

UNIVERSITY OF STRATHCLYDE

DEPARTMENT OF PHYSICS

2011/2012 HANDBOOK

for

POSTGRADUATE STUDENTS



This handbook should help guide you through your studies, but if you have any questions please do not hesitate to ask. Our friendly and experienced staff will be glad to help. We are one of the most successful physics departments in the UK and our teaching was awarded the top grade of “excellent” in the Government assessment of Scottish Universities. Our courses are accredited by the Institute of Physics. They are designed to be exciting, stimulating and rewarding. We think you will enjoy them.

With best wishes

*Prof Rob Martin
Head of Department*

CONTENTS

	Page
THE ACADEMIC YEAR 2011/2012	3
GENERAL INFORMATION	4
INFORMATION FOR NEW POSTGRADUATES	5
Policy and Practice for Postgraduate Students	5
Monitoring Progress	6
Examinations and Maximum Period of Study	6
SUPA Graduate School Courses	7
Research Colloquia	7
Postgraduate Counsellors	7
Postgraduate Queries	8
Institute of Physics	8
Representatives on the Departmental Postgraduate Student-Staff Committee (PGSSC)	8
Undergraduate Demonstrating and Tutoring: Co-ordinator – Dr Nigel Langford	8
Safety	9
Safety Training and Regulations	11
ERASMUS SCHEME	12
ADVICE FOR STUDENTS WITH SPECIAL NEEDS	12
PEGASUS and MYPLACE	12
PLAGAIRISM	12
ABSENCE	12
MOVING HOME	12
DIFFICULTIES	13
USEFUL WEBSITES	14

Our best wishes for your studies during this academic year, 2011/2012. We welcome you and hope that you will enjoy your time with us. We cannot hope to make postgraduate study easy: it would not be worthwhile if it was, and it takes many years of hard work - but we will do all we can to make it an enjoyable experience, and to provide you with the facilities to make your studying as effective as possible.

THE ACADEMIC YEAR 2011/2012

Important events which you must attend during this week, if you are in your first year of study, are

The Department Welcome Session is being held on 3rd October 2011 at 11 am in room K8.13 of the John Anderson Building.

SUPA Induction Session is being held on 4th October 2011 at 9.30 am at the Glasgow Science Centre.

SEMESTER I :

University closed	Monday 26th September 2011
Teaching Weeks 1 – 12	Tuesday 27th September 2011 – Friday 16th December 2011
Christmas Vacation	Saturday 17th December 2011 – Sunday 1st January 2012
University closed	Monday 26th December 2011 – Wednesday 4th January 2012

SEMESTER II :

Teaching Weeks 1-12	Monday 23rd January 2012 – Friday 27th April 2012
Spring Vacation	Monday 2nd April 2012 – Friday 13th April 2012
University closed	Friday 6th April 2012
University closed	Monday 9th April 2012
University closed	Monday 7th May 2012
University closed	4th & 5th June 2012

These dates are correct at the time of publishing but you are advised to check <http://www.strath.ac.uk/studying/currentstudent/keydates/> regularly for any changes

GENERAL INFORMATION

The Further and Higher Education Charter for Scotland was published in 1994. A leaflet outlining its main points is available from Registry (the University's Administration, in the McCance Building). The University's teaching was inspected by the Enhancement Lead Institutional Review (2011) and was given the highest rating possible.

The Faculty of Science includes the Departments of Physics, Mathematics and Statistics, Computer & Information Science, Pure & Applied Chemistry as well as the Strathclyde Institute of Pharmacy and Biomedical Sciences which comprises the bioscience departments. The Faculty, one of four in the University, has administrative and financial powers devolved to it by the University.

The current office-holders in the Faculty (appointed from and by the academic staff of the Faculty) are:

Dean: Professor Iain Hunter

Vice-Deans: Dr A Mulholland (Knowledge Exchange)
Professor Alan Harvey (Research)
Dr Chris Prior (Academic)

Permanent administrative staff of the Faculty (based in the McCance Building) are:

Faculty Manager: Ms Bronagh Dallat

Assistant Faculty Manager: Mrs Jill Kyle

Enquiries to Faculty staff can be presented at the Registry enquiry desks in the McCance Building. [They also deal with changes of address, changes of registration for classes or courses, medical certificates and the administration of the Examination Boards that consider your end-of-year examination results.]

The Department is housed mainly in the **John Anderson (JA) building**, but some staff have offices and laboratories in the adjacent Colville (Col.) Building, linked at levels 3, 4 and 5. The John Anderson Building is open Monday to Friday from 8.00 am to 10.00 pm. After 6.00 pm access is only via the main door (level 5) or via the Colville Building as the subsidiary entrances are locked to maintain security.

