AIMS
Autonomous Intelligent Machines & Systems

EPSRC
Pioneering research and skills

EPSRC Centre for Doctoral Training in Autonomous Intelligent Machines and Systems (AIMS)

Student Handbook 2018

Introduction

Welcome to the EPSRC Centre for Doctoral Training in Autonomous Intelligent Machines and Systems (AIMS). The Centre is now in its fifth year, and is an exciting opportunity for everyone involved. It's attracted a lot of attention inside and outside the University: there is a lot of goodwill, and many incentives to succeed. We are aware that you, the students, are also investing time in participating in the Centre, and we hope that it will exceed your expectations.

This Handbook describes the Academic life of the centre, the expectations upon you, and what you should expect from the lecturers and staff. There may be errors and inconsistencies – we apologies in advance. Please help us to fix any teething problems the Centre may have.

Director - Niki Trigoni

Co-Director - Mike Osborne (Director for MT18 and HT19)

Co-Director – Alex Rogers (MT18 and HT19)

CDT Centre Administrator - Wendy Adams

Programme Background

In the next decade our society will be revolutionised by Autonomous, Intelligent Machines and Systems, which can learn, adapt and act independently of human control. There is an exciting opportunity to develop these technologies for sectors as diverse as energy, transport, environment, manufacturing and aerospace. Our CDT will deliver highly-trained individuals versed in the underpinning sciences of robotics, computer vision, wireless embedded systems, machine learning, control and verification. The CDT will advance practical models and techniques to enable computers and robots to make decisions under uncertainty, scale to large problem domains and be verified and validated.

The Centre will be instrumental in bringing together AIMS-related expertise from two departments, Engineering Science and Computer Science, providing PhD students for the first time the opportunity to get a combined theoretical and systems training in all four AIMS themes: 1) Robotics, Vision and Perception; 2) Machine Intelligence and Multi-Agent Systems; 3) Control and Verification and 4) Pervasive Networked Sensing and Actuator Systems.

Programme Summary

The training programme of the CDT will provide a comprehensive, state-of-the-art view to autonomous intelligent systems; combining theoretical foundations, systems research, academic training and industry-initiated projects and covering a range of topics aligned to four key skills areas. Our programme will intimately mix both practical and theoretical aspects of intelligent machines and systems. Both Engineering and Computer Science at Oxford have an excellent track record of developing practical systems and evaluating them in real applications (e.g. self-driving cars and sensor networks for environmental monitoring).

Main Areas of Research

Robotics, Vision and Perception

The first key skills area is in enabling autonomous systems to identify and interpret complex scenes, from moving vehicles to human activity and form robust situation assessments to enable appropriate action and decision making. For example, robotic systems require such capabilities so that they can navigate in unknown environments; augmented reality systems require methods for scene perception and object identification. Our vision is to train a new generation of researchers that will be able to understand and embed such intelligent machines across sectors, from smart buildings to driver-less cars.

Machine Intelligence & Multi-Agent Systems

The second key skills area is in making machine autonomy and intelligence ubiquitous; allowing machines to discreetly pervade the world around us and assist us. At the heart of this is a scaling issue and the need to coordinate and harness the potential of ubiquitous computational agents to meet the challenges of sustainability, inclusion and safety and to enable effective & seamless machine-to-machine coordination and machine-to-human interaction. The CDT will promote a training foundation for students to inject machine intelligence into real-world applications, such as the critical domains of healthcare, smart grids and energy resources, big data analytics, disaster response, citizen science, human-in-the-loop systems and the environment.

Control & Verification

The third skills areas lies in developing effective techniques to monitor and control intelligent machines, such as those used in manufacturing, transportation and biosensing/healthcare systems, and to ensure their safety and dependability. For example, how do we ensure that the embedded software controller of the self- driving car does not crash, or that the implantable blood glucose monitor correctly identifies an abnormal range and raises an alarm? Verification via model checking provides automated methods to establish that given requirements are satisfied, but is challenged by the need to consider the complex interplay of discrete, continuous and probabilistic dynamics. Students will be challenged to apply this material to control and verification problems in diverse areas, such as automotive controllers, wireless security and coordination in rescue scenarios.

M2M, Secure Sensing & Actuation

The fourth skills area will be to realise the vision of connecting intelligent devices seamlessly and everywhere and to allow them to share their sensing, monitoring and actuating capabilities. This is often referred to as “M2M” or the “Internet of Things”. Currently, there are key technical barriers in the widespread adoption of “intelligent networked” devices. First, machine interaction typically relies on context- awareness (e.g. location) which is problematic in indoor environments. Second, sensors and actuators are inherently unreliable, often lacking calibration, quality estimation, energy management and fault detection capabilities. This compromises their practical use. Third, most M2M solutions have been designed to meet functional requirements, ignoring security and privacy concerns, both in peer-to-peer ad-hoc networks and cellular networks.

Modules

First Year – First term (Michaelmas Term)

- Data Estimation and Inference
- Signal Processing
- Optimisation
- Machine Learning
- Embedded Systems Programming
- Introduction to Modern Control
- Learning from Big Data

First Year – Second term (Hilary Term)

- Computer Vision
- Systems Verification
- Privacy and Security in Wireless Networks
- Computational Game Theory
- Dynamic Robot Locomotion & Motion
- Reinforcement Learning
- Sensor and Actuator Networks
- Mobile Robotics

A full description of all these modules can be found at: www.aims.robots.ox.ac.uk/synopses/

Mini-Projects

The objectives of the mini-projects are:

- to give each student experience in undertaking a small research project, one which could seed or turn into a substantive DPhil project;
- by undertaking two projects, with different supervisors (and normally different academic departments), to ensure that each student explores some diversity of topic, before settling on their substantive research;
- to provide a means by which the CDT and partner organisations (companies, government departments, etc.) can develop relationships – whether leading to support for a DPhil project or some other engagement;
- by providing students with a menu of projects, to shape the overall research of the CDT according to the original proposal and subsequent guidance from the Advisory Panel;
- to put potential academic supervisors from within the University in touch with the group of CDT students, giving an opportunity to explore potential research ideas of mutual interest.

A good project will:

- provide worthwhile results, leading to a written report (ideally, publishable at an academic research workshop) within the nine weeks allotted;
- be based on a realistic problem or challenge;

- be substantially an individual piece of work (collaborative work with other students or supporters etc. is possible, but the student's contribution should be clearly defined and measurable);
- build upon, but not be constrained by, the content of and skills learned in the taught courses in the CDT;
- have an enthusiastic supporter/mentor from an external organisation and active engagement of a supervisor in the University (the first is optional; the second mandatory);
- be capable of extension into a bigger project, motivate a bigger project, or (if necessary) demonstrate the infeasibility of an intended bigger project.

You will be required to undertake one of your mini-projects with an industry partner. This project will be co-supervised by an academic member of the CDT. Some projects will have a Department of the University in the role of supporter (i.e. defining a problem domain, but not necessarily providing academic supervision of the student's work).

Each theme has a Champion whose role is to help to solicit project proposals, match academic supervisors and external partners, and ensure wide coverage.

Process

Mini-projects are proposed by:

- academic supervisors within the University;
- partner organisations;
- students themselves.

The CDT, and particularly the Theme Champions, will help to match partners and academics where necessary, so that eventually, every proposal has an academic supervisor, and that these reach as wide as possible a group of supervisors. These will then be reviewed by the CDT's Academic Board (or a sub-committee) will review the collection of proposals, to ensure balance and coverage of topics, academic departments, supporters, etc.

The list of projects will be made available to the students, for them to begin exploring possibilities. They will be allowed to propose their own projects, subject to the agreement of the Academic Board – but this should be the exception. Most projects will arise with a certain amount of negotiation, and a supervisor might well propose a particular project with a particular student in mind.

Students and supporters/supervisors will then arrive at mutually-agreed matches. The CDT Director/co-Directors (with the Theme Champions) will assist to avoid over-subscription of particular projects and to help students to find matches where needed. Students' choice of projects will be collated and approved by the Academic Board. After the project work is complete, each report will be marked by two members of the Academic Board.

Completion of mini-projects

You will complete your mini-projects over the following dates:

- Mini-project 1 – 8th April 2019 – 10th June 2019
- Mini-project 2 – 8th July 2019 – 9th September 2019

Substantive DPhil Project

After successfully completing the first year, you will move to be hosted by one of the academic departments of the University, under supervision of one or more academics from that department (or academics from two or more departments). You will need to develop a full research plan for your DPhil, and pass the Transfer of Status process, by which you move from being formally a Probationer Research Student to being a full DPhil Student. This will normally take place during your second year of studies (your first in the host department).

