree Handbook and supporting training is offered.

Graduation - all students who gain the award of a degree
Held twice a year, normally in July and December. Certificates may be sent directly to candidates unable to attend.

Leaving the University

All Engineering students leaving the University must complete the *Protocol for Research Students leaving the School*, whether they are leaving during, or on completion of, their studies. This requires the student to have their Supervisor sign a form to confirm that everything has been left in an appropriate state (eg laboratory space clean and tidy, chemicals labelled and intellectual property accessible.) Students who do not complete this process may incur costs. .

Section 3 Introduction to Researcher Skills Training

The Faculty of Engineering provides a broad programme of skills training and professional development for postgraduate students and postdoctoral staff. During your time at Leeds we aim to help you further both your research and transferable skills; provision is designed to reflect the demands you will face during your current project and the wider sphere of research careers. Events have been planned to develop not just the 'nuts and bolts' skills you will need to complete your research effectively but to keep you at the leading edge of developments in learning and teaching, innovation, enterprise and knowledge transfer and to help you succeed in future employment.

In addition to taking part in training and development we encourage you to engage in a Personal Development Planning Process (PDP). This provides you with the opportunity to plan, reflect on and record your personal and professional progress, including the development of research and other transferable skills.
In a Joint Statement on Skills, the Research Councils UK outlined their requirements of the research and transferable skills researchers should acquire.

You may already possess these skills or need to develop them during the course of your research. The University provides PDP tools to enable you to audit your current abilities against the benchmarks the Joint Skills Statement supplies, and to record your personal progress with reference to them. You can download these tools at www.leeds.ac.uk/sddu/gts.

All new research students also receive hard copy PDP information within the Leeds Engineering Graduate Student Book and will also be offered a Training and development Needs Analysis as part of the Faculty's mandatory Speed PhD course which you will complete as part of your Induction. Other researchers can complete a TDNA using the tools provided by the Graduate Training and Support Centre www.leeds.ac.uk/sddu/gts which you can use in planning and maintaining a personal training programme in discussion with your supervisor or line manager.

Remember when reviewing and recording your progress that personal development includes not just workshops and courses you attend in the Faculty or University but external conferences, books and papers you read; discussions with your 'boss', supervisor or careers advisor; papers or posters you present; observations you make; group discussions and peer support you engage with; mentoring, etc. These all contribute to career-fitness and are part of a continuum of life-long learning.

Training conferences, courses and workshops for postgraduate and postdoctoral staff are organised by the Graduate Training Skills Manager, based in the Graduate Office. Click here to see the current programme. They are designed specifically for Engineering Researchers and complement and extend the courses offered by the Graduate Training and Support Centre of the University's Staff and Departmental Development Unit (SDDU) and other resources provided by the Careers Office, Skills Centre, Research Support Unit, etc. You can find out more information about all of these at www.leeds.ac.uk/iss/training/pgtrain/.

For all enquiries and suggestions for future training events: email the Researcher Training and Development Administrator Natalie Scanlon n.scanlon@leeds.ac.uk.

Other Personal and Professional Development Opportunities

1 Networks

There are many email research networks across the University where you can receive and post events or other items of interest to other colleagues.
See http://www.leeds.ac.uk/rsu/general/email.htm for open lists you can join.

The web site http://www.researchresearch.com also carries rich resources, job and funding opportunities for researchers.

ResearchGATE is a free of charge Science 2.0 platform designed for the need of researchers. It provides a global and powerful scientific web-based environment, in which scientists can interact, exchange knowledge and collaborate with researchers of different fields. Sign up and be part of the scientific network. You can:

- present yourself and your research projects
- enrol, expand, and broaden your science network globally
- exchange know-how and expertise
- initiate collaboration
- discuss your research limitation and get positive feedback
- use our innovative tools and work environments for online collaboration

See https://www.researchgate.net/

AuthorAID supports developing country researchers in publishing their work. It provides researchers in more than 50 countries with a community space for discussion and questions where researchers can obtain advice and:

- gain access to documents and presentations on best practice in writing and publication
- receive world-wide training workshops on scientific writing
- get a chance to network with other researchers
- tap into personal mentoring by highly published researchers and professional editors

See http://www.authoraid.info/

2 Other University of Leeds Training Providers:

In addition to events provided by the Faculty of Engineering, the University of Leeds offers a wide range of training and personal development opportunities for research students. The University is one of the largest centres for research in the United Kingdom with more than 2,500 students registered for research degrees. It offers outstanding facilities and support and a wide range of skills training provided by the **Graduate Training and Support Centre** (GTSC) which undergirds that being offered by the Faculty of Engineering. You can view its extensive courses programme at www.leeds.ac.uk/rtd

