

UNIVERSITY OF
Southampton
School of Physics
and Astronomy

POSTGRADUATE HANDBOOK

INFORMATION FOR POSTGRADUATE STUDENTS

2010/11

Memo

To: New Postgraduate Students 2010/11 **From:** Prof P de Groot

Date: 2010/11 **Ext** 22110
E-mail pajdeg@soton.ac.uk

Re: *WELCOME!*

Welcome to the School of Physics and Astronomy. We hope that your postgraduate studies will be both stimulating and productive. These notes are intended to help you find your way around this school quickly and easily. However if you do have a query, do not hesitate to approach me, or other members of staff (academic, administrative or technical).

The attached Postgraduate Handbook will supply you with much of the formal information related to being a postgraduate student in our School. This includes:-

1. [Guide to Postgraduate Research Studies.](#)
2. [Information about Postgraduate Courses.](#)
3. [Computer Accounts and Inclusion on Listings Form](#)

We advise you to read these documents carefully. You will also be provided with a Safety Policy booklet, the *Hazard Assessment Form* should be completed in consultation with your supervisor and be returned to Colin Miles (School Manager, Resources) *before practical experimentation commences*. Even for projects where there are no foreseeable hazards the form should be returned.

Most communications nowadays are in the form of *email*; hence arrange to get an email address as soon as possible (complete the form in the back of the handbook - item 3 above) either on your research group network or on the departmental network.

Any postgraduates who may wish to work as demonstrators or markers for undergraduate courses must attend a training course and one is provide as part of your induction. You will then need to apply for a contract which you can do by visiting Schools finance office on level 3. Note that the maximum number of paid undergraduate teaching activities during any single academic year will not exceed the equivalence of six hours per week across the 24 taught weeks.

You should by now have completed online enrolment if you have not completed this process please do so now. You can enrol via the University web site, click on enrol and follow the instructions given.

We hope you enjoy your time at Southampton.

Peter de Groot

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School Office

One of the primary functions of the School Office is student support and guidance. We are happy to provide information and answer your questions. If you have concerns or issues and you are not too sure what to do, please contact the School Office, either in person, by phone or e-mail and one of us will be pleased to help. If we do not know the answer immediately we will find out or redirect as appropriate.

Our opening hours for student callers are:

09:00 – 13:00 & 14:00 – 16:30 Monday-Thursday

09:00 to 13:00 – Friday

You may send e-mail or leave voice mail messages at any time.

I wish you the very best for your studies and remember, the School Office staff are here to support you.

Best wishes

Wendy Slack

Telephone: 023 80 593957

Internal Extension: 23957

E-mail: wss1@soton.ac.uk

Deputy School Manager

- * All issues relating to Postgraduate Student Administration
- * Undergraduate and postgraduate Student Records and Examination queries

Members of the School Office with primary student related areas of responsibility identified:

Kim Lange

Telephone: 023 80 592068

Internal Extension: 22068

E-mail: ksl@soton.ac.uk

Marketing and Admissions Officer

- * All issues relating to both the under-graduate and post-graduate admissions
- * Careers

Jan Spencer

Telephone: 023 80 593956

Internal Extension: 23956

E-mail: jls@soton.ac.uk

Undergraduate Programmes Officer

- * Issues pertaining to undergraduate absence
- * Undergraduate absence monitoring and assignment handling
- * Undergraduate timetabling and room booking

Hannah Webb

Telephone: 023 80 599459

Internal Extension: 29459

E-mail: h.webb@soton.ac.uk

Administrative Assistant

- * Front desk support and student enquiries
- * General School Office administration

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Guide to Postgraduate Research Studies

1. Procedures for MPhil & PhD

The procedures outlined below apply to candidates for the degrees of **MPhil** and **PhD**, by full time or part time study.

2. Head of Graduate School

In the School of Physics and Astronomy, the Head of Graduate School (Professor Peter de Groot) has overall responsibility for postgraduate studies and. The Head of Graduate School coordinates admissions and student assessment, and advises staff and students on postgraduate matters.