Later in your studies, you will need to pass the Confirmation of Status, which is designed to ensure that you have completed substantive research and are on target to complete a DPhil thesis.

By the end of four years (three in the host department) you should be ready to submit a thesis, and there will be a viva voce examination, with two independent examiners (that is, people you have not collaborated with at any stage).

If your first year in the CDT is not successful (or, exceptionally, if the Transfer process does not work out for you) a reasonable alternative approach will be to transfer status to that of student for MSc by research.

For further information please see the Exam Regulations online:

http://www.admin.ox.ac.uk/examregs/information/contents/

Staff biographies

Professor Michael Osborne

Michael Osborne is an Associate Professor in Machine Learning, Official Fellow of Exeter College and Faculty Member of the Oxford-Man Institute of Quantitative Finance, all at the University of Oxford. I co-lead the Machine Learning Research Group, a sub-group of the Robotics Research Group in the Department of Engineering Science.

My goal is to develop machine intelligence in sympathy with societal needs. Within machine learning, I have particular expertise in Gaussian processes, active learning, Bayesian optimisation and Bayesian quadrature, and I am a founder of the emerging field of probabilistic numerics.

My work in non-parametric data analytics has been successfully applied in diverse and challenging contexts. These contexts range from astrostatistics, where my probabilistic algorithms have aided the detection of planets in distant solar systems, to zoology, where my work has helped to clarify how pigeons are able to navigate such extraordinary distances.

My career has been shaped by extensive engagement with industry, both in research and consultancy arrangements. Most recently, I have addressed the broader societal consequences of machine learning and robotics. In particular, I have worked to analyse how intelligent algorithms might soon substitute for human workers, and to predict the resulting impact on employment. This latter work has enjoyed broad and sustained media coverage (featured in *BBC Newsnight, the Economist, the Financial Times, the Wall Street Journal, the Independent, the Guardian* and *the New York Times*) and has substantial policy implications related to the future of employment.

Professor Niki Trigoni

Professor Niki Trigoni is a University Lecturer at the Oxford University Department of Computer Science and a fellow of Kellogg College. She obtained her PhD at the University of Cambridge (2001), became a postdoctoral researcher at Cornell University (2002-2004), and a Lecturer at Birkbeck College (2004-2007). Since she moved to Oxford in 2007, she established the Sensor Networks Group, and has conducted research in communication, localization and in-network processing algorithms for sensor networks. Her recent and ongoing projects span a wide variety of sensor networks applications, including indoor/underground localization, wildlife sensing, road traffic monitoring, autonomous (aerial and ground) vehicles, and sensor networks for industrial processes. She has co-authored more than 60 peer-reviewed conference and journal papers, including publications at Sensys, IPSN, Infocom, Mobihoc and ACM Transactions on Sensor Networks. In 2012, she edited (with Prof. Krishnamachari) a themed issue of the Philosophical Transactions of the Royal Society A, which is a compilation of landmark papers from leading researchers in her field. She has also edited the Proceedings of the Third International Conference on GeoSensor Networks (2009). She served as the Tracking Session Chair at ACM Sensys 2012, Chair of the 3rd Intl. Conf. in GeoSensor Networks in 2009, and as co-Chair of the Workshop on Environmental Sensor Networks in 2007. She has reviewed a large number of papers for conferences and journals in the area of sensor networks, and grant proposals for EPSRC, NERC, NSF, Singapore Ministry of Education and the British Council.

Mrs Wendy Poole

I have been working in the University for 24 years now. I took up the position as CDT Centre Administrator, after working in the Department of Computer Science as the MSc Course Administrator for the past 20 years.

Academic Members of Staff

For a full list of staff relating to the CDT in AIMS, please see:

http://aims.robots.ox.ac.uk/academics-and-staff/

Programme Management

Steering Committee

The Steering Committee has formal oversight of the work of the Centre, and ensures that it follows the norms and standards of the wider University in academic, financial, and other regards. It comprises representatives of the relevant Academic Divisions of the University, together with the Director, and the chairs of the Academic Board and Advisory Panel.

Directorate

The Director and Administrators have responsibility for the day-to-day running of the whole programme. They meet with the Associate Directors on a regular basis, and this group undertakes all the normal operational activity of the Centre.

Academic Board

The Academic Board advises the Directorate in the oversight of the running of the modules and direct input into the structure and content of the training year and the whole admissions process. It also oversees the process of defining mini-Projects and matching supervisors, external partners, and students. The Board is made up of all the Oxford academics who contribute to teaching and supervision, along with the CDT Programme Team.

Industrial Advisory

This group exists to represent the interests of the Centre's sponsors and those providing other support, such as hosting students in their project work. It will meet around twice per year, and will receive progress reports and recommend new directions of activity. Its members will also act as advocates for the Centre in the wider AIMS community.

Monitoring and Assessment

Module Assessment

Each course undertaken will be assessed in different ways. You will be informed of how during each course.

The marking system for which you will be assessed will be the following:

NS – Non-satisfactory

S – Satisfactory

S* - Outstanding

Module Assessment Submission

For each module assessment you will be given a deadline to complete this. You will be required to submit your work by the required deadline. Further instructions will be given to you during the course.

Module Questionnaires

The CDT welcomes feedback from students and supervisors on any aspect of their continually developing programmes. Many of these comments emerge during courses but suggestions or complaints can be raised at any time with the appropriate Programme Director.

For students, the preferred method of feedback is use of the online feedback forms which students should fill out at the end of each module (see below), although it is recognised that some comments may need to be discussed in person and in confidence.

At the end of each module students are required to complete a questionnaire giving their opinions on the teaching, course content and overall views of the module which will be summarised and given to the Module Leader. We need this feedback in order to provide the best course we possibly can so it is essential that this is completed when asked.

Project Assessment

The grading scale for the mini-projects undertaken are:

- 5 – Excellent; would need little work to be published for a conference paper
- 4 – Very good; would need slightly more work to be suitable for a conference paper;
- 3 – Good; would need more substantive work before publication
- 2 – Adequate; meets the needs for a CDT mini-project; suitable preparation for substantive research
- 1 – Borderline; has some merit, but is barely suitable
- 0 – Not adequate; no evidence of achievement at the right level

Overall Assessment

In order to pass the first year overall, you must have satisfactorily completed all modules and mini-projects.

Skills Learning

You will need to ensure by the time you reach your Transfer of Status, you have spent a minimum of 10 days on transferable skills courses.

All courses in your first year are arranged through the CDT.

In years 2-4 you will be encouraged to choose courses of interest to you from a wide array of courses on offer. You can develop your transferable skills training through programmes at the University. The MPLS Division also offers training to help you in your journey to become a successful researcher:

https://weblearn.ox.ac.uk/portal/hierarchy/mpls/gap

(can only be accessed once you have your university single sign on and username).

The GAP system allows MPLS students to book places on graduate training courses run in department across the Division. A list of available courses and instructions on booking can be found at:

http://www.mpls.ox.ac.uk/training/course-programme-for-graduate-students/training-framework-for-dphil-students

Year 1	Year 2	Year 3	Year 4
Introduction to Public Engagement	Research Impact	Entrepreneurship (online courses)	Get that Job
Writing Skills	Foundations of a Successful DPhil	Finishing your DPhil	Thesis and Report Writing
Introduction to Linux/Unix	Conferences: Choosing, Funding, Networking	Making a difference: Applying your Research	Viva preparation and Practice
	Poster Design and Presentation		
Workshop on Connection MATLAB & Simulink	Presentation Skills		
Introduction to Library Catalogue	Managing your Supervisor		
	Narrative Skills		
CUDA Programming on NVIDIA			
Introduction to MATLAB			

Oxford Learning Institute - http://supervision.learning.ox.ac.uk/

Research Integrity

Research integrity is a commitment to creating an environment that promotes responsible conduct by embracing standards of excellence, trustworthiness and lawfulness. The University expects its students to maintain the highest standards of integrity in their research.

For individual researchers, research integrity entails a commitment to a range of practices including:

- intellectual honesty in proposing, performing, and reporting research;
- accuracy in representing contributions to research proposals and reports;
- transparency in handling conflicts of interest or potential conflicts of interest;
- protection of human participants in the conduct of research;
- humane care of animals in the conduct of research.