In addition skills training may be obtained from:

The Language Centre
Free, optional, part-time English Language Courses for international students who may need English language support or help with academic writing in English as a foreign language. The Language Centre has a useful self-access area with web-based materials for students to practice the grammar functions and vocabulary they need for academic study. The Language centre is located in the Parkinson Building (2nd and 3rd Floors); Telephone: 0113 34 33251 or email langc@leeds.ac.uk. More information at www.leeds.ac.uk/languages/intro.html

The Library Information Literacy Programme
Workshops are run by the University Library to support your use of information resources. A wide range of topics are covered including: current awareness of the literature in your field; how to find relevant dissertations and theses; how to manage bibliographical references; intelligent web-searching, etc. You can also get support for database searching and finding other specialized materials in Engineering. Find out what's available from www.leeds.ac.uk/library/training

The Careers Centre
Book an appointment, email or drop in for help with any careers issue. The Careers Centre is at 5-7 Cromer Terrace, Telephone 343 5295/6 and can help you with career planning, job seeking, making applications, etc. Their Information Room offers a wide range of related resources including detailed information on postgraduate recruiters, reference books, newspapers, journals, etc. The Careers Centre also hosts a wide range of events each year to help you find a career, chat to prospective employers, etc. An Engineering specialist Careers Advisor also conducts regular drop-in clinics in the Faculty where you can have your CV (résumé) reviewed.

The Centre's website has an excellent information section for graduate researchers at http://www.careerweb.leeds.ac.uk/students/

Information Systems Services (ISS)
The University has its own Information technology and information systems training service which provides courses in a variety of computer software topics. Please discuss your training requirements with your supervisor before booking onto a course. See www.leeds.ac.uk/iss/training for further information about free courses, or telephone 0113 343 5417. You can also pick up a course timetable from the Graduate School Office or ISS Help Desk at Level 10 E C Stoner Building above the entrance to the Edward Boyle Library.

Section 4 Student Support

Support provided by the Schools and the Faculty

The Graduate School Office

Many of the support and administrative functions for research students in the Faculty of Engineering are handled by the Graduate School Office. A summary is provided below.

Graduate School Office functions

- Administration of applications and enquiries
- Administration of studentship awards including renewals
- Registration, suspensions, and extensions
- Monitoring and administrative support for training plans, supervision records, Transfer, annual reports
- Maintenance of student records and files

School or research institute functions

- Provision of desk space and equipment
- Administration of funding for research expenses including equipment and travel
- Administration of research student contributions to teaching, marking and demonstrating
- All academic functions

The Graduate School Office is open to callers from 10.00 am to 4.00 pm, but we will deal with urgent matters outside these hours. The office can be contacted on 0113 343 8000 or by e-mail at phd@engineering.leeds.ac.uk. You will generally be dealt with by your School contact within the office, but all staff can deal with any enquiries.

As a relatively new unit, we are always pleased to receive suggestions for and feedback on our activities and we look forward to seeing you in the office. Graduate School Office staff and responsibilities are:

Simon Welsh - Graduate Support Manager
Vicky Masters - PGR Team Leader
Moyra Culbert – PGR Officer for current students
Celia Taylor - PGR Officer for applications
Alastair Marjoram - PGR Officer for applications

School of Computing Office

The Student Office in the School of Computing deals with Computing students for administrative functions. The student contact is Georgina Lambe (George). George's telephone number is 0113 343 5440 and her e-mail address is georgel@comp.leeds.ac.uk

Over the course of 2011/12 academic year, it is planned that administrative support to research students in the School of Computing will transfer to the Graduate School Office.

Student Representation and Feedback

Each School in the Faculty has a Staff/Student Committee which represents the needs of its students. Selection of representatives and further information are arranged at School level. The GSO arranges a selection process early in the academic year.

Faculty Coffee Room

The Faculty of Engineering Staff Common Room is also open to all research students in the Faculty of Engineering. The Common Room has been nicely refurbished, and has comfortable seating, facilities for making drinks, a microwave, and a low-price drink vending machine. You will need to take your own mug (including for the vending machine).

Please be aware that other supplies of tea, coffee, milk, etc belong to individual staff and are not communal. All users are respectfully asked to take care of the facilities (no late-night parties, please!) The Common Room is located in Room 315 on the third floor of Civil Engineering, immediately opposite the stairs.