The Department makes available JA8.18 (The Bob Illingworth Room) as a **Student Reading Room**. You are asked to cooperate by not using 8.18 for conversing, eating or drinking. This room is for students of all years, and of all courses. (Please treat it with care, or else the facilities will be withdrawn.) There is a student common room and a computer room on JA level 5.

The Department has over **30 academic staff**. The Head of Department (2010/2013) is Professor Rob Martin (JA 8.02).

Information on the Department and its staff can also be obtained from the Department Website <http://phys.strath.ac.uk>

Should you need to contact a member of staff, contact details can also be found on the Department Website <http://phys.strath.ac.uk/information/people/people.php>.

Alternatively, messages for staff may be left in their pigeonhole on the 8th floor of the John Anderson Building, outside JA 8.31. (Please note, names are above pigeonholes, not under.) Besides its academic staff, the Department also includes research fellows, research assistants and research students who, besides their research activities, participate in the teaching of the Department. In addition there are also technical and secretarial staff. **Photographs** of all the staff are displayed on the **8th Floor of the John Anderson Building** outside JA 8.03.

The Department uses the internet to communicate with students and so it is essential that you check both your university email account and the Faculty of Science VLE, MyPlace daily.

On timetables and notices, each building on the Campus is identified by a prefix. Originally these were mostly single letters, and the John Anderson Building was denoted by K. This is still used by the University in its timetables for classes and examinations, but the more user-friendly notices issued by the Department use two letter building prefixes, like JA for the John Anderson Building, LT for the Livingstone Tower, etc.

INFORMATION FOR NEW POSTGRADUATES

Introduction

The following is intended to give you some general information regarding your postgraduate studies in the Department. It contains several Reply Sheets which you should complete and return to Marionanne McLaren, Department Teaching Office, JA8.31, as quickly as possible.

Dr Gordon Robb, Postgraduate Tutor

Policy and Practice for Postgraduate Students

Departmental Requirements

Every PhD student within SUPA is required to undertake a minimum of 40 hours of SUPA Technical Courses during the first 2 years of their PhD studies. In addition, every PhD student within SUPA is required to undertake a minimum of the equivalent of 20 hours (or 4 days) of generic skills development during the first 2 years of their PhD studies.

All First Year Students are expected to give a short talk to the Department on their progress and plans in August or September of the first year.

All PhD students and MPhil students with a minimum period of study longer than one year, are required to submit a written report on their work (not longer than 3,000 words) by mid-August of the first year (or, in special circumstances, at a time agreed by the Postgraduate Tutor). This is assessed by a committee consisting of a Chairman, (nominated by the Postgraduate Tutor) the Primary Supervisor and Secondary Supervisor. The assessment will include a brief interview, normally held in early September. This committee will make a recommendation on whether the Student should continue study. In the case of a Student whose work shows some weakness, but who is allowed to continue study, the committee may request remedial work in appropriate areas. The form of this progress assessment follows that required by the funding councils.

All PhD students are required, 12 months before the end of the minimum period of study, to submit a Brief Report on a standard form stating (i) achievements so far, (ii) programme for final year's work, (iii) timetable for this work and (iv) a tentative thesis plan and a research poster.

This information will be used as the basis for a *viva voce* examination conducted in the same way as the first year viva with completion of a Departmental Report Form. If submission within the minimum period of study is not deemed possible, reasons must be given, and an alternative proposed.

After submission of their thesis PhD students may be invited to present a seminar on their work as part of the Departmental Colloquia programme.

Monitoring Progress

The main aim of the formal machinery for monitoring progress is to identify any problems early, so that Students normally complete their degree within the minimum period of study. The University Regulations permit submission of the thesis up to two months before the end of this minimum period. The examining of a thesis normally requires around six weeks; it is thus possible to complete *all* the work (including the oral examination for PhD candidates) within the period for which Students are funded to attend the University.

The University requires annual completion by the Department of a form reporting Student progress, and (where necessary) making recommendations on such matters as transfer of registration between the degrees of MPhil and PhD. This form has to be seen and signed by the Student, and forms part of the Student record.

The Vice-Dean of Science in his capacity as convener of the Faculty's Academic Administration Committee has a watching brief on all postgraduate matters, and convenes an Appeal Committee in the event of an appeal against a Departmental decision on study progress.