Professor de Groot can be contacted on extension 22110, via internal mail or email: pajdeg@phys.soton.ac.uk. However you should approach your supervisor, advisor and/or Research Group's Graduate Tutor in the first instance, as they will almost certainly be able to advise you on any problems or queries.

3. Student Representative

Students are represented at the Postgraduate Committee by three postgraduate students; one from each research group. You will find a list of this years representatives on the physics web site.

4. Admissions

Before being forwarded for approval by the School Board, each individual candidate must be approved by the Postgraduate Admissions Tutor (Prof. P.A.J. de Groot) in consultation with the prospective supervisor. There must be assurance that the candidate is appropriately scientifically qualified, has acceptable command of English, and has adequate financial support for fees, maintenance and a realistic bench fee. There must also be assurance that the proposed research can be completed within the prescribed period and that adequate supervision and research facilities can be provided. Part-time candidature is only available to those unable to follow a full-time course of study because of other employment or domestic commitments, or for other special reasons (for example medical).

Candidates for research degrees will normally be registered for the degree of MPhil initially. Candidates who make adequate progress may be permitted by the School Board to transfer to the degree of PhD ([see para. 6 below](#)).

5. Supervision

Each student will be supervised by one member of Academic Staff of the School. The relationship between student and supervisor is critical and both parties have responsibilities to make it successful. For this reason (other than in exceptional circumstances) it is recommended that no staff member should undertake to commence supervision of more than two new students engaged in full time research in any one year, nor to supervise more than six students engaged in full time research at any one time. Students on Nominal Registration, by definition, no longer require supervision, but it is recognised that continued guidance will be given during the final stages of thesis preparation.

Note: a) The supervisory team shall consist of two or more members who may act jointly in giving guidance to the student, but one of these **must** be named to the Head of

Graduate School as having prime responsibility for a given student and another will be a personal advisor.

- b) Students in the Southampton High Energy Physics Group (SHEP) usually register with a nominal supervisor during the first year, which is dominated by further formal training. They also have a personal advisor during this time. If progress is satisfactory these students are assigned a research supervisor at the end of the first year.
- c) All academic staffs are encouraged to follow the EPSRC/STFC guidelines on research student supervision. Further information is available from the Research Councils webpage's: <http://www.epsrc.ac.uk/> and <http://www.stfc.ac.uk/>

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5.1 *The responsibilities of the supervisor include the following:*

- i) Defining the research topic. Where this is not fully prescribed in advance, the supervisor must consult fully with the student, agree upon the area of work and inform the advisor and Head of Graduate School. This should occur as soon as possible after initial registration except for SHEP students for which a decision on a research topic is normally delayed until the end of the first year.
- ii) Guidance about the nature of research and the standard expected, about the planning of the research programme, about literature and sources, the maintenance of records, attendance at taught courses, about techniques (arranging instruction where necessary), commercial confidentiality and about the dangers of plagiarism.
- iii) Maintaining contact through regular meetings, minimum 30 per year.
- iv) Being accessible to the student at appropriate times when advice may be needed.
- v) Giving detailed advice on the necessary completion dates of successive stages of the work (including progress reports) so that the whole may be submitted within the scheduled time. (This is now of even greater importance for both the students and the School, as most Research Councils require submission of a thesis before the end of the 3 or 4 year studentship period.)
- vi) Requesting written work as appropriate, and returning such work with constructive criticism within a reasonable time.
- vii) Arranging for the student to talk about his or her work at seminars and conferences.
- viii) Advising, encouraging and assisting with publication and, where appropriate, patenting of the results of the work.
- ix) Ensuring that the student is made aware of inadequacy of standards of work that is below that generally expected.
- x) Giving guidance and comment on a draft of the submitted thesis, within the general principle that the thesis should be the student's own work.
- xi) Responsibility for the student's observance of the safety codes of the University and of the School by discussing safety aspects of the student's work before work is commenced, arranging for any necessary safety training, and delegating the responsibility for safety to another staff member during absences of more than

one week. Guiding the student in completion of the hazard assessment form and passing the form on to the Safety Officer (Mr C Miles email: c.e.miles@soton.ac.uk).