We hope that by opening the facility to research students we can encourage greater informal contact both amongst research students, and between students and staff.

Sources of information and advice in the University

Leeds University Union

- Home of the Postgraduate Society

There are also over 200 clubs and societies at LUU to help make your leisure time at University more fun. You can find out more at: http://www.leedsuniversityunion.org.uk/clubsandsocieties/

Useful contacts

- Ben Jackson, LUU Education Officer, email: b.a.jackson@luu.leeds.ac.uk or phone 0113 3801243 or call into the Exec Office on the 1st floor of the Union Building.
- Lisa Burton is the Student Engagement Coordinator, for the University based in the Union Building. If you want to get involved in the representation of research students at University level, e-mail or phone Lisa at l.burton@leeds.ac.uk or 0113 3801462.
- www.leedsuniversityunion.org.uk/

Student Advice Centre

LUU Student Advice Centre is open from 9.30 - 4.30 weekdays when the University is open and offers advice on money, housing, academic matters, employment, health and well-being, crime and the law.

Research Student Administration (RSA)

Responsible for all administrative matters handled centrally relating to postgraduate research students, including

- formal acceptance letters
- attendance statements
- council tax exemptions
- registration
- replacement student cards
- receipt of submitted Theses and dispatch for examination.

Tel: 0113 343 4006
http://www.leeds.ac.uk/rsa/

Other sources of information and advice

The University offers one of the most comprehensive ranges of student support services supporting in the UK. The majority of these form part of the Student Support Network (SNN). Further information about SNN can be found at: http://www.leeds.ac.uk/ssn/

In addition, all students can find programme-specific information via an extensive University of Leeds intranet site know as The Portal:
http://portal.leeds.ac.uk/

Section 5 Health and Safety

The Faculty of Engineering is committed to high standards of health, safety and welfare. It is Faculty policy to maintain a safe environment for all staff, students and visitors by raising health and safety awareness; instilling a positive safety culture; and, by promoting cooperation between all members of the Faculty with regard to safety initiatives. Safety is a particular issue for research students who may be operating in unfamiliar environments or with limited experience.

As well as contributing to a safer working environment, the Faculty views safety training as an important part of a student's overall research skills portfolio which will continue to be of value in their future career.

The Faculty requires research students to engage in three safety training and induction activities.

1 Faculty Safety Awareness
A regular Safety Awareness session is provided to all new students by the Faculty Health and Safety Manager or nominee, usually as part of the initial Induction and Welcome event. Attendance is compulsory.

2 Health and Safety Certification Course
All students must attend the certificated training course organised by the Faculty at the first opportunity. Students who do not attend the course at the earliest opportunity may have access to laboratories withdrawn, or their activities limited.

3 Local Site-Specific Safety Induction
As an additional but vital step, all students must receive safety induction and training appropriate to the work they are to carry out and the offices and laboratories that they will work in. This induction and training must be arranged by the student's main supervisor at a time appropriate to work schedules. Note though that no work may take place in any hazardous environment (e.g. laboratory work, field study) until this local induction has been completed.

All students should read the University leaflet Postgraduate Students: Study in Safety on arrival and visit the Faculty's main Health and Safety page before engaging on their work.

Section 6 The Engineering Research & Innovation Service (ERIS)

The Engineering Research & Innovation Service (ERIS) are a specialist team whose role is to support academic staff in Research and Innovation, facilitate collaboration with business and maximise impact from research.

Advice is available on how to write the impact components of EPSRC bids, including suggested standard items, how to access and cost internal resources and services, defining an exploitation strategy (if appropriate), intellectual property protection and management.

If you have developed some technology, a new process or methodology that you think may have some commercial potential, please talk to us as soon as possible. You may need to file a patent and/or to keep your research confidential. ERIS staff can work with you to develop and implement a plan, including patenting, identifying commercial partners and funding options.

We can also advise on what and when you can publish, if you are working on something that might have commercial potential, and are collaboration tactics with industrial partners.

The service is also responsible for coordinating;

- Consultancy
- CPD, Conference and Events
- Faculty Research Office
- IP Management & Exploitation
- Knowledge Transfer Partnerships
- Large Grant Support - European Framework
- Pathways to Impact EPSRC/RCUK
- Placements and Secondments
- Technology Strategy Board

More information can be found at

www.engineering.leeds.ac.uk/faculty/business

or e-mail business@engineering.leeds.ac.uk to have your enquiry directed to the right person for your specific need.