There are no universally correct ways to do research. There are, however, standards of practice which apply generally. Researchers should:

- be aware of the legislation, codes of practice and University policies relevant to their field;
- have the necessary skills and training for their field;
- comply with University and funder policies relating to research data management;
- be aware of the publication rules for the journals they want to publish in;
- ask if they feel something isn't quite right;
- not ignore problems;
- be accountable to the University and their peers for the conduct of their research.

All researchers are expected to be committed to ethical principles and professional standards. Not upholding such standards, either intentionally or through lack of knowledge, damages the scientific process and may harm research participants, colleagues, the University and society as a whole.

Policies and resources

All those involved with research at Oxford are expected to read and abide by the University's Code of Practice and Procedure for Academic Integrity in Research[1].

Students in the MPLS Division are required to complete the online Research Integrity[2] course by the time they apply for Transfer of Status. The Division also offers face-to-face Research Integrity[3] training which complements the online course.

The University's Research Integrity website[4] contains a number of additional resources, including links to information on authorship, conflicts of interest, research data management, health and safety, human participations in research, intellectual property, research involving animals, and research misconduct *[departments may wish to draw attention to those elements that are most relevant to their research areas]*.

Your supervisor will play an important role in helping you to develop skills for good practice in research, and is the first person you should ask if you have queries about any aspect of research integrity. Other sources of support and advice include your Director of Graduate Studies, other academics in your department, and the ethics advisors in University Research Services

[1] http://www.admin.ox.ac.uk/personnel/cops/researchintegrity/
[2] https://weblearn.ox.ac.uk/portal/site/:skills:ricourses
[3] https://www.mpls.ox.ac.uk/training/course-programme-for-graduate-students/research-integrity
[4] to https://researchsupport.admin.ox.ac.uk/governance/integrity

Internships

You will have the opportunity to go on industrial placements and have joint supervision from industry. The Centre has a number of partners in industry. You may have the opportunity to spend some time in your first year with one of these partners as part of your mini-project work. This will depend on the availability of joint projects, though you may have a hand in shaping these if you are keen.

Transfer and Confirmation

All CDT students must apply by **Wednesday of 5th week of their 6th term** with the required work submitted 2 weeks before the transfer date. Please see host departments' web pages for details.

- http://www.cs.ox.ac.uk/teaching/dphil/Transfer.html
- http://www.eng.ox.ac.uk/intranet/students/graduate-research
- http://www.eng.ox.ac.uk/intranet/students/graduate-research/transfer-of-status-requirements-and-submission-process

Preparing for Transfer of Status

All students should use the "preparing for transfer of status form" to complete their termly reflection for the term before they are due to transfer (5th Term), and upload it to GSR. This can form can be found at: http://aims.robots.ox.ac.uk/transfer-and-confirmation/

Students are strongly encouraged to complete the University's online research integrity training (an introduction to good research practice) before applying for transfer, which is available at:

https://weblearn.ox.ac.uk/portal/hierarchy/skills/ricourses

The aim of the transfer is to assess: students' progress; the validity of the proposed research project; and the likelihood submission within the students funded period.

Project Initiation Plan

This form is for students to work through with their supervisors in establishing the scope and direction of their project. This is not compulsory, but it is recommended. This form can be found at: http://aims.robots.ox.ac.uk/transfer-and-confirmation/

Requirements of Transfer

A "Transfer of status – Checklist" can be found at: http://aims.robots.ox.ac.uk/transfer-and-confirmation/ this will help in preparing for your transfer.

Outline of your tasks and of the process
There are four elements which you need to prepare. Item 1 is likely to take several weeks of work, so you must plan well ahead of the submission date.

1. **Report**: You should submit three soft-bound copies of the written work described below; you can print and bind them yourselves or ask the print room (printroom@eng.ox.ac.uk) to do this for you. It is your responsibility to deliver them to the CDT Administrator.

2. **GSO.2 form**: You should download the GSO.2 form from the University website. Complete section 1 and the supplementary information, sign in section 1 and forward to your supervisor (in either soft or hard copy). This should then be passed on to the CDT Administrator for approval by the DGS.

Using the GSO.2 form, your supervisor(s) will also provide evidence of your progress to the DGS. The DGS reconciles any differences of opinion, and makes a recommendation to the University. You are provided feedback on the outcome.

3. **Presentation**: You will be asked to deliver a presentation to your two assessors (and/or possibly to a wider audience, dependent where you are based in the department).

4. **Interview**: You will be asked to attend an interview with your two assessors at a time and place arranged by mutual agreement. They may ask you to make a presentation if they have not heard it before. The interview will typically last around 45 minutes to 1 hour, although it can be shorter or longer. You should be prepared to spend a substantial time discussing your plans for future work. Note that your supervisor will not attend.

If you are unable to transfer by the deadline you need to complete GSO2b - "application to defer". These forms can be obtained from:

www.ox.ac.uk/students/academic/guidance/graduate/progression

All forms need to be completed by the student, supervisor and college before returning to the CDT Administrator for DGS approval.

Two assessors and your supervisor make the formal review of your progress. Usually the assessors are faculty members from the CDT host departments. They will be chosen to have appropriate expertise in and/or knowledge of your area. They liaise with your supervisor and consider your presentation, written submission and performance in the viva, then report to the Director of Graduate Studies (DGS).

The written work can take two forms: ‘paper’ mode and ‘report’ mode. The former presents your work in the form of a scientific paper (this does not have to have been submitted for publication), in parallel with a literature review and research proposal; the latter is a single report. You should discuss with your supervisor which option is better for you; there is no inherent advantage in either. If you have already drafted a paper, the first option might be better for you; alternatively, if you are involved in a substantial design of a piece of equipment, the second option might be preferable. Templates for both options are available on the graduate section of Weblearn.

The research proposal should contain detail of the work planned for the next 9 months, with well-considered ideas for the remaining period of your studies.

Paper mode

For this mode, you need to submit two parts.

1. **Part I**: This should be written in the form of a scientific journal or conference paper. It should have all the usual elements: a title, abstract, introduction and review of relevant work; several sections describing research output; a conclusions section; and a bibliography. The paper typically should not exceed 10 A4 pages, including all diagrams and bibliography, when set in 10pt Times New Roman in a single spaced, double column format, with page margins of 20mm all round.

2. **Part II**: This should be a critical review of the literature sufficient to set your existing and proposed work in context, followed by your research proposal. The proposal is a key element: the content, time required, and risk involved in your proposed research must be fully thought through. You must provide a risk assessment identifying critical points or uncertainties, and indicate how you will

manage these. The review and proposal is limited to 25 A4 pages, set in 12pt Times New Roman, double spaced with 20mm margins all round. You may well find that there is some overlap between the literature reviews in the two parts. Do not be concerned by this, as cross-referencing between the two parts is perfectly acceptable.

Report mode

For this mode, a single report is required, written rather like a mini-thesis. The report should contain an abstract, introduction, literature review, chapters describing work undertaken, and overall conclusion. The substantive differences from the 'paper' mode are that the review of literature is unified, and that the format might make it easier to describe equipment build. The report also gives an opportunity to write a literature review or equipment chapter that can be included in your final thesis. The literature review and research conclusions should provide a clear motivation for your research proposal in the last chapter. This proposal is again of key importance, and it should include the level of detail already described for the 'paper' mode. The entire report should not exceed 50 A4 pages when set in 12pt Times New Roman, double spaced, with 20mm margins all round.

Outcomes

The criteria used by assessors for transfer of status are that they must be satisfied that:

1. The student has proposed a viable DPhil project that can be completed within the proposed timeframe and funded period or within 12 terms[5].

2. The work undertaken to date provides an appropriate background and platform for progress.

3. The student has developed a critical understanding of the relevant literature.

4. The student understands, can justify and defend their research project, its objectives and rationale.

5. The student has a clear plan for the future direction of the project.

6. The student has begun to take intellectual ownership of the project.

They are looking for evidence of all-round basic competence as a researcher: someone who is able to read, understand and appreciate the significance of existing literature; to come up with relevant and timely ideas; to pursue them via theory, experiment, and analysis; to draw conclusions about the outcome and "what next"; and to present their work so that other researchers can understand it.

In many cases, the assessors will recommend transfer of status without any concerns. There is then nothing for you to do but await the formal letter from the University. It is possible that they may raise some concerns that will need to be addressed by you more formally than simply by discussion in the interview. In such cases, they will ask you to provide a written response within two weeks of the interview, agreed with your supervisor, before recommending transfer.

