EPSRC Centre for Doctoral Training in High-Performance Embedded and Distributed Systems (HiPEDS)

Integrated PhD Programme
Student Handbook 2018–2019

Departments of Computing and Electrical and Electronic Engineering

Imperial College London

Last updated September 2018

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1 Introduction

This is the fifth year of the EPSRC CDT in High Performance Embedded and Distributed Systems (HiPEDS). We hope that you will find the next four years studying for your PhD degree stimulating and enjoyable. Research work can form the basis of a very rewarding career and a successful PhD is the ideal way of starting out. The themes of HiPEDS are some of the most rapidly developing disciplines with numerous opportunities for innovative and original work and the departments are pre-eminent in many branches of computing and electrical and electronic engineering.

The following notes have been put together to assist you in planning and organising your work and to introduce you to the facilities available. We hope you find them useful and that you will be able to play your full part as a member of the academic community. If at any time you have any doubts or queries feel free to raise them with the appropriate person.

We have two HiPEDS programmes running in 2018-2019. The first programme is for students who started in 2015, and who have completed an MRes degree as part of the programme, whereas the second programme is for students who started in 2016 onwards on the integrated PhD program. Information about the MRes is omitted from the handbook as that has now passed.

There are therefore, in effect, two handbooks, one for the first programme (called MRes+PhD) , and one for the second programme (called Integrated PhD). Please make sure you read the right document! *This document is for the Integrated PhD programme (2016 onwards).*

The first year of the programme includes various training activities, including opportunities to practice research skills, a course in Cyber-physical systems specially put together for HiPEDS students, and experience of team working. You will have plenty of time to start your PhD research project, and will conduct a literature survey of your research topic and area. These notes cover the programme and include useful general information. In Section 6 there is a description of the programme.

The CDT programme will involve various (small) outreach and public engagement activities, sometimes with schools and sometimes with industry or other bodies. You will have training courses in various professional skills, such as presentations, team working, project development, and opportunities for industrial internships. Because the PhD programme is funded for four years, longer than a standard PhD, there is additional time for these endeavours, so you need not worry your PhD will be diluted. In fact, it will be enhanced by new experiences.

Any expanding scientific discipline looks to its PhD students to provide a rich source of new ideas. We are sure that you will enjoy your time here and will contribute substantially to developing the subject.

2 HiPEDS Introduction

Welcome to HiPEDS! The Departments of Computing and Electrical and Electronic Engineering are very proud to be hosting the HiPEDS CDT. During your PhD you have an opportunity to meet, and study under, a large number of internationally renowned experts in all topics related to HiPEDS, and more.

Your supervisor may advise you to attend a particular course if they think it would be useful for your studies, but you are also welcome to attend courses from either department if you wish. There is state-of-the-art equipment and software available and you will have your own desktop computer and desk. For your first year, you will have a desk in the bespoke CDT space provided by the College, which is on Level 4 of the Library.

The CDT Manager has responsibility to oversee the running of the CDT programme and to ensure that everything is going smoothly. She is always on hand to discuss both technical and administrative aspects of the programme, and will meet with you regularly.

It is very important that you check your email frequently. A good deal of information may be sent via email. Also the HiPEDS and DoC and EEE departmental web pages are very good source of information about all aspects of the PhD. A list of various useful web sites is given later in these notes.

There will be four cohort mentors for the CDT, who will provide general support. If you are having any academic or personal difficulties of any kind, please contact one of them as soon as possible. You will find their contact details later in these notes. In particular, if you have any medical conditions that may affect your study and/or assessments, please let them know immediately. Whatever problems you may have, remember that there is always someone who can help you so do not be afraid to come forward. Your PhD supervisor will be able to give guidance and direct your research literature reading.

3   Staff and Special CDT responsibilities

Apart from the CDT Director, Deputy Director, CDT Manager, whose details are on the front page, other staff with special CDT responsibilities are in the list below.

Prof Daniel Rueckert	Head of Department of Computing (DoC)
Prof Eric Yeatman	Head of Department of Electrical and Electronic Engineering (EEE)
Prof Paul Kelly	Director of Industrial Liaison
Dr. Pantelis Georgiou	Cohort Mentor EEE, p.georgiou@imperial.ac.uk, EEE room 902
Dr. Thomas Heinis	Cohort Mentor DoC, t.heinis@imperial.ac.uk, DoC room 423
Prof. Eric Kerrigan	Cohort Mentor EEE, e.kerrigan@imperial.ac.uk, EEE room 617
Dr. Krysia Broda	Cohort Mentor DoC, k.broda@imperial.ac.uk, Huxley room 378
Prof Sophia Drossopoulou	Postgraduate Tutor (DoC) s.drossopoulou@imperial.ac.uk, Huxley room 559
Dr. Imad Jaimoukha	Postgraduate Tutor (EEE) i.jaimouka@imperial.ac.uk, EEE room 1113

4   You and your Supervisor

The primary responsibility for organising your research work during your PhD lies with you. However, it is your supervisor's responsibility to guide your research, point you in interesting directions, monitor your progress and generally provide moral and technical support.

Supervisors differ in their methods but you should expect to see your supervisor once a week. Feel free to contact him or her at any time if you have a problem or are unsure how to proceed. You will find that you can obtain the most benefit from meetings with your supervisor if you prepare some material for them to read or formulate some specific questions you would like to discuss.

During the first term your supervisor may appoint a 2nd supervisor, or you may have a co-supervisor. The role of a 2nd supervisor is twofold; to attend your various assessed presentations (and others throughout your PhD programme we hope), and, more generally, to keep in touch with your progress. A co-supervisor will share overall responsibility for your PhD supervision with your supervisor.