Appendix 1 Records and Documentation

Copies of all the documents and forms listed below can be found on the Graduate School Office website at:

www.engineering.leeds.ac.uk/go

Follow the links to 'lifecycle'

Faculty Protocol for the implementation of the University Code of Practice for Research Degree Candidatures
(www.engineering.leeds.ac.uk/go/lifecycle/protocol.doc)

Forms

Lab and Team Housekeeping
(www.engineering.leeds.ac.uk/go/lifecycle/Lab&Team.doc)
Training Plan
(www.engineering.leeds.ac.uk/go/lifecycle/Training_plan.doc)
Supervision Meeting and Training Record
(www.engineering.leeds.ac.uk/go/lifecycle/Supervision_record.doc)
Development Objectives
(www.engineering.leeds.ac.uk/go/lifecycle/development_objectives.doc)
Personal Development Plan
(www.engineering.leeds.ac.uk/go/lifecycle/pdp.doc)
Initial Progress Review (6/9-month Report)
(www.engineering.leeds.ac.uk/go/lifecycle/report_6month.doc)
Transfer
(www.engineering.leeds.ac.uk/go/lifecycle/report_Transfer.doc)
Annual Report
(www.engineering.leeds.ac.uk/go/lifecycle/report_annual.doc)
Final Annual Report
(www.engineering.leeds.ac.uk/go/lifecycle/report_final.doc)
Leavers Form (Protocol for any research student leaving the Graduate School)
(www.engineering.leeds.ac.uk/go/lifecycle/documents/leavers.doc)

Appendix 2 School information pages - School of Civil Engineering

Computing Support: Only legal, licensed copies of software are used within the University. Requests for software installations should be made to Julie Webster through your supervisor. For non-site licensed software you will be asked to provide proof of purchase, together with a copy of the original, signed licence agreement.

Queries involving IT should be discussed with your supervisor. Specific technical queries on the use of IT may be directed to the IT technical staff via the desktop form on your PC. Queries concerning access and usernames should be directed to Julie Webster.

The normal method of communication between the School and students will be via email to their default email address. The format of this address is: (username)@leeds.ac.uk

World-wide access to email is available from any internet browser by opening:
webmail.leeds.ac.uk

Laboratory Facilities: Laboratory facilities are available dependent upon your area of research. You will be advised accordingly by your supervisors.

Photocopying: You are entitled to a photocopying allowance of 1800 A4 copies over the research period. A key-card with credits will be issued to each student by Su Sharp in the foyer (ground floor, School of Civil Engineering) for use on the photocopier in the Print Room. This card is unique and cannot be replaced free of charge. Photocopying on other University machines must be paid for.

Printing: Free access to laser printers is available to all PGR students. Each PhD room has an appointed IT representative who will inform Michelle Aboud in the Civil Engineering reception when new laser cartridges are required. Boxes of A4 paper can be obtained through Su Sharp in the Print Room.

Lockers: Various lockers are provided in the Civil Engineering corridors. Select an empty locker and attach your own padlock. The lockers are emptied in the summer of each year when the taught course students have departed. PhD students are therefore advised to put a label on the locker with their initials and "PhD student". The locker will then not be opened.

Mail, Phones and Faxes: Alphabetically ordered student pigeonholes are provided in the foyer of the School next to the lift and this is where personal messages (from staff, fellow students or having arrived by mail) will be placed. Students are advised to check their box regularly.

Research accounts: Lead supervisors are given an allowance by the School for each student's research costs. Any expenses incurred by the student must be with the prior approval of the supervisor. Items of equipment, materials/consumables and software can be ordered, with the permission of the supervisor, either through the supervisor or technician involved with the project.

Demonstration: Students wishing to take up demonstrating duties will be required to attend the Faculty in-house training course. Students who have not attended this workshop will be unable to act as demonstrators. Pam Bishop is the main point of contact for any demonstration queries – Mrs Pam Bishop at p.a.bishop@leeds.ac.uk

Seminars: The School holds regular seminars throughout the year and all research students are expected to give at least one presentation at a seminar. Contact: Dr Yong Sheng at Y.Sheng@leeds.ac.uk.

Conference allowance: A conference allowance is set for research students to contribute to attendance at international reputed conferences for the presentation of their research results. Contact: Dr Jianqaio Ye at J.Ye@leeds.ac.uk.

Appendix 2 School information pages - School of Electronic and Electrical Engineering

Computing and Technical Support: The first time that you access email you will need to have your initial password that corresponds to your username. Communication between the School and students is normally via email. You are given a default email address, the format of which would be (userid)@leeds.ac.uk (usually printed on the student ID card).