[5] Note that these are 12 terms of study, i.e. periods of suspension do not count.

In some cases, the assessors will agree to transfer of status, but subject to conditions; they will discuss these with and explain them to you. It is also possible that the assessors will not be able to recommend transfer of status; they will then provide a detailed report outlining the rationale for this decision. You will automatically be given a copy of this report and granted a further term to apply for transfer of status a second time; the DGS will contact you to discuss the situation and all available options. If you are unsuccessful on a second attempt, you will be required to leave the University.

Confirmation of Status

All CDT students are required to confirm their status in their tenth term.

Please see host departments web pages for details.

- www.cs.ox.ac.uk
- www.eng.ox.ac.uk

Submitting your thesis

For a full detailed breakdown on what is required, see link below:

https://www.mpls.ox.ac.uk/graduate-school/information-for-postgraduate-research-students/submitting-your-thesis

Your DPhil thesis is due to be submitted by the end of your 4th year (12th term) with the deadline being Friday of week 0 of your 13th term.

Forms and notes relating to submission of theses You will need to complete GSO3 for appointment of examiners and this needs to be completed by you, your supervisor and college before being returned to the Graduate Studies Administrator for DGS approval. You should try to submit this form at least 4-6 weeks before you plan to submit.

When the Exam Schools receive the GSO3 they formally invite the examiners to act and your thesis will not be sent to the examiners until a response has been received.

Once you have submitted, the Administrator will follow up with the examiners and keep you informed about the viva date. After your viva there are a number of options, the most common being minor corrections. Once the examiners are satisfied they submit their report which has to be approved by the DGS and Division and then is sent to the Exam Schools who will sent you official notification of the result.

When you submit your initial thesis this can be soft bound but when you are given leave to supplicate you will need to submit a hard bound copy to the Bodleian the Departmental Library and the CDT Administrator.

Integrated thesis

An integrated thesis may either be a hybrid of conventional chapters and high-quality scientific papers, or be fully paper-based. Regardless of the format, the content of the thesis should reflect the amount, originality and level of work expected for a conventional thesis. It should not be assumed that the act of publication (in whatever form) means the work is of suitable academic quality and content for inclusion in a thesis, and students should discuss all papers in detail with their supervisor before including. It would be anticipated that the candidate would be a lead contributor, rather than a minor author, on at least some of the papers in order to consider this format. There is no minimum, or maximum, number of

papers a candidate is expected/allowed to include as part of such a thesis and it will remain a matter for the examiners to conclude whether the contributions are equivalent to that which would be expected of a standard DPhil.

Any papers utilised must concern a common subject, constitute a continuous theme and conform to the following guidelines:

(i) If a candidate for the Degree of Doctor of Philosophy wishes to be examined through an integrated thesis, they should apply for permission to be examined in this way when they apply for confirmation of status, as detailed in the relevant departmental handbook. A candidate for the Degree of Master of Science by Research should normally apply for permission to be examined in this way six months before submitting their papers for examination. To revert to being examined by a conventional thesis rather than an integrated thesis, the candidate must inform their department of the change as detailed in the relevant departmental handbook.

(ii) Work can be included regardless of its acceptance status for publication but candidates may be questioned on the publication status of their work by the examiners.

(iii) Any submitted/published papers should relate directly to the candidate's approved field of study, and should have been written whilst holding the status of PRS or a student for the MSc (by Research), or DPhil.

(iv) The collection of papers must include a separate introduction, a full literature review, discussion and a conclusion, so that the integrated thesis can be read as a single, coherent document.

(v) The candidate must ensure all matters of copyright are addressed before a paper's inclusion. A pre-print version of any published papers should be included as standard.

(vi) Joint/multi-authored papers are common in science based subjects and thus acceptable if the candidate can both defend the paper in full and provide a written statement of authorship, agreed by all authors, that certifies the extent of the candidate's own contribution. A standard template is available for this purpose.

The length and scope of theses, including word limits for each subject area in the Division are set out in Departmental guidelines.

In all departments, if some part of the thesis is not solely your work or has been carried out in collaboration with one or more persons, you should also submit a clear statement of the extent of your contribution.

Further information can be found at:

https://www.mpls.ox.ac.uk/graduate-school/information-for-postgraduate-research-students/submitting-your-thesis

Proof-reading

It is your responsibility to ensure your thesis has been adequately proof-read before it is submitted. Your supervisor may alert you if they feel further proof-reading is needed, but it is not their job to do the proof-reading for you. You should proof-read your own work, as this is an essential skill in the academic writing process. However, for longer pieces of work it is considered acceptable for students to seek the help of a third party for proof-reading. Such third parties can be professional proof-readers, fellow students, friends or family members (students should bear in mind the terms of any agreements with an outside body or sponsor

governing supply of confidential material or the disclosure of research results described in the thesis). Proof-reading assistance may also be provided as a reasonable adjustment for disability. **Your thesis may be rejected by the examiners if it has not been adequately proof-read.**

The University's Policy on the Use of Third Party Proof-readers may be found here: http://www.admin.ox.ac.uk/edc/policiesandguidance/policyonproofreaders/ The MPLS Division offers training in proof-reading as part of its Scientific Writing[6] training programmes.

How to book a degree ceremony?

http://www.ox.ac.uk/students/graduation/ceremonies/

Funding Period

You are expected to submit your thesis within 4 years, in the event that you go over this; you will be liable for fees which will not be funded from the CDT.

[6] https://www.mpls.ox.ac.uk/training/course-programme-for-graduate-students

Enterprising Researchers

Researchers increasingly need to be able to **demonstrate impact, attract funding**, **collaborate** and **communicate** with commercial partners at the same time as exploring new research ideas.

The MPLS Enterprise programme offers you ways to develop skills that support these activities through a progressive series of half day workshops and a variety of seminars, networking events and activities. If you find that you want to do more then there is scope to participate in Business School programmes (but no pressure to do so: this is not a recruitment drive for MBAs!). There is also support to participate in national and international competitions, if you want to do that, too.

More details on all our courses and workshops are available from the MPLS Enterprise pages: https://www.mpls.ox.ac.uk/enterprise/mpls-programme-and-courses.

There are also links to the University-wide portal *Enterprising Oxford*, which encourages and promotes entrepreneurship. This make it easy for students, researchers and staff to find out about (and join in with) local entrepreneurship events and training. We support collaboration across many disciplines in developing responses to challenges, both big and small. To find out more go to http://www.eship.ox.ac.uk

Read more about how one researcher got involved at:

http://www.eship.ox.ac.uk/when-can-i-call-myself-science-entrepreneur

The enterprise programme also covers many aspects highlighted on the Researcher Development Framework (RDF).

Academic Integrity

The University's code of conduct concerning academic integrity is set out on the website at:

http://www.admin.ox.ac.uk/personnel/cops/researchintegrity/

While the code's principles relate specifically to the conduct of research, all graduate students are advised to make themselves aware of the document's contents. The code of conduct mentions plagiarism, and in this context it is important for all taught course and research students within the division's subject areas, to be aware of, and to follow good practice in the use of sources and making appropriate reference. You will need to exercise judgement in determining when reference is required, and when material may be taken to be so much a part of the 'general knowledge' of your subject that formal citation would not be expected. The basis on which such judgements are made is likely to vary slightly between subject areas, as may the style and format of making references. Your supervisor or course organiser where appropriate, will be in the best position to advise you on such matters; in addition, these may be covered, along with other aspects of academic writing, in your induction training. By following the citation principles and practices in place in your subject area, you will develop a rigorous approach to academic referencing, and avoid inadvertent plagiarism.

Cases of apparently deliberate plagiarism, while infrequent in the University are taken extremely seriously, and where examiners suspect that this has occurred, they bring the matter to the attention of the Proctors. Your attention is drawn to the Proctors' and Assessor's Memorandum, Section 9.5, 'Conduct in Examinations', and in particular to sections 4 and 5 and the concluding paragraph of the section:

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

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

"The University employs a series of sophisticated software applications to detect plagiarism in submitted examination work, both in terms of copying and collusion. It regularly monitors on-line essay banks, essay-writing services, and other potential sources of material. It reserves the right to check samples of submitted essays for plagiarism. Although the University strongly encourages the use of electronic resources by students in their academic work, any attempt to draw on third-party material without proper attribution may well attract severe disciplinary sanctions."