- xii) Responsibility for liaising appropriately with the Advisor and as defined by the Reporting Schedule (see Para 7.0 below).
- xiii) Responsibility for forwarding to School Office copies of any correspondence pertaining to chasing PG students who are failing to meet their responsibilities as defined below.

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5.2 *The responsibilities of the Advisor*

- i) To meet with the student at least once a year ([see section 7.0](#)) and review progress.
- ii) To be accessible to the student and/or supervisor when advice is needed, keeping in mind the needs of the individual student;
- iii) To provide advice and guidance as necessary on the planning and development of the research programme and standard of work expected.
- iv) To participate in the student viva examination;
- v) To participate in the end of year reporting schedule ([see section 7.0](#)).

5.3 *The responsibilities of the student include the following:*

- i) Showing commitment to the research project and programme of studies;
- ii) Discussing with the supervisor, and advisor when appropriate, the type of guidance and commitment found to be most helpful, and agreeing and adhering to a schedule of meetings;
- iii) Agreeing with the supervisor the amount of time to be devoted to the research and the timing and duration of any holiday periods;
- iv) Analysing, with assistance from the supervisor and, as appropriate, advisor, any initial or on-going training needs with respect to research and generic/transferrable skills, and participating in appropriate training activities as advised by the supervisor and as appropriate advisor;
- v) Agreeing a schedule of meetings with the supervisor.
- vi) Taking the initiative in raising problems or difficulties, however elementary they may seem.
- vii) Maintaining the progress of the work in accordance with the stages agreed with the supervisor, including in particular the presentation of written material as required in sufficient time to allow for comments and discussion before proceeding to the next stage, and addressing seminars.
- viii) Providing reports as outlined below. ([Para.8 below](#)).

- ix) Deciding when they wish to submit their thesis, taking due account of their supervisor's opinion, which is, however, only advisory.
- x) Observing the safety codes of the University and of the School, undertaking relevant safety training, agreeing safety procedures for hazardous work with the supervisor and not deviating from these without the approval of the supervisor. In consultation with the supervisor the student should complete a hazard assessment form.
- xi) Attending conferences and participating in staff and student seminars, presenting work where appropriate and as guided by the supervisor.

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5.4 Student Complaints - Resolution of difficulties between the Student and Supervisor

Student Complaints

Student complaints are relatively uncommon however should you exceptionally feel that you are unable to discuss the nature of your complaint with either your supervisor or advisor you are asked to contact the Head of Graduate School:

Professor Peter de Groot,
Room 5021
Level 5, Building 46

Tel: 023 80 592110
Internal Ext: 22110
e-mail: pajdeg@phys.soton.ac.uk

Prof de Groot will convene a one to one meeting with you in order to determine the nature of the complaint and formulate a means to affect a satisfactory outcome. At this stage your complaint is considered to be informal and the University complaints procedure has not been invoked.

What happens next is very much determined by the nature of the problem i.e. pastoral, intellectual etc. In the first instance Prof de Groot will normally try to resolve the issue through discussion with supervisor and, if necessary, also involving the student advisor.

Should this not be successful, or Prof de Groot judges that it is unlikely to result in a satisfactory outcome; he will further discuss the situation with the Head of the appropriate Research Group in order to devise a method of resolution. This could involve a change of supervisor where there are personal problems of compatibility. If the differences are intellectual, then the Head of Group or an appropriate deputy will be requested to review the situation and make recommendations for a satisfactory outcome. This reviewer may be the advisor. The reviewer will have an appropriate understanding of the scientific area, whilst being suitably detached from any possible personal situation.

Resultant reports and recommendations will be treated confidentially and will normally be scrutinised by the Head of School.