You have been assigned a supervisor from the start of your four year programme and we expect that normally this person will continue to supervise your PhD. But occasionally it may happen that your focus of interest changes slightly or your research leads you into avenues that are outside your supervisor's areas of interest. In this circumstance a change of supervisor, or co-option of a co-supervisor may be appropriate. Discuss it first with your supervisor if you can, and then involve one of the Cohort Mentors and any other potential new supervisors.

You should work hard to build up a good relationship with your supervisor, but it does occasionally happen that you find it impossible to work together. Either a cohort mentor or one of the postgraduate tutors can be approached in such a circumstance.

PhD students are a vital part of a flourishing research community. You should do your best to participate as fully as possible in the academic life of the Departments. You will find that informal discussions with your colleagues play a large part in your education. We hope that your first year location in the Library CDT space will facilitate this. Thereafter, you'll be located within the department of your supervisor.

5 Postgraduate Tutor and Cohort Mentor

The Cohort Mentors are responsible for providing pastoral support for CDT research students and they are available to discuss any matter, personal or academic, in confidence. At least one cohort mentor will not be your supervisor. The role of a cohort mentor is that of a trusted advisor who can provide counsel, encouragement and career advice, and generally take an interest in your development. The mentor is independent of your supervisors and takes no responsibility for performance or assessment of your progress. Mentors may also organise social and other events. Where students need more pastoral support the mentor may refer them to one of the Postgraduate Tutors, one in each department, who may also be consulted in confidence.

6 Timetable for the CDT PhD

It is difficult to set out a fixed timetable for PhD work as there are so many variables and variations but, however it is structured, it is essential that some planned programme of work be followed. Failure to complete a PhD is often not due to lack of talent, but more to do with a failure to plan work sensibly and tackle the more mundane activities, such as writing up.

The College and the Department impose certain formal milestones, which are outlined here. The Department strongly advises students to plan for completion of the PhD (i.e. submission of the thesis) by month 48. If you are worried about your progress, talk to your supervisors, Cohort Mentor or a Postgraduate Tutor.

Here is general outline:

Year 1

- Familiarisation with the research area, reading papers, identifying problem areas, formulating tentative solutions/advances.

- Team work plays an important part in the CDT. In the first term you will complete a group project, sponsored by a HiPEDS Industrial Partner (this year it is Royal Mail) and with an outreach element.

- There will be an Academic Writing course commencing late in term 1 and continuing in the first half of term 2 to give you experience in reading and reviewing papers, and in leading discussions.

- During this year and the next you also need to complete at least four Imperial Graduate School skills courses, two of them by the end of year 1. The Communicating Science workshop run by the CDT in the autumn of year 2 counts as one of these, as does the Public Engagement workshop, also run by the CDT in spring of year 2. I would also recommend you consider the various "Retreat" workshops (counts as 2 courses), which give an intensive, (and fun) two days focussing on different themes. They give you an opportunity to work and communicate with students in different disciplines. Of course, you are welcome to attend more than 4 courses, and can choose your own options from the Graduate School website (see Section 7).

- At the end of your first year you should have identified quite closely the area in which you wish to work and have developed various ideas on which your thesis could be based. You will have completed a substantial literature survey of the area, and already started on your PhD research project, investigating some aspect of your ideas. You will have an opportunity to present your work to your supervisor, external assessor and others in a mini-workshop at the end of year 1. For this you will write a research paper and your assessors will ask various questions about your work. This is called the *Early Stage Assessment* (see Section 7).

Years 2 and 3 of the PhD

- In these two years you will be carrying out the bulk of your research or innovative work, developing solutions, establishing primary results, writing implementations or applications, and drafting substantial parts of your thesis.

- You may choose to complete a three month internship in industry or at a research institution, that is related to your PhD, or indeed to give other experience in applications of your work. We hope you will write some research papers, and be able to present them at conferences.

- During this year your cohort will join in a creativity event off-campus. It is a two day event and we try to run it jointly with other CDTs so you can meet and mix with new people.

  We also invite you to complete a public engagement activity of your own choosing, lasting for approximately one week. Further information about this activity will be given in due course, but in outline it might take a number of forms. For example:

  > A stand at a public science festival
  > A brochure explaining the breadth of research in HiPEDS to a general audience
  > Resources for teachers
  > Help teaching programming to young school children
  > Help with Computing or engineering summer schools for children
  > Taught sessions in-school or on-campus for under-18 students
  > A MOOC-like online video and/or interactive activity - could be about your research
  > And no doubt many others

- By the middle of your third year you should know what your thesis will contain and be able to draw up a realistic plan for the remaining time, demonstrate that you can complete everything, including writing up, by the end of your fourth year.

Year 4

- Completing your research and writing up, even if you have been very successful in accumulating material, is going to need at least four months of dedicated effort towards the final production of your thesis.

- Writing up your thesis is a substantial task. It always takes longer than you imagine and can be a daunting activity if you leave it all to the last moment. It is vitally important that you get into the habit of writing things down as you go along. This will help to clarify and communicate your ideas and build up a file of material that can be incorporated into your final thesis. If you enter the fourth year of the CDT without such a source your chances of successfully writing up are reduced. You will find that once you start to try and write down ideas you thought were fully worked out, clarification or expansion is required; the sooner you discover this the better. You will be given lots of guidance through various research skills courses.