Please refer also to Education Committee's guidance on good practice in citation, and the avoidance of plagiarism, which can be found at:

http://www.ox.ac.uk/students/academic/goodpractice/

https://www.ox.ac.uk/students/academic/guidance/skills/plagiarism?wssl=1

Intellectual Property, Ownership, and Confidentiality

The University's normal position – constructed via staff and student contracts – is that research undertaken by students it the course of their study belongs to the University. Profits deriving from the research are shared with the individuals concerned, according to well-defined and reasonably generous rules.

Where a sponsor is committing significant resources or knowhow to a project, it is possible to negotiate other terms. If such a need is anticipated – whether for a mini-project or a substantive DPhil project – it should be indicated as early as possible, to allow time for the necessary legal negotiations to take place. Clearly, it is better if such issues are avoided – but not if this artificially restricts the scope of the research. Likewise, it is better to anticipate potentially-valuable IP before a project starts than to run into difficulties later.

The report generated at the end of a project should be capable of publication, but it is normally important that it describes all the substantive work undertaken. Where necessary, it can be handled on a privileged and confidential basis, to allow time for filing of patents, etc. Where the report is to contain other sensitive data, it may be possible similarly to handle it on a confidential basis or to deliver it in two parts, one with restricted circulation, but this should be discussed as early as possible with the CDT Director.

Confidentiality and non-disclosure agreements may be needed, regardless of the publication terms of the final report, for the students and supervisors during the project, and possibly for other CDT staff. These should be arranged with the CDT at the earliest opportunity.

Where suitable clearances and working arrangements are in place, there is no restriction on a project using government protectively-marked material, but regard should be had to the needs of the report to be produced, almost certain to be unclassified.

Thom Building

Desk Space

On the 8th floor of the Thom Building, the study space has sufficient desk space and access to a laptop for each member of the cohort. Desks are not allocated specifically to an individual; therefore any personal belongings left in this space must be kept in a neat and tidy manner. Please ensure noise is kept to a minimum within this room to maintain a quiet working environment.

Lab Area

The CDT lab area can be found in the Information Engineering Building (IEB). This is only accessible via an authorised University card. As a member of the CDT, your University card should permit access at any time. University cards will be activated as the Department's entry card. To activate your entry card you will need to take your University Card to the reception in the Thom Building.

Lecture Theatre

All lectures will take place in LR7 in the IEB unless otherwise stated.

No food or drink is permitted within the lecture theatre.

Opening Hours

The Thom Building is only accessible via an authorised University card. As a member of the CDT, your University card should permit access at any time. University cards will be activated as the Department's entry card. To activate your entry card you will need to take your University Card to the main reception in the Thom Building.

Fire Alarms

Fire alarm tests are conducted periodically, and in such cases the alarm will sound for a short time and then cease. If you hear an alarm that continues longer than several seconds, please evacuate the building immediately in an orderly manner via the nearest exit (using the stairs and NOT the lift) without stopping to gather your possessions.

Office Etiquette

Please keep the office space around you neat and tidy – it is a busy environment and health and safety issues must be respected.

- Do not abandon plates and mugs to get mouldy. If you see items lying around please take them to the kitchen.
- Do not leave mobile phones switched on and unattended.
- Do not leave trailing wires across walk ways.
- Do not have mobile phones on during lectures.

Administrative Matters

Term Dates

The university term dates for this academic year are:

Michaelmas 2018	Sunday, 7th October - Saturday, 1st December
Hilary 2019	Sunday, 13th January - Saturday 9th March
Trinity 2019	Sunday, 18th April - Saturday, 22nd June

However as a graduate student, terms extend past the university term dates and as a result vacations fall at different times. Please see the module timetable found on our web pages, this is particularly relevant when making vacation travel plans etc.

University Card

Oxford University issued the first University Card to students in 1994. Since 1996 University Cards have been available for staff and visitors in all Departments and Colleges within the University. Your University Card will be available for collection from your College administrator when you arrive.

Students, staff and invited academic visitors require a University Card to gain access to libraries, computing services and some College and University buildings. The card is used for security purposes and where access control or other automated systems are in use e.g. the Thom and IEB Building. It also serves to identify those entitled to use University facilities and services. Entitlement to University IT facilities varies according to your University status.

If your card is lost, stolen or damaged please inform your College immediately. If it has been lost or stolen, reporting this loss quickly will prevent unauthorised use of your University Card for which you may be held responsible. Your College will then contact the University Card Office and a replacement will be issued, there is however a £10 replacement fee levied by the card office for this replacement.

Computer provision

It is the policy of the MPLS Division that all departments will ensure that PGR students have access to adequate personal computing resources to enable them to work effectively on their projects. The computing facilities provided will necessarily vary from department to department and group to group, dictated by specific needs for that group and the tools required.

You should discuss what computing facilities are available to you with your supervisor(s). If you are unhappy with your computing provision, you should let your supervisor(s) know, and if this issue is not resolved satisfactorily you should raise the issue with the Director of Graduate Studies.

Holidays

The CDT/DPhil in AIMS, as with all DPhils in Oxford, is a full time course and should be viewed in the same way as a full time job with regard to holidays. You are expected to work during University vacations. You are entitled to take a reasonable amount of holiday over the course of a year, in the region of six weeks total. Any holiday taken should be agreed in advance with your supervisor and the Centre Administrator.

Sickness and Compassionate Leave

If you are unwell or have need for compassionate leave you should inform your supervisor and the CDT Administrator who will be able to advise on whether you should apply for suspension of status. If you are unable to study for more than seven days due to medical reasons you should get a letter or certificate from your GP so that it can be taken into consideration if your progress is affected.

Maternity, Paternity and Adoption Leave

The University Policy on Maternity, Paternity and Adoption Leave can be found in Appendix [B] at the end of this document.

Student Counselling Service

The University has a professionally staffed confidential Student Counselling Service http://www.admin.ox.ac.uk/aad/swss/) for assistance with personal, emotional, social and academic problems. The service is available free to all matriculated undergraduate and graduate members of the University.

You may find that it is helpful to talk things through first with a friend, family member, tutor, supervisor, or your college doctor or nurse – often problems can be resolved by talking to someone like this. But if you don't feel that these people could help you, you are welcome to try the Student Counselling Service for confidential help and advice. There are times when it may be right to seek help away from the familiar daily environment and the Student Counselling Service was set up to meet just such a need. The Service has a team of professionally trained and widely experienced female and male counsellors, psychotherapists, psychologists and a psychiatrist, who are accustomed to helping people from many different backgrounds and cultures and with a wide range of personal issues.

The Oxford University Student Union (OUSU) also runs a Student Advice Service (https://ousu.org/your-union//). The Student Advice Service is a confidential listening, information and advocacy service. The service aims to provide a space for students to talk over their worries in confidence, and to offer information on a range of issues which students might encounter during their time at Oxford.

Careers Service

The Careers Service helps you (whether you are a current or recent Oxford University undergraduate or postgraduate student or a member of research staff) make and implement well-informed decisions about your career. In particular the Service encourages and enables you to appreciate and explore the range of opportunities available; to clarify your values and interests and to relate them to possible career choices; to recognise and further develop your abilities and skills; and to formulate and realise your early career plans. For more information please visit: http://www.careers.ox.ac.uk.

Sports and Physical Recreation

Oxford University has a proud and well- deserved reputation for its sporting background. There are numerous facilities available across the city. For more information please check the following websites:

Oxford University Sport: http://www.sport.ox.ac.uk

Oxford University Club: http://www.club.ox.ac.uk

Student Associations

There are a large number of associations and societies that are run throughout Oxford University. These include groups on politics, national interest, religion, science, music, media and literature, college clubs and sports. For a full list please see

http://oxforduni.groupspaces.com.

Communication and Electronic Mail

The University Computing Service automatically provides e-mail facilities for all new students, at the same time as you are given a University Card. You will also register with the local network, and can use these accounts to send and receive e-mail.

E-mail is, generally speaking, a good way of contacting members of the CDT, and most of the other academic staff you will need to reach. Please read your email frequently as there may be an urgent/important message for you from one of us.