Examinations and Maximum Period of Study

Candidates admitted to the Faculty of Science to study for the degree of PhD must submit their thesis within four years from the date of registration for the degree by full-time study and within six years for part-time study.

Examiners are appointed by the Faculty Board following a recommendation from this Department. Examiners may be appointed during the summer months through the exercise of vacationary powers by the Dean. There will normally be one Internal Examiner (not the Supervisor) and one External Examiner. The Supervisor may attend at all stages of the examination process (including any oral examination) in a non-voting capacity.

Supervisors should alert the Postgraduate Tutor three months before the anticipated date of submission of a thesis (and by April if submission is expected during the summer vacation). After consultation with the Supervisor, Internal and External Examiners together with a convenor will be recommended to the Board of the Faculty of Science.

The Convenor is formally responsible for ensuring expeditious progress with the examination process and is responsible for convening any Oral Examination. Students must be notified of the time and place of an Oral examination *in writing* and should be required to confirm *in writing* their availability. Notification should be done by the Supervisor. The normal interval between submission of the thesis and the Oral Examination is about two months but will depend on the commitments of the examiners.

The Convenor will act as Chairman for the Oral and will be responsible for returning the examiners' decision and report to the University Registry-Science and a copy to the Department co-ordinator for filing.

For a PhD degree, there is always an Oral Examination. For MPhil Students, this is at the discretion of the examiners, but there will be such an examination unless the examiners agree unanimously that it is unnecessary.

The examiners' decision may take one of the following forms:

- (a) That the degree be awarded
- (b) That the degree be awarded after minor amendments to the thesis have been made to the satisfaction of the Internal Examiner
- (c) That the thesis be revised in the light of the examiners' detailed advice and resubmitted within a specified period.
- (d) Exceptionally (for PhD candidates) that a lower degree be awarded
- (e) That no degree be awarded and there be no right of resubmission.

APPEALS: Please see section 20.1.37 in Part III of the University Calendar, Postgraduate Regulations, available in the Department Office.

SUPA Graduate School Courses

All postgraduates are members of the SUPA Graduate School and are required to attend lecture courses run by the School, which will mostly be held in the SUPA Videoconferencing Suite (8.13), with lectures either given here in person, or remotely at one of the other SUPA institutions and watched on screen. Information about the courses and the timetable can be found in the separate brochure or on the SUPA Website <http://www.supa.ac.uk/>. Attendance is compulsory for all SUPA approved classes.

New students should discuss course choices with their Supervisor in Week 1.

Research Colloquia

All PhD students are expected to attend Departmental Research Colloquia, usually held every second Wednesday afternoon during semesters 1 and 2.

Postgraduate Counsellors

It is normal practice for all postgraduate students in the Department to have a Counsellor. The role of the Counsellor is outlined in paragraph 4 (vii) of the 'University Code of Practice for the Supervision of Postgraduate Research Students'. A list of all members of staff and a list of research group attachments is available at:

<http://phys.strath.ac.uk/information/people/people.php>

I would prefer that students make their own choice and inform Marionanne. I suggest that you choose someone whose main research interest is not the same as your own.

This may be a little difficult for those who are just joining the Department. Please make your selection by Monday 12th December 2011. Before giving the name to Marionanne you should ask the member of staff whether he or she would be prepared to act as your Counsellor. May I ask that you take this fairly seriously because if you have problems during your period of postgraduate study you may wish to have some independent advice.

Postgraduate Queries

In the first instance please contact Marionanne, if you have any queries.
Physics Teaching Office, JA 8.31, Telephone, 0141 548 3366

Institute of Physics

Postgraduate Students can join the Institute of Physics, cost is £19 per year. Membership also includes reduced conference fees. Further information and application forms are available at <http://www.iop.org>

Representatives on the Departmental Postgraduate Student-Staff Committee (PGSSC)

A little later in Semester 1 there will be a call and if necessary an election for these posts.

Undergraduate Demonstrating and Tutoring : Co-ordinator – Dr Nigel Langford

If you wish to earn some extra money by laboratory demonstrating and tutoring while you are a research student, then please contact Dr Nigel Langford (n.langford@phys.strath.ac.uk) first obtaining your supervisor's approval.

Demonstrating and tutoring duties in the Department of Physics may be summarised as follows:

- Laboratory demonstrating to 1st or 2nd year physics students with a commitment of 3-5 hours per week in both semesters giving a total contact time of up to ~90 hours.
- Laboratory demonstrating and tutoring to students from other departments who are taking physics lectures. Typical total contact times per subject are 9 hours laboratory and 3-9 hours tutorial. Postgraduate students may be allocated to more than one of these duties depending on availability.
- There are also limited opportunities in computing, computational physics and electronics at 3rd year level.