7   Formal milestones

Besides wanting all research students to obtain the maximum benefit from their studies, the Departments and the College come under considerable external pressure to ensure that PhDs are completed in their allotted time. Failure to meet these deadlines brings financial and research rating penalties to the Department and the College and it is inevitable that some of this pressure will be reflected on to you. For these, and many other reasons, there is a formal review procedure and deadlines for all research students. The deadlines are listed below. For CDT students we have an obligation to report annually to EPSRC on progress. The studentship can be withdrawn if that report is not satisfactory.

6 months	You will complete a **Literature Survey (LS)**, which will form part of your first year review (the Early Stage Assessment).
12 months	Students are required to complete a satisfactory **Early Stage Assessment (ESA)** in order to continue as a PhD student. The ESA consists of a paper and presentation as well as the Literature Survey carried out at 6 months.
27 months (of PhD)	Students are required to complete a satisfactory **Late Stage Review (LSR)** in order to continue as a PhD student. The exact form of this is still to be decided. Students must also complete the requisite Professional Skills Development courses (or alternatives run by HiPEDS) prescribed by the Graduate School (GS). See below under *Graduate School Professional Skills Development Programme.*
48 months	End of CDT programme. It is anticipated that normally all students will submit a thesis at the end of the 48 months of funded CDT programme (excluding any interruption of studies for internship or other reasons).

Please note that the College regulations state that full-time research students failing to submit within 48 months of registration (excluding any interruptions of study) are not normally permitted to enter the degree examination. The examination has to be effected (form of entry submitted) normally no later than 40 months after initial (PhD) registration Students who fail to do so may be refused submission.

Graduate School Professional Skills Development Programme

All PhD students are required to complete a number of Graduate School Professional Skills Development courses as part of their PhD programme. This requirement exists in order to ensure that all students receive some training in generic transferable skills while at Imperial and have the opportunity to engage with fellow students in College and elsewhere. The GS requirement includes at least two courses in year 1 and a total of four courses by the end of year 2. Two of the courses are allowed to be CDT sponsored professional skills courses that have been recognised by the Graduate school. The Communicating Science course and Public Engagement workshop (run by the CDT), together with one two day retreat run by the Graduate School would cover this minimal requirement, but you are welcome to sign up for other, or additional, courses if you wish.

For more details about the programme and the current set of requirements see:

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http://www.imperial.ac.uk/study/pg/graduate-school/professional-skills/
doctoral/
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English Language Proficiency Test

All students whose native language is not English are required to take a compulsory test at the beginning of the first PhD year devised by the English Language Support Programme. Depending on their performance, they may be asked to take some further courses in English. This is for your benefit and is free of charge. Students who have a UK undergraduate degree are exempt. Special cases can be made to the cohort mentors via the PhD Programme Administrator.

8 Plagiarism

The Graduate School's online Plagiarism Awareness course is compulsory for all PhD students. Successful completion of the course will be recorded by the Graduate School and completion of the course will be marked on student transcripts.

You are required to self-enrol onto the course which is available via Blackboard. Instructions on how to enrol onto the course can be found on the Graduate School's Plagiarism Awareness Online Course webpage at

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http://www.imperial.ac.uk/study/pg/graduate-school/
professional-skills/doctoral/onlinecourses
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The course will take approximately 1.5 hours to complete but can be saved and returned to at a later date. There is no limit to the amount of times you can take the course as it can be accessed anytime, so there will always be an opportunity to refresh understanding.

9 Overview of PhD Milestones

The College and HiPEDS impose certain formal milestones, which are outlined here. HiPEDS strongly advises students to plan for completion of the PhD by month 48. If you are worried about your progress, talk to your supervisors, mentor or the CDT Manager.

10 Literature Survey and Thesis Confirmation (6 months)

During the first six months of your PhD you will complete a literature survey of relevant research in your PhD topic area. This will result in a document (approx. 25 - 50 pages) and a 20-25 minute presentation to your supervisor and an assessor, who will have approximately 10-15 minutes for questions. It will form part of the formal Early Stage Assessment Milestone, to be completed by 12 months.

In addition to the report, you will include a brief report on your activities and achievements so far, and a research plan for your PhD drawn up in consultation with your supervisor. Your supervisor will also discuss progress with you. This part of the milestone generally aims to ensure that you and your supervisor are engaging in an coherent programme of work.

The following are suggestions for what you might include in the summary part of the report:

- the PhD problem overview

- an overall research plan for your PhD, including details for the current session

- a bibliography of key papers (may be the same as the Literature Survey bibliography)

- any Graduate School courses taken

- any collaborations started with other PhD students, RAs or external groups or individuals

- courses, conferences and workshops attended or helped on

11 Early Stage Review (ESA) (12 months)

There is a formal review of progress in the first year, approximately twelve months after the date of initial PhD registration. This consists of a written report and an oral examination. The College regulations state that students whose work fails to meet the required standards will be asked to resubmit after 2 months and that students failing at that point will be required to withdraw or to transfer to the MPhil degree. As mentioned above, the Literature Survey will form part of this assessment. The second part will be a paper written by you, about your research project so far, and suitable for a conference. Everyone's paper will be presented to your assessors and other interested people at a mini-workshop in late September 2019. There will be a 15 minute presentation and approximately 20 minutes for questions from your assessors.

The aims of the ESA review are to:

- ensure the student is capable of and suited to PhD research;
- ensure the student is still progressing with the research topic at a rate which will allow completion in the allotted time;
- ensure the research topic is well structured and has the elements needed to provide a successful doctoral topic;
- check that supervision arrangements are working satisfactorily;
- check that there are no problems with the supply of equipment, or other materials;
- provide feedback, comments and technical suggestions;
- provide experience of writing technical reports at the level expected of a PhD dissertation; provide some more experience of an oral ('viva voce') examination.