Resources

In addition to this handbook there are some other important sources of information that you should ensure you are familiar with;

The Grey Book

The Examination Regulations, usually known for obvious reasons as the “Grey Book”, is the authoritative document on the regulations for the University degrees and examinations. You should receive a free copy of the relevant part of this book through your College at the beginning of your first term. The Grey Book defines the rules for admission to and progression through the programmes of study and the syllabus for examinations. The regulations are available online at:

http://www.admin.ox.ac.uk/examregs/information/contents/

Regulations specific to the CDT in Autonomous Intelligent Machine Systems are here:

http://www.admin.ox.ac.uk/examregs/2018-19/dtproginmpls/

The Proctors’ and Assessors’ Memorandum

The University has two Proctors, the Senior Proctor and Junior Proctor, who are responsible for making sure that the University operates according to its statutes. As well as being members of key decision-making committees, they deal with

- University (as distinct from college) student discipline,
- complaints about University matters and
- the running of University examinations.

They also carry out ceremonial duties, e.g. at degree ceremonies. The Assessor is the third senior officer, responsible particularly for student welfare and finance. The Proctors’ and Assessor’s Memorandum is the document relating to the rules and the statutes of the University which you are expected to follow. This can be found at:

http://www.admin.ox.ac.uk/proctors/info/pam/

Statements of Provision for Research Students

These detail the provisions that have been made for you by the University and the Colleges. The statement that is applicable to you is written by the Department of Engineering Science; this can be found at:

http://www.eng.ox.ac.uk/study-here/postgraduate/provision2.pdf

The CDT statement of provision can be found here:

http://aims.robots.ox.ac.uk/wp-content/uploads/2014/08/Provision-for-Graduate-Research-Students-in-the-Department-of-Engineering-Science.pdf

The Mathematical and Physical Life Science Division Graduate Handbook

The division also produces a graduate handbook which you should make sure you are familiar with. This can be found at:

http://www.mpls.ox.ac.uk

Appendix

[A] Terminology

Matriculation

Matriculation is the formal University admission procedure and is organised by your college.

University terms

The three University 'full' terms are: Michaelmas (October - December), Hilary (January–March) Trinity (April–June) Each term lasts eight weeks. But terms simply set the periods during which formal instruction is given by way of lectures, seminars and tutorials. The University functions throughout the year and as a research student you will need to work in vacation as well as in term time (apart from reasonable breaks).

Subfusc

The University Examination Regulations state that all members of the University are required to wear academic dress with subfusc clothing when attending formal university events such as matriculation and university examinations. It consists of: For women A dark skirt or trousers, a white blouse, black tie, black stockings and shoes, and, if desired, a dark coat For men A dark suit and socks, black shoes, a white bow tie and plain white shirt and collar. Candidates serving in HM Forces are permitted to wear uniform together with a gown. (The uniform cap is worn in the street and carried when indoors.)

Graduate Terminology

The following are some of the terms that are particular to graduate research students.

PRS (Probationer Research Student) – The name given to students when they are admitted to study for a research degree, usually held for the first year.

Transfer of Status – The name given to an examination that allows the student to progress from PRS to advanced status, such as D.Phil. or Master of Science by Research.

Confirmation of D.Phil. Status – The name given to an examination that allows the student to progress to the submission of the D.Phil. dissertation. Confirmation usually takes place after two years and must be within nine terms.

GSR (Graduate Supervision Report) – An on-line system for termly reporting by graduate students and their supervisors regarding the progress of the research degree. This must be completed each term.

Guidance can be found at: http://aims.robots.ox.ac.uk/current-students/

Graduate Studies Office (GSO) – An administrative centre for graduate studies, located in the Divisional Office, which manages the process of monitoring student progress, application for suspension and final examination. These applications are made on GSO forms which are available from:

http://www.ox.ac.uk/students/academic/graduates/forms/

DGS (Director of Graduate Studies)

[B] Maternity, Paternity and Adoption Leave

To support students seeking to take parental leave, the University's Student Maternity, Paternity and Adoption Leave Policy provides details of the arrangements for undergraduate, postgraduate taught, postgraduate research and overseas students who are about to have or adopt a child. The policy outlines how much leave students are entitled to, access to University facilities, graduate accommodation and childcare services and the provision for a flexible return to full-time study.

Postgraduate research students should particularly note the requirements for applying for maternity leave, including the forms required and timings for notifying their college, supervisor and Director of Graduate Study.

Full information can be found here:

http://www.ox.ac.uk/students/shw/childcare/

[C] Code of Practice on the Supervision of Graduate Research Students

A Brief Guide to the roles of research students and supervisors

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

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

1. Establish a timetable of regular meetings for detailed discussion of your progress **(**these meetings should take place at least once every two weeks averaged across the year)

2. Agree a research plan and programme of work, and to establish clear academic expectations and milestones

3. Agree with you a timetable for the submission of any written work and to return your work within a reasonable time

4. Advise you of your department's health and safety regulations. Supervisors are responsible for all aspects of safety under their control, and in particular for the safe conduct of all experiments carried out in the course of their student's research

5. Assess formally your subject-specific and personal and professional skills training needs on a regular basis and ensure you are aware of the opportunities available to meet these needs. A full review of your skills training needs should be carried out each year with your supervisor

6. Write a report on your progress at the end of each term on the graduate supervision system (GSR)

7. Ensure you are aware of the formal requirements in relation to transfer and confirmation of status and final submission, and help you to incorporate these into your plan of work

8. Inform the departmental Director of Graduate Studies through termly reporting mechanisms of any concerns about your progress, attendance or other needs

The role of the Student is to:

1. Meet with your supervisor regularly and give due weight to any guidance or corrective action proposed, keeping a written record of your discussions where appropriate

2. Draw up a research plan and timetable of work in consultation with your supervisor, and to keep relevant records of all aspects of your work

3. Reflect and report on your progress at the end of each term on the graduate supervision (GSR)

4. Take ultimate responsibility for your research programme, including the development of subject-specific, research, personal and professional skills

5. Carry out research with proper regard to good health and safety practices

For the full guide, see:

https://www.mpls.ox.ac.uk/graduate-school/information-and-resources-for-supervisors/essentials-of-supervision

[D] Regulations Relating to the Use of Information Technology Facilities

http://www.admin.ox.ac.uk/statutes/regulations/196-052.shtml

Made by the ICTC on 6 June 2002

Approved by Council on 24 July 2002
*Amended on 2 October 2003, 23 October 2003, 16 February 2006, 1 June 2006, 3 June 2010, 19 July 2012, 7 August 2015 (*Gazette*, Vol. 145, p. 694-696, 23 July 2015), 5 August 2016 (*Gazette*, Vol. 146, p. 706-708, 21 July 2016)), 1 October 2016 (*Gazette*, Vol. 146, p. 619, 9 June 2016) and 29 November 2016 (*Gazette*, Vol. 147, p. 127, 10 November 2016)*

1. In these regulations, unless the context requires otherwise, 'college' means any college, society, or Permanent Private Hall or any other institution designated by Council by regulation as being permitted to present candidates for matriculation.

2. University IT and network facilities are provided for use in accordance with the following policy set by Council:

(1) The University provides computer facilities and access to its computer networks only for purposes directly connected with the work of the University and the colleges and with the normal academic activities of their members.

(2) Individuals have no right to use university facilities for any other purpose.

(3) The University reserves the right to exercise control over all activities employing its computer facilities, including examining the content of users' data, such as e-mail, where that is necessary:

(*a*) for the proper regulation of the University's facilities;

(*b*) in connection with properly authorised investigations in relation to breaches or alleged breaches of provisions in the University's statutes and regulations, including these regulations; or

(*c*) to meet legal requirements or otherwise in the context of legal proceedings or the taking of legal advice, in accordance with such procedures as may be approved by Council for this purpose.

(4) Such action will be undertaken only in accordance with these regulations.

3. These regulations govern all use of university IT and network facilities, whether accessed by university property or otherwise.

4. Use is subject at all times to such monitoring as may be necessary for the proper management of the network, or as may be specifically authorised in accordance with these regulations.

5. (1) Individuals may make use of university facilities only with proper authorisation.

(2) ‘Proper authorisation’ in this context means prior authorisation by the appropriate officer, who shall be the Chief Information Officer or his or her nominated deputy in the case of services under the supervision of IT Services, or the nominated college or departmental officer in the case of services provided by a college or department.

(3) Any authorisation is subject to compliance with the University’s statutes and regulations, including these regulations, and will be considered to be terminated by any breach or attempted breach of these regulations.

6. (1) Authorisation will be specific to an individual.

(2) Any password, authorisation code, etc. given to a user will be for his or her use only, and must be kept secure and not disclosed to or used by any other individual. Exceptions may be made for accounts set up specifically to carry out business functions of the University or a unit within it, but authorisation must be given by the head of the unit.