In the unlikely event that if, after the above procedure has been invoked, a student feels they still have cause for complaint they should consult the University Complaints procedure published on the School Intranet:

http://www.phys.soton.ac.uk/pgadmin/files_for_phd_webpage/Complaints_and_Appeals_regulations_202008.doc

5.5 Overseas students

Often overseas students will have additional needs, particularly in the settling-in period. A senior postgraduate student should be asked by the supervisor to join him/her in making each new overseas postgraduate welcome and in ensuring that they be introduced to relevant people and procedures, so that they can settle in with minimum difficulty. International students are advised to apply to the Home Office in plenty of time for the extension of their visa. The Student Visa Guidance Team will assist students in applying for visa extensions under the new Tier 4 regulations, they can also advise students and academic visitors on matters concerning post study work visa's, requirements for travel while studying, visitors visa's and dependents visa's. Students wishing to make an appointment with one of the advisers must do so by contacting the Student Services Centre either in person or at 02380 599599, email SSC@soton.ac.uk.

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6. Transfer from MPhil to PhD

The School Board approves transfer from MPhil to PhD where it is satisfied by a submission from the Head of Graduate School that the student shows adequate progress and promise.

Students are assessed by oral examination of a written report Between July & September in 2nd year ([see Para. 8.2.](#)). In addition, the head of each research group may specify other requirements for postgraduates in their groups, for example attendance at lecture courses or seminars.

The examiners will report on this assessment to the Head of Graduate School and will specifically recommend one of the following:

- i) progress is acceptable and the candidate should transfer to PhD;
- ii) the report should be revised and resubmitted by a specified date;
- iii) registration should remain at MPhil;
- iv) registration of the candidate for a higher degree should be terminated.

All reports from examiners will be considered individually by the Head of Graduate School, who may also (in exceptional circumstances) interview the student. Recommendations (i) or (iv) will be communicated by the Head of Graduate School to the School Board and to the student, who has the right of appeal in the first instance to the Head of School and, as a last resort, to the Dean of the Faculty.

7.0 Post Graduate Student Reporting Schedule

Important Note: The following schedule only applies to the standard entry point for postgraduate students i.e. September/October. Any student who commences study at a non-standard point of entry i.e. January will be provided with a personalised Reporting Schedule that covers their three years of study. Copies of the personalised Reporting Schedule will be made to the Supervisor and Advisor.

Students who have to suspend their programme of study at a non-standard point will also be provided with a personalised Reporting Schedule upon their return to studies.

7.1 Year I

First Month
By October 31st

Student and Supervisor Meet
- complete Induction Preliminary Questionnaire
- ensure that you have discussed your training needs and booked on the necessary FESM generic skills training sessions
- agree and document schedule of meetings for the academic year

Between 4th & 6th month
January – March 30th

Advisor and Student Meet
Mid Term Report Meeting

Between 8th and 11th month
May – August 30th

Deadline for student to submit first year report to supervisor = 15th July.

Supervisor responsible for completing the 'Supervisor End of Year 1' Report (based on the students report & regular meetings with student) and for liaising with student Advisor to arrange the end of 1st year viva examination

It is anticipated that a viva examination will take place before the 15th September.

Absolute deadline for completing sign off of First Year Reports (Supervisors & viva report) to School Office is the 15th September of any given year

7.2 Year II

By Christmas vacation

Student to provide supervisor with detail of title and bullet points of proposed poster for supervisors interim progress report/comments

9 March 2011

Poster Day

The Head of Graduate School will report outcomes of the Poster Day to PG Student Committee

By end of March
Supervisor provides Poster Day feedback to students, agrees a submission date for the student's end of year report and thesis plan, and liaises with the Advisor reference timings for the viva examination,

Between 8th and 11th month
May – August

Deadline for student report submission = 15th July

A Year 3 Thesis Plan must be included/appended to the Year 2 Report i.e. chapter and action plan

Supervisor responsible for completing the 'Supervisor End of Year 2' Report (link), based on the student report, Poster Day outcome and regular meetings with student, and liaising with the students Advisor to arrange the end of 2nd year viva examination.

It is anticipated that a viva examination will take place before the 15th September. A decision whether to upgrade the student's registration to PhD is made at this point.