Report and Presentation

The ESA report is made between months 11 and 12 of the first year in the CDT. You have already produced a substantial Literature Survey and the ESA report will consist of a research paper. You'll be given a paper template, maximum 10 pages plus references of double column IEEE format, with some guidance of any mandatory headings. Of course, there may be minor variations depending on the mix of practical and theoretical work, and you may include an Appendix if it is appropriate. The paper will be delivered at a conference style workshop in September (probably over several days). Because this includes the ESA assessment, there will be more time allowed for questions than usual in a conference to satisfy College requirements. Further details will be given nearer the time.

Your target audience will be the Departments' staff, fellow CDT PhD students and industrialists. Part of the presentation should therefore be at a level accessible to a Computing or Electrical Engineering graduate. On the other hand, you should not hesitate to include a technical part requiring specialist knowledge. Expect to be asked lots of questions: about your understanding of the area, the choices you have made, related work, alternatives, etc.

NOTE: It is very important that the paper must be totally your own work. Your supervisor may give advice, but definitely must not be involved in its composition.

You will also need to update the research plan submitted earlier. This should include a clear account of the future plans for the research with a schedule for completion of the work. This must include a realistic timetable of activities leading to a successful completion of studies. You should identify any risks and describe briefly the backup plans.

The following guidance is very general advice for writing a paper/report and what to put in a presentation.

- *Introduction and statement of problem.* A clear statement of the research problem and aims and objectives. This should be described in a way that is accessible to any potential HiPEDS academic supervisor.

- *Literature survey.* An outline of the precedents for the proposed work, points of departure, and indication of potential significance; a comprehensive and critical literature review demonstrating a good knowledge of the background to the research problem. Since a detailed literature review has already been written, this may be cited and a summary of the main points relevant to the paper included.

- *Methods and techniques.* An account of the methods and techniques adopted in the study. This will normally include a presentation of the relevant theoretical computational or experimental methods to be employed.

- *Summary of research.* An account of research carried out so far.

- *Results.* A discussion of results obtained.

- *Bibliography.*

The presentation should cover the following points.

- Introduction and statement of problem, structure of the talk
- Objectives and Aims: what you want to achieve, and how you will measure your success
- Techniques to be used, research carried out so far, (any) results obtained
- Comparable research work in the area
- Proposals for further work

Assessment

Each student will be allocated an Assessment Team consisting of at least two members of academic staff including the supervisor, the 2nd supervisor and/or co-supervisor (if any), and one or more independent assessors. The Mentor cannot be part of the Assessment Team.

The outcome of the 'viva' can be one of four basic recommendations (we expect all students to be in category 1):

- The student can progress to the second year of the CDT.

- The decision is deferred. The student needs to submit a revised report within two months and, at the discretion of the Assessment Team, possibly give a second presentation. A final decision will follow the re-submission.

- The student is required to downgrade to the MPhil degree.

- The student is required to withdraw.

12   Late Stage Review (LSR) (24 months)

By month 24 students are required to submit a Late Stage Review report. This will be in the form of a poster, appendix and all papers published/submitted to date. The poster should include the following information:

- summary/presentation of the work done and results achieved

- list of published papers

The appendix should be no longer than 3 pages and include a provisional table of content of the thesis and a schedule of planned research needed to complete the PhD. The poster and the appendix will have to be submitted in CATE/Blackboard in the form of a zip file.

Assessment

The LSR Poster and Appendix will be reviewed by the supervisor, the 2nd supervisor and the same assessor of the ESA (unless a change of topic has happened since the ESA milestone) as part of a departmental poster presentation event. There should also be strong evidence of progress from the 12-month ESA review.

13   Thesis Submission (normally after 4 years in the CDT)

Deadline

Students *MUST* submit their thesis by the end of month 48 (after the PhD registration). This is a strict deadline imposed by the College. Before you can submit your thesis or have a viva voce examination, you, your supervisor and the Department need to complete several examination entry forms. These are available at the Registry website, or via the link on the DoC PhD web pages `http://www.doc.ic.ac.uk/research/phd/phdmatters` and EEE web pages `http://www.imperial.ac.uk/electricalengineering/courses/phd`.

The forms should be submitted at least four months before thesis submission. Your examiners will be appointed at this time. Please consult your supervisor to ensure that these formalities are completed in a timely manner. We expect that most CDT students will submit before the end of the four year CDT programme. Do not let your supervisor divert you into writing papers in this final period. Your priority should be submitting an excellent thesis; additional papers can be written afterwards.

Post-Submission

Thesis submission is done electronically (via www.ethesis.co.uk) and causes your thesis to be printed and the printed copies to be posted to the examiners. Your supervisor will arrange the date of your viva. It normally takes place within two or three months of thesis submission although the wait can be longer depending on the availability of the examiners and their other commitments. After the viva, the examiners will make a recommendation. The two most common recommendations are: to award the PhD immediately with no further changes (comparatively rare), or to award the PhD subject to some minor specified amendments to be carried out within 3 months of the viva and approved by the examiners (most usually). There are other, less desirable, outcomes when sub-standard work is submitted. Work with your supervisor to ensure that your work will be judged to be of PhD standard.

14 PhD Supervision

The following is extracted from the Graduate School web pages *PhD Students & Supervisors*.

http://www.imperial.ac.uk/study/pg/graduate-school/quality-assurance/
phd-students-and-supervisors

Supervisors expect you to:

- Take responsibility for your thesis: in the end it is your work and your supervisors are here to help you accomplish your research objectives, but not to do the thinking for you!