7. Users are not permitted to use university IT or network facilities for any of the following:

(1) any unlawful activity;

(2) the creation, transmission, storage, downloading, or display of any offensive, obscene, indecent, or menacing images, data, or other material, or any data capable of being resolved into such images or material, except in the case of the use of the facilities for properly supervised research purposes when that use is lawful and when the user has obtained prior written authority for the particular activity from the head of his or her department or the chair of his or her faculty board (or, if the user is the head of a department or the chair of a faculty board, from the head of his or her division);

(3) with the intention of drawing people into terrorism (contrary to the University’s statutory duty under Prevent);

(4) the creation, transmission, or display of material which is designed or likely to harass another individual in breach of the University’s Policy and Procedure on Harassment;

(5) the creation or transmission of defamatory material about any individual or organisation;

(6) the sending of any e-mail that does not correctly identify the sender of that e-mail or any message appearing to originate from another individual, or otherwise attempting to impersonate another individual;

(7) the sending of any message that attempts to disguise the identity of the computer from which it was sent;

(8) the transmission, without proper authorisation, of e-mail to a large number of recipients, unless those recipients have indicated an interest in receiving such e-mail, or the sending or forwarding of e-mail which is intended to encourage the propagation of copies of itself;

(9) the creation or transmission of or access to material in such a way as to infringe a copyright, moral right, trade mark, or other intellectual property right;

(10) private profit, except to the extent authorised under the user's conditions of employment or other agreement with the University or a college; or commercial purposes (including advertising commercial services) without specific authorisation;

(11) gaining or attempting to gain unauthorised access to any facility or service within or outside the University, or making any attempt to disrupt or impair such a service;

(12) the deliberate or reckless undertaking of activities such as may result in any of the following:

(a) the waste of staff effort or network resources, including time on any system accessible via the university network;

(b) the corruption or disruption of other users' data;

(c) the unauthorised access, transmission or negligent loss of data;

(d) the violation of the privacy of other users;

(e) the disruption of the work of other users;

(f) the introduction or transmission of a virus or other malicious software into the network;

(13) activities not directly connected with employment, study, or research in the University or the colleges (excluding reasonable and limited use for social and recreational purposes where not in breach of these regulations or otherwise forbidden) without proper authorisation.

8. Software and computer-readable datasets made available on the university network may be used only subject to the relevant licensing conditions.

9. Users shall treat as confidential any information which may become available to them through the use of such facilities and which is not clearly intended for unrestricted dissemination; such information shall not be copied, modified, disseminated, or used either in whole or in part without the permission of the individual or body entitled to give it.

10. (1) No user may use IT facilities to hold or process data relating to a living individual save in accordance with the provisions of current data protection legislation (which in most cases will require the prior consent of the individual or individuals whose data are to be processed).

(2) Any individual wishing to use IT facilities for such processing is required to inform the University Data Protection Officer in advance and to comply with any guidance given concerning the manner in which the processing may be carried out.

11. Any individual responsible for the administration of any university or college computer or network system, or otherwise having access to data on such a system, shall comply with the provisions of the Information Security Policy and Data Protection Policy.

12. Users shall at all times endeavour to comply with policies and guidance issued from time to time by IT Services to assist with the management and efficient use of the University's IT facilities.

13. Connection of any computer, whether college, departmental, or privately owned, to the university network is subject to the following additional conditions:

(1) (a) Computers connected to the university network may use only network identifiers which follow the University's naming convention, and are registered with IT Services.

(b) The University's Trade Mark and Domain Name Policy specifies, inter alia, that all university activities (other than those within OUP's remit) should be presented within the ox.ac.uk domain. Any exception to this requires authorisation as defined in that Policy.

(2) (a) Owners and administrators of computers connected to the university network are responsible for ensuring their security against unauthorised access, participation in 'denial of service' attacks, etc. In particular they are responsible for ensuring that anti-virus software is installed and regularly updated, and that rules and guidelines on security and anti-virus policy, as issued from time to time by IT Services, are followed.

(b) The University may temporarily bar access to any computer or sub-network that appears to pose a danger to the security or integrity of any system or network, either within or outside Oxford, or which, through a security breach, may bring disrepute to the University.

(3) (a) Providers of any service must take all reasonable steps to ensure that that service does not cause an excessive amount of traffic on the University's internal network or its external network links.

(b) The University may bar access at any time to computers which appear to cause unreasonable consumption of network resources.

(4) (a) Hosting Web pages or other network-accessible media on computers connected to the university network is permitted subject to the knowledge and consent of the department or college responsible for the local resources, but providers of any such Web pages or other media must endeavour to comply with guidelines published by IT Services or other relevant authorities.

(b) It is not permitted to offer commercial services through systems connected to the university network, or to provide other IT facilities for any commercial organisation, except with the permission of the Chief Information Officer (IT Services); this permission may require the payment of a licence fee.

(5) Use of file-sharing technology and participation in distributed file-sharing networks may be subject to additional regulation and restriction in order to prevent excessive use of university network resources, or the use of those resources for purposes unconnected with the University. If a user has any reason to suppose that an application employs peer-to-peer (p2p) or other file-sharing technology, they should seek the advice of the IT officer responsible for the college or departmental network on which they propose to use the software.

(6) (a) No computer connected to the university network may be used to give any individual who is not a member or employee of the University or its colleges access to any network services outside the department or college where that computer is situated.

(b) Certain exceptions may be made, for example, for members of other UK universities, official visitors to a department or college, or those paying a licence fee.

(c) Areas of doubt should be discussed with the Chief Information Officer.

(7) Providing external access to University network resources for use as part of any shared activity or project is permitted only if authorised by the IT Committee (ITC), and will be subject to any conditions that it may specify.

(8) If any computer connected to the network or a sub-network does not comply with the requirements of this section, it may be disconnected immediately by the Network Administrator or any other member of staff duly authorised by the head of college, section or department concerned.

14. (1) If a user is thought to be in breach of any of the University's statutes or regulations, including these regulations, he or she shall be reported to the appropriate officer who may recommend to the appropriate university or college authority that proceedings be instituted under either or both of university and college disciplinary procedures.

(2) Access to facilities may be withdrawn under section 48 or 49 of Statute XI pending a determination, or may be made subject to such conditions as the Proctors or the Registrar or other decision-maker (as the case may be) shall think proper in the circumstances.

Examining Users' Data

15. All staff of an IT facility who are given privileged access to information available through that facility must respect the privacy and security of any information, not clearly intended for unrestricted dissemination, that becomes known to them by any means, deliberate or accidental.

16. (1) System Administrators (i.e. those responsible for the management, operation, or maintenance of computer systems) have the right to access users' files and examine network traffic, but only if necessary in pursuit of their role as System Administrators.

(2) They must endeavour to avoid specifically examining the contents of users' files without proper authorisation.

17. (1) If it is necessary for a System Administrator to inspect the contents of a user's files, the procedure set out in paragraphs (2)-(5) below must be followed.

(2) Normally, the user's permission should be sought.

(3) Should such access be necessary without seeking the user's permission, it should, wherever possible, be approved by an appropriate authority prior to inspection.

(4) If it has not been possible to obtain prior permission, any access should be reported to the user or to an appropriate authority as soon as possible.

(5) For the purposes of these regulations 'appropriate authority' is defined as follows:

(*a*) in the case of any university-owned system, whether central or departmental: if the files belong to a student member, the Proctors; if the files belong to any member of the University other than a student member, the Registrar or his or her nominee; or, if the files belong to an employee who is not a member of the University, or to a visitor to the University, the head of the department, college, or other unit to which the employee or visitor is responsible, or the head's delegated representative;

(*b*) in the case of a departmental system, either those named in (*a*) above, or, in all circumstances, the head of department or his or her delegated representative;

(*c*) in the case of a college system, the head of the college or his or her delegated representative.

[E] University Policy on Data Protection and Computer Misuse

Data Protection Policy

The primary purpose of current data protection legislation is to protect individuals against possible misuse of information about them held by others. It is the policy of the University to ensure that all members of the University and its staff are aware of the requirements of data protection legislation under their individual responsibilities in this connection.