Absolute deadline for completing sign off of First Year Reports (Supervisor & viva/upgrade report) to School Office is the 15th September of any given year

7.3

Year III

By end of January

Supervisors & students meet to review progress against plan (submitted with 'end of Year 2' Report) and identify timeline for completing either 'intention to submit' forms (*must be submitted before 31 Jan if student wishes to attend graduation in the same year*) or 'transfer to nominal registration' forms.

9 March 2011

Poster Day

The PG Tutor will report outcomes of the Poster Day to PG Student Committee

By the end of March

Supervisor gives Poster Day feedback to student

Between 8th and 11th month
May – August

Deadline for student report submission for students not submitting by the end of their 3rd year = 15th July

Supervisor will communicate the completion of a student's thesis to the School Office or will complete a supervisor's 'End of Year 3' Report (based on student report, Poster Day outcome and regular meetings with student.) The supervisor will ensure any necessary viva examination (for students with 4 year funding

or students submitting) or complete a 'transfer to nominal' recommendation form for students 'writing up' in their 4th year.

Absolute deadline for supervisors to complete and sign off the supervisor's 'End of Year 3' report & 'transfer to nominal' registration forms to School Office is the 15 September.

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8. Reports on Research (full-time students) ([part-time students see 9.](#))

8.1 *First year*

10 months from the start of PhD/MPhil studies all students will submit a written **First Year Report**. The report should be a type-written document, not exceeding 2000 words, and is expected to provide a brief description of the proposed programme of research set in the context of the general field of study in which the programme lies. The student's Supervisor, will arrange for this report to be examined internally. The student will be orally examined on the subject of the report, on the research upon which it is based and on the student's background knowledge of related areas of science. A formal report will then be submitted to the Postgraduate Administrator (normally within one month)

8.2 *Second Year*

By the middle of July of any given year the student will submit a written **Second Year Report**. The report should not exceed 5000 words and is expected to concentrate on the research programme and its results. In addition, the student should prepare, in consultation with the supervisor, a 1 page, chapter by chapter outline of the thesis which includes a timetable for completion of the work. The Student's Supervisor will then arrange for an oral examination of this report by the students advisor and one independent member of staff, at which the student will be asked to review the process and to discuss the plan and timetable for the third year. A formal report giving the result of this examination will be submitted to the Postgraduate Administrator (normally within one month) and include a recommendation, as outlined in [paragraph 6](#).

8.3 *Third Year*

Normally, by the end of the third year the student should have completed his or her thesis and the supervisor would communicate this fact to the School Office. However, in the event that the completed thesis is not available, the student must present a brief report to his/her supervisor at the end of the third year of study with sufficient information for the supervisor to give the Postgraduate Administrator a written report. This report will be a progress report in respect of students whose funding has been extended or a report requesting transfer to Nominal registration.

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9. Reports on Research (part-time students)

The supervisor will report annually to the Postgraduate Administrator on each part-time student under his supervision. These reports by supervisors will be based on reports submitted annually by the student, normally by July 15th of any given year. The student's report will be considered by the supervisor (and the Advisor) who will submit a written statement to the Postgraduate Administrator (normally within one month).

The form of the annual report by the student to the supervisor is left to the discretion of the supervisor. However, **no later than** the 10 month of the **third** year of study the student should submit a comprehensive report of the form required for the MPhil/PhD Transfer Report ([see section 8.2](#)). This will be formally examined with an oral, to assess the student's progress, even if transfer to PhD is not (yet) contemplated. Transfer from MPhil to PhD may take place at any stage following examiner's recommendations based upon a suitable comprehensive report submitted by the student

10. Continuation of Studentships

At the end of the first year the supervisor is asked by the Research Councils to report on the progress of each student holding a Research Council Studentship. This report includes recommendation on continuation or termination of the Studentship. A similar report, but to the University or Faculty, is required for continuation of University/Faculty Studentships.

Except in unusual circumstances, these reports are based on the same assessment as specified in [sections 6](#) and [8.1](#).

The University/Faculty Studentships may also require a report from the student and supervisor at the end of the second year.

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11. The Thesis

Full instructions to candidates preparing theses for MPhil and PhD are published by the University in a leaflet entitled [Completion of Candidature](#) and available online or from the School Office. It is important to note that at least two months written notice of [intention to submit](#) a thesis must be given to the School Office; this notice must include the title of the thesis.