- Work hard: a research degree cannot be accomplished with only a 9–5 effort. Imperial College is a top ranking University and we expect that students will strive to accomplish good work.

- Display initiative: ultimately, the person who drives the process and strives to understand the research area is you. We expect you to be curious about your work and to think about how other ideas/work have an impact on the research you are doing. In light of this, it is a requirement for you to attend all lab meetings, work in progress etc. plus other seminars. *To be a scientist — you should be curious about science!*

- Write papers (this is dependent on field of study) before you have submitted your thesis. The process of writing enables you to develop skills which are useful when writing up your thesis, and the fact that you have had papers refereed/accepted by International journals satisfies the external examiner that you have what it takes!

- Be self-critical of your own work and results, and use these skills in being sceptical of results in the literature.

- Help colleagues (especially less experienced ones) in the laboratory to learn through discussions and demonstrations.

- Keep up with the literature in your field.

- Provide regular reports detailing your results. You should be conscientious about keeping a laboratory notebook and regularly entering all your data into tables and spreadsheets.

- Be aware of safety at all times and follow safety procedures, especially if you are working in a laboratory.

- Develop your skills and learn new ones by attending the transferable skills courses and lectures provided by the Graduate School, by your own and other College departments/divisions/faculties, and by any other external providers.

As a student you can expect your supervisor to:

- Be supportive of you both intellectually and personally.

- Set up a viable project and ensure that you have a clear idea of aims and objectives and an initial work-plan.

- Provide an adequate work space for you.

- Be available (or provide an identified substitute) to talk about research problems at relatively short notice although, at certain times of the year, you may need to give a few days notice.

- Help and guide you extensively in your first year; help you in your second year; and be a sounding board in your third year. The help is tapered as you develop confidence in your own abilities and research skills, to enable you to learn to work more on your own and to make more of your own decisions.

- Help develop your skills in technical writing, oral presentations, problem definition, statistical data analysis and critical literature reviews.

- Help enable you to attend at least one conference to present a paper.

- Provide adequate funds and/or facilities for your research project.

- Read your thesis thoroughly and make constructive comments on both style and intellectual content.

Together, students and supervisors are expected to:

- Adhere to the College time-frames.

In addition, you can expect your supervisor to

- identify suitable PhD examiners and make arrangements for the viva examination.

15   Attending Taught Courses

Currently, you are entitled to attend any lectures in DoC or EEE. This is a great opportunity and you should continue your education by taking advantage of it.

16   Study Leave

Any periods of *research* in which you work on your PhD away from the College at another institution or organisation *must* be approved by your supervisor and the CDT. Approval should be sought at least one month in advance of the period for which leave is sought. Study Leave is intended for cases where the work being carried out is research contributing *directly* to the PhD, and which is not considered as paid work.

Study leave is different from industrial internships, which are usually paid. Indeed, there will be opportunities for industrial visits, usually for up to 3 months. During such an internship you would normally take interruption of studies (see below).

Note that students with visa restrictions need to seek specific advice from the College's International Office before making a Study Leave request, as a change of location may affect their ability to remain in the UK.

17   Interruption of studies

An Interruption of Studies should be requested when a serious personal emergency or other circumstance arises which necessitates a break from PhD studies. For instance, an internship. No fees are payable for such a period, during which a student's PhD registration is effectively suspended. This is not the same as Study Leave. If a student will be carrying out PhD related research away from College for a period of time, the supervisor can apply for Study Leave for this period.

Again, students with visa restrictions need to seek specific advice from the College's International Office before making an Interruption of Studies request, as a change of location may affect their ability to remain in the UK.

18   Absence and illness

The College requires students to inform their Department if they are absent from College, for whatever reason, for more than one week. Students should inform their supervisor, and if required by the supervisor, the CDT Manager. If the absence is due to illness a certificate must be produced.

19   Employment during Studies

The Departments provide opportunities for PhD students to carry out work for the Department as Graduate Teaching Assistants (GTA). These are used to provide some additional financial support and to allow students to engage in the teaching activities of the Department.

The normal policy is that the total amount of GTA employment during PhD studies should not exceed 6 hours per week and claims for more than 6 hours per week will not be accepted. All such Graduate Teaching Assistants must have attended a College approved GTA course, offered at the start of session.

It is the PhD student's responsibility to handle any tax liabilities that may arise from their employment. Students with scholarships must also check if there are conditions imposed by their sponsor with respect to additional payments. International students should also seek advice from the International Office regarding visa limitations on employment.

20   Travel funds

The CDT sets aside some funds specifically for the support of research student travel, with priority given to students who are *presenting papers* at international conferences and workshops. Each CDT PhD student will be granted a travel allowance for this purpose of up to £4000 over the course of the CDT programme (current level), although consideration may be given for one training trip over the three PhD years, especially in the first year. (Short one-day trips within the UK, for example to attend a lecture at another institution, can be supported and will not count as training trips.) The maximum claim for any one trip will normally be £1250 and £2000 for any 12-month period. Details of how to claim, and restrictions will be limited so not all is spent in one year.

Approval for a trip must be obtained before the trip by submitting a completed Travel Request form to the CDT Manager. The form can be found on the HiPEDS website under Internal tab. Ensure that you have your supervisor's approval and signature on the form. After the trip, complete a College expense claim form, available from the CDT Manager/HiPEDS website, and submit this together with the approved Travel Request form and all receipts to the Computing Departmental Finance Officer in room 436. You will have to supply receipts for all items of expenditure.