To report faults, the Computing and Technical Support Team can be contacted by email at the following: it-ee@engineering.leeds.ac.uk

Laboratory Facilities: Each Institute has its own unique laboratories; these are tied to particular research projects. The facilities and resources you require for your research will have been allocated to you during the recommendation process in the application stage.

Photocopying: There is a photocopier outside the Head of School's Office which is free for research students to use for their academic studies.

Printing: **IMP**- All printing relating to academic studies can be sent to the Institute Secretary's Office.
IIIS - There are printers in Room 362, and the Institute Secretary's Office.

Study Room: On meeting your Institute Secretary, you will be allocated a space in a study room. You will have your own desk, computer and access to a printer.

Keys: Your Institute Secretary will give you keys or the keypad code to your study room.
A key fob for entrance into the School out of hours is also available from Reception/Student Support Office for a deposit of £10. This will be returned to you at the end of your study.

Mail, Phones and Faxes: **IMP** - Alphabetically ordered student pigeon holes are in the Institute Secretary's Office. Mail is delivered here a few times a day and can be collected from here.
IIIS - The Institute Secretary receives the mail and delivers to the pigeon holes in room 362c.There is a fax machine in the Institute Secretary's Office.

Stationery: Basic stationery for all research students is provided by the Institute Secretaries.

Research accounts: Lead supervisors are given an allowance by the School for each student's research costs. Any expenses incurred by the student must be with the prior approval of the supervisor. Items of equipment, materials/ consumables and software can be ordered, with the permission of the supervisor, either through the supervisor or technician involved with the project.

Demonstration: Students wishing to take up demonstrating duties will be required to attend the Faculty in-house training course. Students who have not attended this workshop will be unable to act as demonstrators. The Demonstration contact for Electronic and Electrical Engineering is Annabel Gartside.

Appendix 2 School information pages - School of Mechanical Engineering

Computing Support
All students within the School of Mechanical Engineering have access to a wide range of computing facilities. Within the Faculty access to computing is available via clusters and study rooms which are 24 hours a day to research students.

Members of staff in Information Systems Support (ISS) provide general IT support with dedicated staff in the School providing more research specific support. The School has also invested in high performance computing facilities and if you require access to this you should speak to your supervisor in the first instance.

ISS can be contacted via the helpdesk which is located in the EC Stoner Building (Level 10) or by e-mail: helpdesk@leeds.ac.uk, or by telephone: 33333.

If you need to contact a member of the School's user support services information can be found on the School website: http://mech-eng.leeds.ac.uk/www/staff/index_it.html

Technical Support
Technical Support is available to all students within the School of Mechanical Engineering and you be advised by your supervisor who the appropriate person to contact would be for your research area/group.

Laboratory Facilities
Laboratory Facilities are available dependent upon your area of research. Each research group has access to specific laboratory facilities and you will be advised accordingly by your supervisor.

Photocopying
Upon commencement of your research degree you will receive a photocopying card for which a £1 deposit is required enabling you to make 400 copies. Please note that the card will only be programmed with an initial 100 credits. Once this 100 copy credit has been used it will be reprogrammed for a further 100 and so on until the allowance of 400 is exhausted. Once the 400 copy credit has been used you will need to purchase a new photocopying card from reception. Photocopying cards start at 75p for 25 copies and go up to £3.00 for 100 copies. The photocopier is based on the ground floor.

Printing
Printing facilities are available in each study room.

Study Rooms, and keys
Study rooms and keys will be allocated to you after registration. Keys for study rooms require a £10.00 deposit To access the building out of hours an Electronic key fob is required (also for access to a number of laboratories). If you do require this access please speak to Reception, please note a £10.00 deposit is required.

Mail, phones and faxes
Mailboxes for postgraduate students are located on the Ground floor and are arranged by surname. Keys for mailboxes are available from reception on the Ground Floor (at the back of reception area turn left and the boxes are opposite the G52 Advanced Mechatronics Laboratory). For each key you will need to pay a deposit of £5.00 which is refundable upon their return. When handing back your keys please allow for two working days for your deposit to be returned.

Telephones are available in each room; however, they can only dial internal University and local numbers.

Fax machines are available for limited student use (research related only) and in the first instance you should speak to your supervisor. Please remember on all documents (incoming and outgoing) your full name, Research Group and year of study should be noted on the fax in English.

Conference
Students who have completed between 12 and 24 months of their research degree by 1st June are required to attend and present at the School's Postgraduate Research Student conference.