The academic staff member in charge of the class will provide guidance as to what is expected such that you develop as a teacher and the undergraduate students gain the most from this part of their classwork.

Safety

Safety is YOUR business and responsibility at all times. These notes supplement the Department's Safety Regulations and should be read carefully.

Potential hazards in physics laboratories include fire, electrical, materials and chemicals, machinery, gas cylinders, "common" accidents, ionizing radiation, laser UV, and microwave radiation. Special precautions are necessary for work on the roof of the John Anderson Building.

Fire

Unlikely but potentially fatal to many people if it should happen. No smoking in labs. Do not let waste paper accumulate. Do not leave gas burners on unattended. Electrical equipment, especially older power supplies can go on fire if short circuited and wrongly fused. Rotary pump motors can seize (i.e. jam) and go on fire if not properly protected. In general switch off unattended equipment unless there is a good reason for leaving it on. Know where the fire exits are.

Electrical

Current through heart stops operation of heart. Use safety equipment (see below). When adjusting equipment keep one hand away from equipment and away from any earthed conductor. This reduces current through heart from two-handed contact from 'live' to 'earth'. Know about resuscitation procedures - see notices displayed in every lab.

- Mains operated equipment including 5V power supplies, desk lamps etc.: Safety depends on correct wiring of plug, good quality cable, right fuse, proper earthing. "Tingly feeling" in finger when touching equipment indicates that it is not earthed properly. Report defects to demonstrator or lab technician - do not leave it for someone else.
- High voltage capacitor banks are very dangerous. Lethal charge is stored long after power supply switched off if fault occurs in protection circuits. Safety depends on good insulation and safety checks before alteration or maintenance (forbidden to students).
- Any high voltage equipment. "Tracking" occurs across surface of insulator. High voltage can then appear at unexpected places. Switch off power supply when altering circuit.
- Darkroom equipment - e.g. safety lights, driers etc. Dangerous because the darkroom is usually small, badly lit and wet (you are well earthed and hence at risk).

Materials and chemicals

- Many common chemicals and solvents are toxic - cancer an important risk, e.g. Benzene, Carbon Tetrachloride, Chloroform. Good ventilation important. Tap water is not necessarily drinking water.
- Many solvents are inflammable - especially Benzene.
- Do not tip solvents down sink unless it is certain they will do no harm.

- Unless you have good knowledge of chemistry, do not mix chemicals without first getting expert advice.
- Alkali metals (e.g. sodium, potassium) react explosively with water.
- Mercury fumes are poisonous. If mercury gets spilled, inform demonstrator.
- Liquid nitrogen is cold but causes burns. Make sure it cannot splash into your eyes or onto your clothing.
- Asbestos fibres can lodge in lungs - cancer years later. Be cautious with asbestos and seek advice (there shouldn't be any asbestos in the lab).
- Many chemicals can cause dermatitis or other skin ailments (some people more susceptible than others). Keep your hands away from chemicals (gloves available if needed). Wash your hands if they should come into contact with chemicals of any sort.
- In general - do not eat in labs. Wash hands after leaving lab and before eating. Label all containers of chemicals and never use lemonade or similar bottles to store chemicals in.

Machinery

- In lab, rotary pumps have powerful electric motor with drive belt. Belt guard is not infallible protection against long hair or tie being caught up in belt. Fans on diffusion pumps are also a hazard.
- In machine shop - get expert advice. You should not use machines without supervision.

Gas cylinders

Contain gas at high pressure (~ 200 atmospheres). If a cylinder topples over, the danger results from its large weight and from the possibility that the cylinder neck may fracture (ejecting the valve). Gas cylinders should be secured to wall. Two valves to operate - get advice from demonstrator the first time you use one.

"Common" accidents e.g. falling down stairs, tripping over obstacles etc. Keep passageways clear of obstacles (e.g. bench stools, books, unused equipment) - especially in darkened labs. No horseplay in labs.

Radioactive or X-ray sources are covered by special rules. They must not be used without an approved scheme of work signed by the Department Radiation Protection Advisor.

Lasers are divided into classes:

1	Harmless
2 or 3A	Low power but precautions needed
3B	Medium power - severe eye damage possible
4	Severe eye and skin damage possible

Before using any laser other than a class 1 you must have permission from your Supervisor who will arrange for an approved scheme of work signed by the Departmental Radiation Supervisor.