In order to allow as many student trips as possible to be supported, PhD students are expected to minimise costs, for example to:

- make sure they register as students when possible;

- offer to work as a student volunteer (some conferences pay students to help with the running of the conference);

- use public transport and not taxis when possible and safe;

- use cheap/discount flights when possible and to book well in advance;

- consider more hotels than just the conference hotel;

- share a room with others if possible;

- use cheap poster printing services: e.g. at the time of writing, an A1 poster at `www.pwauk.com` costs about £18 inc. delivery with a student/academic discount.

You cannot claim for travel insurance. The College's travel insurance policy covers students of the College whilst abroad on College business. College business is deemed to include (but is not limited to) visits to overseas universities and other academic institutions, attendance at scholarly conferences and research meetings, visits to overseas laboratories and industrial plants in connection with College research projects or teaching duties, field trips and sporting visits as representatives of the College. The policy does not apply to private holidays. For details and additional advice and exclusions see: `http://www.imperial.ac.uk/finance/financial-services/insurance/`.

21 Disabilities, specific learning difficulties, long-term health issues

Studying at university can be a challenge, especially if you have a disability. The College is keen that you have every opportunity to fulfil your potential and graduate with the degree you deserve. It is therefore important that you let us know about any disability, specific learning difficulty or health problem as soon as possible so that we can give expert advice and all available support.

Some people never think of themselves as having a disability, but students who have experienced any of the issues listed below have found that some help and support has made all the difference to their study experience.

- Specific learning difficulties (such as dyslexia, dyspraxia, AD[H]D)

- Autistic spectrum disorder (such as Asperger's)

- Deafness or hearing difficulties

- Long term mental health difficulties (such as chronic anxiety, bipolar disorder, depression)

- Medical conditions (such as epilepsy, arthritis, diabetes, Crohn's disease)

- Physical disabilities or mobility impairments

- Visual impairment

Disability Advisory Service
`http://www.imperial.ac.uk/disability-advisory-service/`

The Disability Advisory Service works with individual students no matter what their disability to ensure that they have the support they need. The Service can also help if you think that you may have an unrecognised study problem such as dyslexia. The service is both confidential (information about you is passed to others in the University only with your agreement) and individual in that any support is tailored to what you need.

Some of the sorts of things that the Service can help with are:

- Being an advocate on your behalf with others in the College such as your Departmental liaison officer, Senior Tutor or Examinations officer, the Accommodation Office or the Estates Department

- Checking that your evidence of disability is appropriate and up-to-date;

- Arranging a diagnostic assessment for specific learning difficulties;

- Help with applying to the College for the cost of an assessment;

- Help with your application for the Disabled Students Allowance (DSA) — see below;

- Helping students not eligible for the Disabled Students Allowance in obtaining support from other sources;

- Help with arranging extra Library support;

- Supporting applications for continuing accommodation for your second or later years.

Disabled Students Allowance
`http://www.imperial.ac.uk/disability-advisory-service/`

Students who have home-fees status and who have a disability can apply for a grant called the Disabled Students Allowance which can pay any extra costs that are a direct result of disability. This fund is not means-tested and is a grant not a loan: any home student with a disability can apply and will not be expected to pay it back. Students with unseen disabilities such as mental health difficulties, dyslexic type difficulties, or long term health problems are also eligible for this fund.

22   Difficulties

One of your supervisor's roles is to offer help and support when you run into academic, personal or financial difficulties. You might also consider discussing such problems with your Mentor or the Postgraduate Tutor.

Please note that the College provides a wide range of Health and Welfare services. Do not hesitate to make use of these:

- Welfare and Advice
  `http://www.imperial.ac.uk/student-space/`

- Fees and Financial Help
  `http://www.imperial.ac.uk/students/fees-and-funding/`

- Accommodation
  `http://www.imperial.ac.uk/study/campus-life/accommodation/`

- International Students
  `http://www.imperial.ac.uk/study/international-students`

23   Research seminars and social activities

Research is a social activity. You will learn more by talking with people working in your area and attending seminars than you will by reading papers in isolation. Many of the best ideas spring from casual conversations or accidental meetings. The Departments have a wide range of active research groups that are well over the 'critical mass' and which run frequent informal seminars. The CDT runs its own seminar programme once a month, organised by HiPEDS second year students.

Seminars are announced by email, and on the DoC and EEE Departmental web pages. You may also sign up to receive seminar notification of EEE seminars. As a CDT student you are entitled to attend all such seminars and use any departmental facilities such as the Common Room on the 5th floor of the Huxley Building or the Cafe in the EEE building. Try and maximise the opportunities this offers.

As well as attending seminars you should be prepared to give some. Most of the research group seminars are pitched at an informal level to encourage the early dissemination and discussion of ideas. The sooner you get used to exposing your ideas to others the better; you will find the audiences sympathetic and constructive. There will be ample opportunities during the CDT programme.

There are various other events and activities throughout the year. For example, the CDTs at Imperial College run an annual CDT "Science Discussion event" in April. There is a 'Cakes' day in the 5th floor Common Room each week so that all Computing PhD students can come together socially, discuss life and the universe and make friends. There is a very popular 'One Minute Madness' event (at which students have one minute to explain to the audience what their research is about), and an annual PhD Poster Competition (sponsored by Google). The PhD students of the Computing Department have successfully organised and run their own workshop with printed proceedings including papers submitted by outside persons and groups (see `http://iccsw.doc.ic.ac.uk`). The CDT puts on Industry days of various kinds, and the second year CDT students attend a creativity sandpit event in March. We are hoping to run a series of entrepreneur workshops leading to a Dragon's Den style event at some point.

24   Study room allocation

In your first MRes year you will be allocated a desk and workspace in the new CDT space on Level 4 of the Library, which will be shared with other research students. Thereafter you will move to space in your supervisor's department.