Seminars
The School holds regular seminars throughout the year and they are publicised on both the University and School website:
http://www.engineering.leeds.ac.uk/mech/school/Seminars.shtml

Demonstrating/Teaching assistance
On occasions research degree students may be approached to undertake paid work within the School around the area of demonstrating and teaching assistance. The administration of demonstrating and teaching is undertaken by the Student Support Office within the School of Mechanical Engineering. Please note, appropriate training must be undertaken.

School Advisors
In addition to your supervisor(s) the School of Mechanical Engineering also allocates research degree students an "advisor". Your advisor will be an experienced member of academic staff who is independent to your research group. You will meet with your advisor twice in your first year and then once a year thereafter. You will be advised with a few days of registering who your advisor will be and you should then arrange your first meeting. You will need to complete a "nominated advisor 1st meeting proforma" and forward a copy of the notes of your meeting to the Graduate Office.

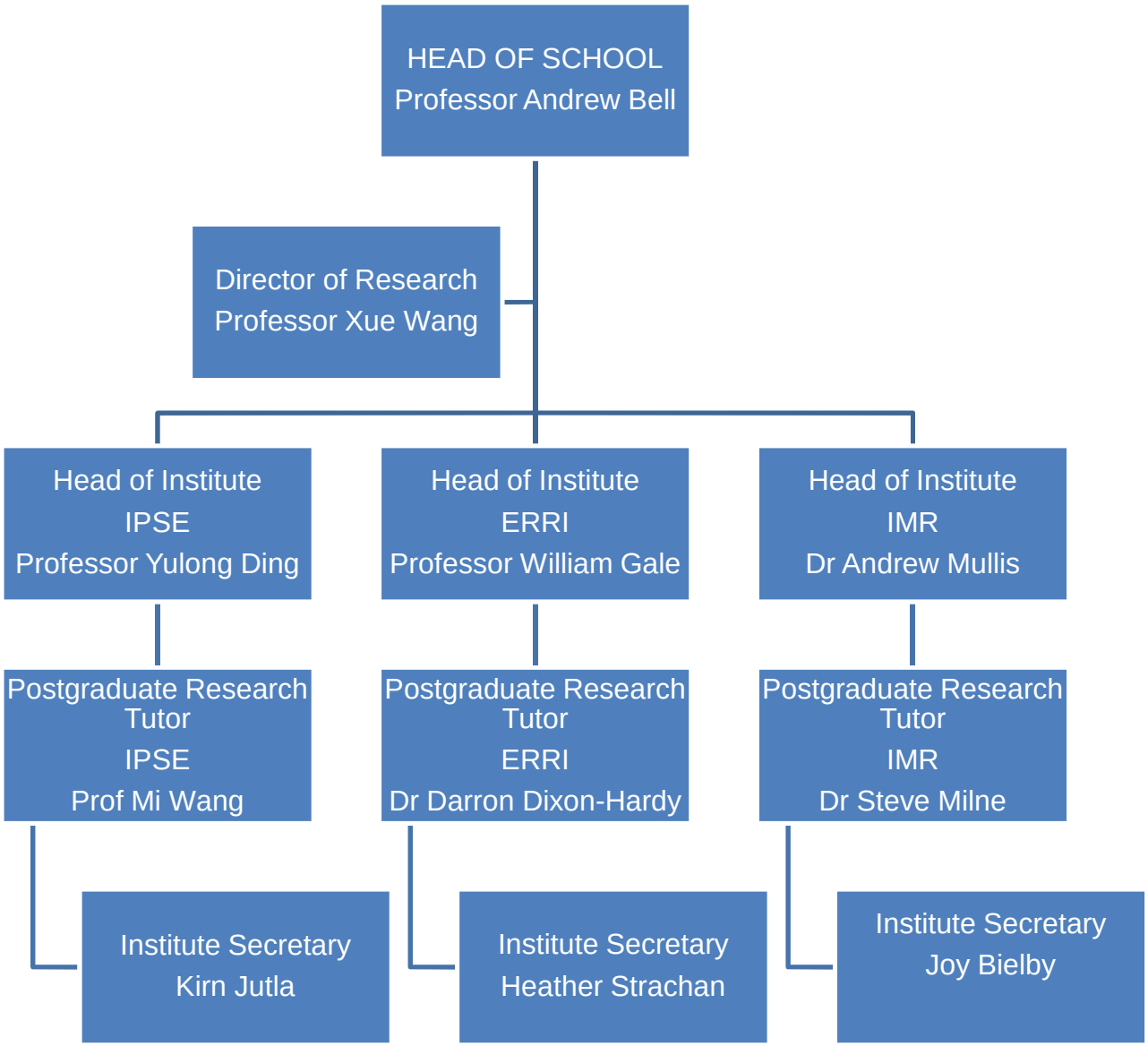
Skills Audit
The School requires all students to undertake a Skills Audit/evaluation within the first month of your studies with your supervisor. This will be reviewed again at the end of the first year and again at the end of your second year. Once the form has been completed please forward a copy to the Graduate Office.