12. Duration of Candidature: Transfer to Nominal Registration

Full time students must submit a thesis within four years of initial registration (part-time students are allowed seven years). Extensions of candidature beyond these limits are not automatically permitted and require individual approval by the School Board; the student (supported by his supervisor) must submit a [request for extension on the prescribed form](#), with substantial supporting evidence **before** the end of the period of candidature. Students must remain in registration until submission of their thesis, even if this extends to beyond the period of grant support. Suspension of registration may be approved by School Board in justified cases recommended by the Head of Graduate School; such a period of suspension would not be included in the overall time limits referred to above.

Full fees are payable by any student using School facilities, so that a student must aim to complete his or her thesis within the period of grant support to avoid personal liability for fees. Students who can satisfy the School Board through the Head of Graduate School that no further supervision is required (i.e. students whose supervisors submit a written report to the School Office, normally by 15 September), may be transferred to Nominal Registration and pay only nominal fees.

13. Regulations Concerning Research Degrees

The definitive university regulations governing entry to degrees, duration, candidature, supervision of thesis and examinations are given in the [University Calendar](#).

14. Useful information

University travel insurance (including medical assistance when abroad)
<http://www.soton.ac.uk/finance/insurance/travel/index.html>

Postgraduate Training Courses 2010/11

As a Postgraduate Research Student in the School of Physics you will need to acquire both the general skills of a Research Scientist and the more specialist knowledge appropriate to your area of research.

Training in basic research skills such as writing publications and presentation at conferences will be provided on a Faculty basis. More specialist courses designed to meet the particular needs of each of the main research groups are provided throughout the year. The coordinator for the postgraduate lecture courses in each of the research areas is as follows:-

Astronomy	Dr P Uttley
Quantum and Functional Matter	Prof. M Kaczmarek
Theoretical Physics	Dr A Belyaev

You may also find it valuable to select modules from those courses offered by groups other than the one in which you are registered. We encourage such interdisciplinary training. *Students are strongly advised to discuss their selection of courses with their supervisors.*

1. Astronomy Group (Dr P Uttley)

All astronomy postgraduates must attend a course on “Advanced Topics in Astrophysics”. This covers research skills and modern topics in astrophysics. In addition, there are a number of undergraduate courses available to cover gaps in astrophysical background.

Those who may have missed some of the key basic topics in Astrophysics or in the instrumental interests of the group should make a selection of two courses from the following list, in consultation with their supervisor:-

PHYS3011	Photons in Astrophysics	Semester 1
PHYS3010	Stellar Evolution	Semester 2
PHYS2013	Galaxies	Semester 1
PHYS3009	Applied Nuclear Physics	Semester 2
PHYS6005	Cosmology	Semester 1

Each semester students will give a talk about their own, or closely related work, and are expected to attend the weekly Astronomy Colloquia series given by invited speakers. At the end of the first year students will write a report on their work which will form part of their formal assessment.

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2. Quantum Light & Matter Group (Prof M Kaczmarek)

The programme most appropriate to your study should be mapped out with advice from your supervisor.

All new Postgraduate students, except for those on theory projects, will need to attend the 'postgraduate electronics and machine shop skills course' in Semester 1

Students who have not attended the following undergraduate level subjects may take the following courses:-

<u>PHYS3003</u>	Light and Matter
<u>PHYS3004</u>	Crystalline Solids
<u>PHYS3005</u>	Photonics, Lasers & Spectroscopy
<u>PHYS6003</u>	Advanced Quantum Physics
<u>PHYS6012</u>	Coherent Light, Coherent Matter
<u>PHYS6014</u>	Nanoscience: Technology and advanced materials

Postgraduate lectures on Magnetism held during semesters 1 & 2 on Wednesdays, 2.00 – 3.00 pm in Teaching Room 3

And any relevant lectures held by the Optical Research Centre

OPTOELECTRONICS RESEARCH CENTRE

A programme of postgraduate lectures in Optics is arranged during the first academic year. Details are available from Eve Smith in the ORC (Bld 46, Rm 4013, email: es@orc.soton.ac.uk). Physics postgraduate students are welcome to attend but should contact Eve first. The aim of these lectures is to give an insight into different research areas and widen the field of interest.