The Act covers personal data, whether held on computer or in certain manual files.
The University is obliged to abide by the data protection principles embodied in the Act. These principles require that personal data shall:

- be processed fairly and lawfully;
- be held only for specified purposes and not used or disclosed in any way incompatible with those purposes;
- be adequate, relevant and not excessive;
- be accurate and kept up-to-date;
- not be kept for longer than necessary for the particular purpose;
- be processed in accordance with data subject's rights;
- be kept secure;
- not be transferred outside the European Economic Area unless the recipient country ensures an adequate level of protection.

Definitions and guidance on what constitutes fair and lawful processing (principle 1) may be found here.

The Act provides individuals with rights in connection with personal data held about them. It provides individuals with the right to access data concerning themselves (subject to the rights of third parties). It also includes the right to seek compensation through the courts for damages and distress suffered by reason of inaccuracy or the unauthorised destruction or wrongful disclosure of data. Information on how to make a request for access to personal data under the Act may be obtained from data.protection@admin.ox.ac.uk.

Under the terms of the Act, processing of data includes any activity to do with the data involved. All staff or other individuals who have access to, or who use, personal data, have a responsibility to exercise care in the treatment of that data and to ensure that such information is not disclosed to any unauthorised person. Examples of data include address lists and contact details as well as individual files. Any processing of such information must be done in accordance with the principles outlined above. In order to comply with the first principle (fair and lawful processing), at least one of the following conditions must be met:

- the individual has given his or her consent to the processing;
- the processing is necessary for the performance of a contract with the individual;
- processing is required under a legal obligation;
- processing is necessary to protect the vital interests of the individual;
- processing is necessary to carry out public functions;
- processing is necessary in order to pursue the legitimate interests of the controller or third parties (unless it could prejudice the interests of the individual).

In the case of sensitive personal data, which includes information about racial or ethnic origins; political beliefs; religious or other beliefs; trade union membership; health; sex life; criminal allegations, proceedings or convictions, there are additional restrictions and explicit consent will normally be required.

In relation to security (Principle 7), the Data Controller (the University) must take appropriate technical and organisational measures against unauthorised or unlawful processing of

personal data and against accidental loss or destruction of or damage to personal data and sets out specific considerations for ensuring security. Staff and other individuals should be aware that guidelines and regulations relating to the security of manual filing systems and the preservation of secure passwords for access to relevant data held on computer should be strictly observed.

Staff should also note that personal data should not normally be provided to parties external to the University. Special arrangements apply to the exchange of data between the University and the colleges. For further guidance on this, please contact data.protection@admin.ox.ac.uk.

Under principle 8, which restricts the transfer of material outside the European Area, personal data about an individual placed on the world wide web is likely to breach the provisions of the Act unless the individual whose data is used has given his or her express consent. It is important that all those preparing web pages, address lists and the like, are aware of these provisions, and seek advice from the Data Protection Officer if in doubt.
The Act specifies arrangements for the notification of processing undertaken by the Institution. The University has a wide ranging notification under the 1998 Act, which can be accessed online. Any members of staff who are uncertain as to whether their activities or proposed activities are included in the University's notification should contact the Data Protection Officer in the first instance.

A failure to comply with the provisions of the Act may render the University, or in certain circumstances the individuals involved, liable to prosecution as well as giving rise to civil liabilities. Individuals are encouraged to familiarise themselves with the general aspects of Data Protection contained in the University's guidelines to the Act, referred to above and with any specific measurements recommended by the University or their Department relevant to the particular nature of their work. Further information and advice may be obtained from Departmental Data Protection Representatives or from the University's Data Protection Officer.

Computer Use and Misuse

The University regards computer misuse as a serious matter which may warrant disciplinary action.

A policy statement, rules and guidelines on the use of the University's IT facilities are published by the ICT Committee with the approval of Council. They appear in the Proctors' and Assessor's Memorandum, and may also be found at:

http://www.it.ox.ac.uk/

[F] University of Oxford Equality Policy

http://www.admin.ox.ac.uk/eop/policy/equality-policy/

The University of Oxford is committed to fostering an inclusive culture which promotes equality, values diversity and maintains a working, learning and social environment in which the rights and dignity of all its staff and students are respected.

The University embraces diversity amongst its members and seeks to achieve equity in the experience, progression and achievement of all students and staff through the implementation of transparent policies, practices and procedures and the provision of effective support.

The University recognises that equality should be embedded in all its activities and will seek to promote awareness of equality and foster good practice. The University is committed to a programme of action to support its equality policy, to monitoring its effectiveness, and to publishing information on progress towards its equality aims.

In exercising its policies, practices, procedures and other functions, the University will have due regard to its duties under the Equality Act 2010 and to the protected characteristics[1] specified within it, as well as other relevant circumstances including parental or caring responsibilities, contract type, and working hours.

In particular, the University will:

Encourage applications for study and employment from the widest pool of potential candidates, especially where representation is disproportionately low;

Take steps to meet the particular needs of individuals from protected groups where these are different from the needs of others.

In respect of students, seek to attract applicants of the highest quality and potential, regardless of background. Decisions on the admission of students will be based solely on the individual merits of each candidate and the application of selection criteria appropriate to the course of study.

In respect of staff, ensure that entry into employment and progression within employment are determined solely by criteria which are related to the duties of a particular post and the relevant salary scale; and support career development and progression to ensure diverse representation and participation at all levels.

The University expects all members of the university community to treat each other with respect, courtesy and consideration and does not tolerate any form of bullying or harassment. It has a Policy on Harassment and Bullying, supported by a Harassment Advisory Service.

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[1] The characteristics protected by the Equality Act 2010 are: age, disability, gender reassignment, marital or civil partnership status (in employment), pregnancy and maternity, race, religion or belief (including lack of belief), sex and sexual orientation.

Application of the Equality Policy

This policy applies to all members of the university community, including students and staff, applicants, associate members, and visitors.

All members of the university community are expected to act in accordance with this policy and to treat colleagues with respect at all times.

All visitors to the University, including contractors, and people operating on behalf of the University, whether on university premises or elsewhere, have a responsibility to behave in accordance with the principles of this policy.

As appropriate within the collegiate university, individuals may additionally be due to observe the equality policies adopted by individual colleges.

[G] Plagiarism

https://www.ox.ac.uk/students/academic/guidance/skills/plagiarism?wssl=1

For further explanations on plagiarism, please see:

https://www.ox.ac.uk/students/academic/guidance/skills/plagiarism?wssl=1

[K] University of Oxford – Code of Practice Relating to Harassment

The University Policy and Procedure on Harassment and Bullying can be found at:

http://www.admin.ox.ac.uk/eop/harassmentadvice/policyandprocedure/

The Harassment Advisors for the Department of Engineering Science and the Department of Computer Science are:

Jo Valentine – Tel: 73012 - Email: jo.valentine@eng.ox.ac.uk

Julie Sheppard – Tel 73817 – Email: julie.sheppard@cs.ox.ac.uk

And you should contact them in the first instance.

[L] Policy on the Ethical Conduct of Research involving human participants and personal data

The University of Oxford seeks to protect the dignity, rights and welfare of all those involved in research (whether they are participants, researchers or third parties) and to promote high ethical standards of research. The University achieves this by:

- fostering a culture within the University that embraces the principles set down in this policy and the obligations contained in relevant legislation to protect the rights, dignity and welfare of those involved in research;

- providing ethical guidance that communicates regulatory requirements and best practice, and offering ongoing support and training to staff and students to maintain high ethical standards;

- maintaining a review process that subjects research to a level of scrutiny in proportion to the risk of harm or adverse affect.

This policy should be read in conjunction with the University's Academic Integrity in Research: Code of Practice and Procedure and reflects the principles and committments outlined in the funder-endorsed Concordat to Support Research Integrity.

Full details of the policy can be read here:

http://www.admin.ox.ac.uk/curec/policystatement/

[M] Complaints and Academic Appeals

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

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

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

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

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

Complaints

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

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

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

Academic appeals

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

10. For the examination of research degrees, or in relation to transfer or confirmation of status, your concern should be raised initially with the Director of Graduate Studies. Where a

concern is not satisfactorily settled by that means, then you, your supervisor, or your college authority may put your appeal directly to the Proctors.

11. Please remember in connection with all the cases in paragraphs 5 - 7 that:

(a) The Proctors are not empowered to challenge the academic judgement of examiners or academic bodies.

(b) The Proctors can consider whether the procedures for reaching an academic decision were properly followed; i.e. whether there was a significant procedural administrative error; whether there is evidence of bias or inadequate assessment; whether the examiners failed to take into account special factors affecting a candidate's performance.

(c) On no account should you contact your examiners or assessors directly.

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