Please note, in order to register for your next year of study all documentation must be received in the Graduate Office.

Copies of the forms can be found at: http://www.engineering.leeds.ac.uk/go/lifecycle/

Appendix 2 School information pages - School of Process, Environmental and Materials Engineering

The School of Process, Environmental and Materials Engineering is made up of 3 Institutes: Institute for Materials Research (IMR), Energy Resources Research Institute (ERRI) and the Institute of Particle Science Engineering (IPSE). The School management structure and relevant staff is listed below:



Location

The School of Process, Environmental and Materials Engineering is based in the Houldsworth Building and the Institutes are spread across 5 floors, with IMR mainly based on the 1st floor, IPSE occupying the 2nd floor and ERRI located on the 4th and 5th floors. You will also find the CFD Centre on the 3rd floor.

Access to the School is via the Clarendon Road main entrance and the doors are open from 8.30 to 5.00 during standard University opening times. However, you will be issued with a key which allows access outside of the core opening times.

Computing support

All students within SPEME have access to a wide range of computing facilities. Within the Faculty you can gain access to PC's via computer clusters and your own study room, all of which are available 24 hours a day to research students.

Members of staff in Information Systems Support (ISS) provide general IT support, however, there are dedicated staff within the School providing more research specific support. ISS can be contacted via the helpdesk which is located on level 10 of the EC stoner building, or by e-mail: helpdesk@leeds.ac.uk or telephone: 33333

If you need to contact a member of the School's user support network their name, contact telephone number and e-mail address can be found at the following link:
http://www.engineering.leeds.ac.uk/speme/KeyContacts.shtml

Technical support

Dedicated technical support staff are available to help you during your studies, their name, contact telephone number and e-mail address can be found at the following link:
http://www.engineering.leeds.ac.uk/speme/KeyContacts.shtml

Health & safety training

All research degree students will undertake at least 3 levels of formal safety training:

- School/Institute level training
- Faculty induction
- Health and Safety certification course

YOU ARE REQUIRED TO ATTEND ALL 3 LEVELS OF SAFETY TRAINING. NO EXCEPTIONS WILL BE MADE.

Students must also undergo appropriate specialist safety training for the work they do. This includes students who are to use lasers and/or sources of ionising radiation for the purpose of research who must liaise with the appropriate safety officer:

- SPEME laser safety officer: Jim Young
- Radiation protection supervisor: Dave Wright .

In addition all students will be required to undertake an initial risk assessment of their research (this may need to be updated on a regular basis depending upon your research). Further guidance including guidelines on risk assessments and the forms you need to complete can be found on the following link: http://engineering.leeds.ac.uk/health_and_safety/

If you have any concerns regarding health and safety within the School please speak to your supervisor and/or Postgraduate Research Tutor.

Laboratory facilities

Laboratory facilities are available to student's, however this is dependent upon your area of research. You will be advised by your supervisor of the facilities, however only **after** completing the safety training will you be allowed access. Before undertaking any laboratory work you must ensure that a risk assessment has been completed.

Equipment Disposal

The University has strict regulations relating to the disposal of **electrical** equipment. In the first instance you should contact the SPEME Electrical Waste Officer – Peter Dawson (mtlpgd@leeds.ac.uk).

The University has strict regulations relating to the disposal of **chemical** waste. In the first instance you should contact the SPEME Chemical Waste Officer – Alan Wheeler (a.r.wheeler@leeds.ac.uk)

Photocopying & printing

Research students do have access to photocopying and printing facilities and should in the first instance speak to the Institute Secretary.

Study rooms, lockers and keys

Your study room will be allocated to you via the relevant institute secretary after registration and following discussions with your supervisor.

Key requests should be made to Lucy Jackson in SPEME reception. Key requests will require signatures from your supervisor and institute director. For some facilities, keys will not be issued until you have completed the necessary safety training.

Mail and telephones

Mail boxes for research degree students are located within your institute. Please contact your Institute Secretary to confirm the location.

Telephones are available in most study rooms; however, please note that only internal University numbers can be dialled.