25   Computing Support

It is CDT policy that all research students have, at the very least, their own desktop PC with appropriate word-processing software, access to printers, archive and back-up facilities, email, and networks. Most students will have access to more sophisticated computing equipment in addition, as required by the nature of their research. Research students may also borrow a laptop from the Department for a short time, e.g. for giving a presentation at a conference. If you have problems with hardware or software, or want to learn more, in the first instance you should contact the Computing Support Group (CSG) preferably by mailing `help@doc.ic.ac.uk`. All such emails are logged allowing you to follow the progress of requests.

If you have a computer and access to the internet at home it is possible to connect to College systems via the College's VPN service. Consult the College's ICT service
`http://www.imperial.ac.uk/admin-services/ict/self-service/`
`connect-communicate/remote-access/.`

Useful information can be accessed via either the Department or the College webpages. It is worth spending some time familiarising yourself with them and bookmarking pages with useful information. The HiPEDS webpage is at
`http://wp.doc.ic.ac.uk/hipeds/`

The Computing Department's PhD web pages are at
`http://www.doc.ic.ac.uk/research/phd/phdmatters`

and EEE PhD webpages are at
`http://www3.imperial.ac.uk/electricalengineering/courses/phd` and
`http://www3.imperial.ac.uk/electricalengineering/internal/pgdegrees`

As a PhD student you will be on the Departments' relevant mailing lists. You should check your email regularly, as important notifications are disseminated using email.

All research students are entitled to a certain amount of photocopying, either in the Department or in the Central Library. Check with the CDT administrator about allowances etc.

26   Common Room

CDT students are entitled to use the Maths/Computing Common Room on level 5 of the Huxley Building. It is open from 09:00 to 17:00 and serves tea, coffee, sandwiches and other items. You may also use the cafe on the ground floor of the EEE building.

27   Staff/Student Committees

Both DoC and EEE have their own postgraduate staff student committee, which is the forum for general discussion of issues that affect research students. It normally consists of some or all of the Director of Postgraduate Studies, the Postgraduate Tutor, the PhD Programme Administrator, the PhD Admissions Tutor, the year mentors, and representatives elected by the research students (one for each year). Meetings are held at least once a term, and on demand. The CDT will elect one representative from students with EEE supervisors, and one from students with DoC supervisors. They will both be entitled to attend both staff student committees, but will probably only wish to attend one of them. Additionally, there will be regular meetings with your cohort mentor where you can raise any issues that concern you.

The PhD Committee is not the appropriate forum to raise or solve specific problems affecting one or two individuals. It is the place to discuss persistent or widespread problems, or general points that affect all students. Constructive suggestions are encouraged and are always welcome. Approach any member of the Committee or send an email message if there is an issue you would like to raise.

CDT Reps

Student Representatives are recruited from HiPEDS to gather feedback from students to discuss with staff. More information about the role, and instructions on how to become an academic representative, are available on the Imperial College Union (ICU) website.

```
https://www.imperialcollegeunion.org/your-union/
```

Election of the HiPEDS PhD student representatives is normally run within the first few weeks of each new academic year. Emails will be circulated by the CDT Manager to collect nominations prior election.

28   Term-time and Home Addresses

Students must provide both their term-time and home addresses upon registration at the start of each academic session. It is essential that any subsequent changes of address are notified to both the Registry and the CDT Manager immediately, from whom change of address forms can be obtained.

29   Mail

You must read your email every day. This is the normal means of informing you of changes to the PhD programme, deadlines etc.

For the first year, when your desk is in the CDT space on Level 4 of the Library building, your mail will be delivered to that space by the Manager. In order to effect this, your mail should be addressed as follows:

> Student's Name
> HiPEDS student
> c/o Department of Computing
> Huxley Building
> Imperial College London
> 180 Queens Gate
> London SW7 2RH

The address *MUST* contain the designation 'HiPEDS Student' otherwise post may be lost.

30 Stationery

You will be given a stationery box when you register for the first year of the programme. Additional supplies can be obtained from the CDT administrator.

31 Identity cards

Everyone in the College is required to have an ID card. Photographs for the cards are taken by the College Security Section and you will be given details on registration about how to get a card. The ID cards are also used to access printers and photocopiers, and other facilities. You will also need to have your ID card before you can use the College library.

32 Out of hours access

Normal College hours are between 08.30 and 18.00, Monday to Friday. The times outside these hours are known as 'out of hours' periods. Students are permitted to work for parts of the out of hours periods, usually until 23.00. All students must carry their ID card to be allowed out of hours access and show your ID card to the Security Guard or other members of College staff on request.

33 Library information

Students are automatically registered with the Library when they are issued with a College ID card on joining the College. Your ID card is used as your library card, to swipe into the Library, borrow books and operate the Library printers. For more information see: `http://www3.imperial.ac.uk/library`.

The Library has access to many sources of books outside the College and can arrange short and long term loans. It is also open to requests for the purchase of specific new books. Contact the Departmental Librarian, Angela Goldfinch (a.goldfinch@imperial.ac.uk), if you need help.

34   Safety procedures

There will be a safety lecture for new CDT students in the CDT space - date to be finalised. You should attend the safety lecture of your home department at the start of year 2.

Fire Alarm Signals

The *GENERAL ALARM* signal is a continuous ringing of the fire alarm bells. This is a signal that the Building should be evacuated immediately.

Evacuation Procedure

- Act quietly. Use the nearest available exit — indicated by green 'Fire Exit' signs.

- Do not use the lifts.