Roof of the John Anderson Building – You are forbidden to go onto the roof unless you have permission in writing from your Project Supervisor. He will tell you the current procedures.

Finally your first accident may be one we have not thought of yet. So be careful.

We believe the information provided in this handbook is correct at the date of publishing but may be subject to revision.

N.B. THIS HANDBOOK CAN BE SUPPLIED IN A VARIETY OF FORMATS TO SUIT YOUR NEEDS. PLEASE CONTACT THE DEPARTMENT FOR MORE INFORMATION

Safety Training and Regulations

Safety Convenor – Dr Brian McNeil

So that you and your colleagues can work in a safe and healthy environment you are required to follow some basic safety training. You may also be required to carry out more specialist safety training relating to the use of e.g. lasers, high voltages, compressed gases, special laboratory procedures etc. Your supervisor will advise you of any specialist training that you must do. If you ever feel that you need any training or further training, please discuss this with your supervisor or the Safety Convenor. The Department is required to provide the relevant training and to record the fact you have attended the necessary safety training courses.

1. You are contractually required to complete all of the safety training and the required documentation as detailed in the **Induction Training** document. You should receive this by email. Please follow and complete the instructions in this document which will lead you through the necessary steps. If you have not received this document by email, then you can access it from the SPIDER document store located on the bottom-left of the SPIDER login page: **docStore >> Physics >> safety - General Information >> all**.
2. Once you have completed your training, which should be within approximately 4 weeks of starting, you should complete the Safety induction training record for postgraduate students form. A copy of this form is included with this information package. It is also available as **Induction Training Record (PG)** from the SPIDER document store located on the bottom-left of the SPIDER login page: **docStore >> Physics >> safety - General Information >> all**. The completed form should be returned to the mail box of Lynn Gilmour opposite JA 8.33.
3. The University operates a security card system (the 'Red Card') for access outwith normal working hours (08.00-18.00 hours Monday -Friday). You cannot obtain a Red Card until all of the safety training has been completed and recorded. To obtain a Red Card contact Lynn Gilmour (JA 8.33), who will issue the application form which both you and your supervisor should complete and return.

ERASMUS SCHEME

Studying Abroad

The department has several Erasmus agreements that may allow postgraduate students to do part of their PhD project in a European University. Students interested should speak to their supervisors.

ADVICE FOR STUDENTS WITH SPECIAL NEEDS

The University is committed to supporting students with special educational needs, which may range from dyslexia to mental health problems. To this end the University has a dedicated unit, the Disability Service. Please refer to your University Handbook for further details and see <http://www.strath.ac.uk/disabilityservice/>

To ensure the department meets your needs as defined by the Disability Service, two Departmental Disability Contacts have been appointed. Should you have any questions then please do not hesitate to contact either Kirsten Munro (kirsten.munro@strath.ac.uk) or Dr T. Han (t.han@strath.ac.uk).

PEGASUS and MYPLACE

The University has developed its own information server known as PEGASUS that is used to provide services to both staff and students. Please refer to your University Handbook for further information. In addition to PEGASUS the University has its own information server, MYPLACE, and this is used to provide copies of lecture notes, assignments, tutorial questions etc. As with PEGASUS you will receive training on the use of MYPLACE in the first weeks of your course and information relating to MYPLACE can be downloaded from <http://classes.myplace.strath.ac.uk/>

PLAGIARISM

Please see the University Handbook and follow this link <http://www.tinyurls.co.uk/M8733> for guidelines on plagiarism. If you are unsure of any aspect of this, please contact the department.

ABSENCE

Please refer to the University Handbook and website for guidance on absence policy and procedures.

MOVING HOME

It is important to keep the University Registry informed of **any change in your address**, else important information might go astray. Changes of address may be updated through the University's Information Server PEGASUS and also contact Marionne regarding your new details.

DIFFICULTIES

If you find yourself with a problem or in difficulty the University has people and procedures in place to help (please refer to the University Handbook for contact details of all the main University services) but within the department help is also available.

You can go and see your Counsellor or Supervisor in the first instance. Do not delay getting help as often the problems are much reduced if tackled early enough. If they cannot give help themselves, they will often know of others who can help.

USEFUL WEB LINKS

<http://phys.strath.ac.uk/>

<http://phys.strath.ac.uk/information/people/people.php>

<http://phys.strath.ac.uk/information/whowhat/contents.php>

<http://bookings.strath.ac.uk/searchResults.asp?provider=CAPLE>

<http://www.supa.ac.uk/>

<http://classes.myplace.strath.ac.uk/>