Expenses

If you have incurred any expenses or wish to undertake an activity in relation to your research which will incur a cost (e.g. attending a conference), please see your supervisor. Prior approval of any expenditure is required by your Supervisor and/or Head of Institute

Demonstrating & teaching assistance

On occasions research degree students may be approached to undertake paid work within the School/Faculty around the area of demonstrating and teaching assistance. The administration of demonstrating and teaching is undertaken by Mrs Sheilagh Ogden: s.j.ogden@leeds.ac.uk (room 4.42). Please note, appropriate training must be undertaken **prior** to the commencement of demonstrating and/or teaching duties.

Appendix 3 Joint Statement of the Research Councils' Skills Training Requirements for Research Students

The Research Councils play an important role in setting standards and identifying best practice in research training. This document sets out a joint statement of the skills that doctoral research students funded by the Research Councils would be expected to develop during their research training.

These skills may be present on commencement, explicitly taught, or developed during the course of the research. It is expected that different mechanisms will be used to support learning as appropriate, including self-direction, supervisor support and mentoring, departmental support, workshops, conferences, elective training courses, formally assessed courses and informal opportunities.

The purpose of this statement is to give a common view of the skills and experience of a typical research student thereby providing universities with a clear and consistent message aimed at helping them to ensure that all research training was of the highest standard, across all disciplines. It is not the intention of this document to provide assessment criteria for research training.

The University of Leeds endorses this statement.

All of the training offered from the Graduate Training and Support Centre is created to ensure that all students have access to development opportunities in all areas of the Joint Skills Statement.

You will also notice that the **Training and Development Needs Analysis** in the next section of this document is written around the **Joint Skills Statement**.

(A) Research Skills and Techniques - to be able to demonstrate:

1. the ability to recognise and validate problems
2. original, independent and critical thinking, and the ability to develop theoretical concepts
3. a knowledge of recent advances within one's field and in related areas
4. an understanding of relevant research methodologies and techniques and their appropriate application within one's research field
5. the ability to critically analyse and evaluate one's findings and those of others
6. an ability to summarise, document, report and reflect on progress

(B) Research Environment - to be able to:

1. show a broad understanding of the context, at the national and international level, in which research takes place
2. demonstrate awareness of issues relating to the rights of other researchers, of research subjects, and of others who may be affected by the research, e.g. confidentiality, ethical issues, attribution, copyright, malpractice, ownership of data and the requirements of the Data Protection Act
3. demonstrate appreciation of standards of good research practice in their institution and/or discipline
4. understand relevant health and safety issues and demonstrate responsible working practices
5. understand the processes for funding and evaluation of research
6. justify the principles and experimental techniques used in one's own research
7. understand the process of academic or commercial exploitation of research results

(C) Research Management - to be able to:

1. apply effective project management through the setting of research goals, intermediate milestones and prioritisation of activities
2. design and execute systems for the acquisition and collation of information through the effective use of appropriate resources and equipment
3. identify and access appropriate bibliographical resources, archives, and other sources of relevant information
4. use information technology appropriately for database management, recording and presenting information

(D) Personal Effectiveness - to be able to:

1. demonstrate a willingness and ability to learn and acquire knowledge

2. be creative, innovative and original in one's approach to research
3. demonstrate flexibility and open-mindedness
4. demonstrate self-awareness and the ability to identify own training needs
5. demonstrate self-discipline, motivation, and thoroughness
6. recognise boundaries and draw upon/use sources of support as appropriate
7. show initiative, work independently and be self-reliant

(E) Communication Skills - to be able to:

1. write clearly and in a style appropriate to purpose, e.g. progress reports, published documents, thesis
2. construct coherent arguments and articulate ideas clearly to a range of audiences, formally and informally through a variety of techniques
3. constructively defend research outcomes at seminars and viva examination
4. contribute to promoting the public understanding of one's research field
5. effectively support the learning of others when involved in teaching, mentoring or demonstrating activities

(F) Networking and Teamworking - to be able to:

1. develop and maintain co-operative networks and working relationships with supervisors, colleagues and peers, within the institution and the wider research community
2. understand one's behaviours and impact on others when working in and contributing to the success of formal and informal teams
3. listen, give and receive feedback and respond perceptively to others

(G) Career Management - to be able to:

1. appreciate the need for and show commitment to continued professional development
2. take ownership for and manage one's career progression, set realistic and achievable career goals, and identify and develop ways to improve employability
3. demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities within and outside academia
4. present one's skills, personal attributes and experiences through effective CVs, applications and interviews