- On leaving the building keep clear of the exits to avoid impeding the Fire Brigade. Report to the assembly point. Do not re-enter the building until you are told it is safe to do so.

If you discover a fire

- Give the alarm immediately by breaking the glass in a corridor or room fire alarm. This will sound the alert signal. If you are unable to set off an alarm ring 4444 (four digit emergency number). If you hear talking on the line decide whether the same emergency is being reported; if not, interrupt with details of the emergency.

- Try to extinguish the fire by using the nearest extinguisher or hose reel *but do not take any personal risks*.

- Shut all doors, and if possible, the windows, of the room in which the fire is discovered. This will prevent draughts and reduce the risk of the fire spreading.

- Telephone the Messenger/Security Guard (58907 or 4444) or go to the main entrance and give him/her the details. The Messenger/Security Guard will call the Fire Brigade to the Huxley Building.

Escape Routes

Green 'Fire Escape' signs posted in the College buildings mark escape routes. It is important that you are aware of the escape routes near the place you are working. Check these whenever you move your workplace, before any emergency occurs.

Remember *NOT* to use lifts in emergencies — the power may be cut off abruptly. In addition, short-circuits can cause lifts to stop at the level of a fire.

Fire Wardens

Both departments and the CDT space will have Fire Wardens. When an *ALERT* signal sounds it is the duty of the Fire Warden to check their area, and then take action as described above. When the *GENERAL ALARM* sounds, it is the duty of the Fire Warden to ensure that the area for which they are responsible is vacated and that all persons in the area make their way out of the building by the nearest escape route. In lecture theatres the lecturer has the responsibility of the fire warden.

If a Fire Warden instructs you to evacuate, you should follow their instructions quickly and quietly, even if there is no other warning.

Fire Drills

From time to time a fire drill will be organised. Please follow the standard procedures for evacuating the building.

First Aid

In the event of an accident or sudden illness, call a first-aider. The location of the nearest first-aider are generally shown on green notices on each floor of College buildings. Alternatively, you can contact the College Health Service on extension 49400 during normal hours (Monday to Friday, 09.00 to 17.00, except when the College is closed). Give emergency details. If this fails dial 4444 and ask for an ambulance.

Bomb Warnings

In the event of a bomb warning, the evacuation signal may or may not be used. Security staff will have been alerted to ensure that sensible exit routes are used and you should follow their instructions. You are advised to stay clear of the campus for at least one hour after the alarm. Any assembly point could itself be the location of the bomb.

35 Links to Various College Webpages

Warning: College links tend to be unstable. You may need to search the College website to locate the information.

Information for Research Students
```
http://www.imperial.ac.uk/student-records-and-data/
for-current-students/research-degrees/
```

- PhD Direct Registration Procedures
- Useful information for PhD Students
- MPhil/PhD and EngD Procedures
- MD(Res)
- Change of Supervisor
- Study Leave
- Interruption of Studies
- Writing-Up Status

What is a PhD?
http://www.imperial.ac.uk/students/success-guide/pgr/getting-started/
what-is-academic-research/what-is-a-research-degree/

- PhD Structure
- Types of PhD
- Partner Research Institution Scheme

Support for PhD Students
http://www.imperial.ac.uk/student-records-and-data/for-current-students/
research-degrees/

- Academic Support
- The Graduate School
- The Graduate Students Association
- International Students
- International Office
- English Language Support
- Imperial College Union

PhD Students & Supervisors: What to expect
http://www.imperial.ac.uk/study/pg/graduate-school/quality-assurance/
phd-students-and-supervisors

Codes of Practice
http://www.imperial.ac.uk/study/pg/graduate-school/quality-assurance/
qphd-students-and-supervisors/

- The research supervisor
- The research student

Research Degree Assessment and Review
http://www.imperial.ac.uk/student-records-and-data/for-current-students/
research-degrees/

- Early Stage Assessment — Guidance notes
- Early Stage Assessment Form
- Late Stage Review — Guidance notes
- Late Stage Review Form

Graduate School
http://www.imperial.ac.uk/graduate-school

English Language Support Programme
http://www3.imperial.ac.uk/academic-english/

Postgraduate English Requirement
http://www.imperial.ac.uk/academic-english/phd-students/
phd-academic-english-requirement/

Registry
```
http://www.imperial.ac.uk/admin-services/registry/
```

Exam Entry Forms
```
http://www.imperial.ac.uk/student-records-and-data/for-current-students/
research-degrees/examination-information/examination-entry-forms/
```

Guidelines for Supervisors for the Appointment of Examiners
```
http://www.imperial.ac.uk/student-records-and-data/for-current-students/
research-degrees/examination-information/examination-entry-forms/
```

Thesis Submission and Vivas
```
http://www.imperial.ac.uk/student-records-and-data/for-current-students/
research-degrees/examination-information/thesis-submission--vivas/
```

Academic and Examination Regulations
```
http://www.imperial.ac.uk/about/governance/academic-governance/regulations/
```

College Certificates
```
http://www.imperial.ac.uk/student-records-and-data/for-current-students/
degree-certificates/
```

Student e-Service
```
http://www.imperial.ac.uk/students/
```

International Office
```
http://www.imperial.ac.uk/study/international-students/
```

Points Based System (non-EU nationals)
```
http://www.imperial.ac.uk/human-resources/procedures/immigration/
overview-of-uk-immigration/
```

Council Tax
```
http://www.imperial.ac.uk/study/campus-life/accommodation/
private-accommodation/council-tax/
```

18+ Student Oyster Card
```
http://www.imperial.ac.uk/student-records-and-data/for-current-students/
student-travel-discounts/
```