Research students will also be required to attend the weekly series of research seminars which will include presentations by both internal and external speakers.

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4. Theoretical Physics Group (Dr A Belyaev)

Term 1

Autumn Term

Symmetries	Dr. N.J. Evans	15 Lectures	Details to be notified
Group Theory	Dr. J.M. Flynn	15 Lectures	Details to be notified
Quantum Field Theory I		15 Lectures	Details to be notified
Quantum Field Theory II	Dr.A. Belyaev	15 Lectures	Details to be notified

Spring Term

Quantum Field Theory III	Prof. D Ross	15 Lectures	Details to be notified
Quantum Field Theory IV		15 Lectures	Details to be notified
Standard Model of Particle Physics I	Prof. S. King	15 Lectures	Details to be notified
Standard Model of Particle Physics II	Dr. S. Moretti	15 Lectures	Details to be notified

In the Summer Term there will be short courses on specialised topics including some of:

Neutrinos and GUTs
Supersymmetry
Cosmology

Lattice Gauge Theory
 String Theory
 Phenomenology

Details of lecture times and rooms will follow. In general, we expect all students to attend these courses. However, this requirement may be waived for those with sufficient prior preparation. The courses have associated problem sets. Over the Christmas and Easter vacations you will be given a longer problem to work on and write up in the style of a research paper.

The coursework will provide grounding in the field theory techniques necessary to undertake research work in high energy physics, including: path integral and canonical quantisation methods, practical renormalisation, group theory, QED and QCD, the standard model (including spontaneous symmetry-breaking and flavour physics), supersymmetry, modern renormalisation group techniques, and an introduction to the latest developments in string- and brane - theories.

Each week we have an informal group seminar on Thursday lunchtime and a formal seminar with an invited external speaker on Friday afternoon. **All postgraduate students are required to attend both.** In addition, we will ask each student to give at least one talk each year in the Thursday series (These talks may be based on the Christmas and Easter problems) [[see above](#)].

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Physics & Astronomy Computer Accounts Request Form

The following information is required before your School computer account can be setup. The information will be used to give you access to relevant School computer systems and include you on School email and phone databases and email distribution lists. Please take this completed form to the IT Group in rooms 4117/4115 who will complete Section 2.

Section 1 Completion by All Applicants (PLEASE PRINT)

Surname (Family Name):		First Given Name:	
Other Initials:		Mr/Ms/Dr/Prof:	
Job Title:		Telephone Ext:	
Office Room No:		University ID No:	
Research Group:		Supervisor or Line Manager:	

Visitor Section (Additional Information Required)

Home Institution Name:		Institution Email Address:	
How Long is Your Visit:		Note: Your user accounts will be deleted when you leave. See School regulations.	

Completion by ALL Applicants (You must supply your University ID number/Login ID)

Signature:		University Login ID	
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Data Protection Act: Information on this form will be held on computer systems. Other information relating to you or produced by you may also be stored on various types of media. User accounts will be deleted from

fixed media in accordance with the School regulations. See web link below. By signing this form, you agree to this and to be bound by the 'University Regulations for the use of Computers and Voice and Data Communications Networks', 'University Guidelines for the use of Information Systems' and School amendments to any of these. See www.phys.soton.ac.uk/comsup/deptregs.htm for information and related links. **Please note:** Undergraduate Students will not normally be supplied with an account on School systems or services.

Authorisation Signature

Head of School, Group Head or Supervisor only	Print Name	Signature
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Section 2 Completion by School IT Group Only

Active Directory (AD) Username			
Fixed University Email Address			
Long University Name			
School Login Name if different			
Unix ID number	iSolutions:	School:	
Other Contact Info			
Signed off by IT Group		Date:	
Setup Progress	AD	Astro	Hep QLM Dist-lists Database Web

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