Engineering and Physical Sciences Research Council

CENTRE FOR DOCTORAL TRAINING IN APPLIED PHOTONICS
Use-Inspired Photonic Sensing and Metrology

Research Student Handbook 2024-25

University of St Andrews
THE UNIVERSITY of EDINBURGH
University of Dundee
University of Glasgow
HERIOT WATT UNIVERSITY
University of HUDDERSFIELD Inspiring global professionals
NPL National Physical Laboratory
University of Strathclyde Glasgow

Contents

1. Welcome

Welcome to the Centre for Doctoral Training (CDT) in Applied Photonics. The CDT is a joint venture between Heriot-Watt University and the universities of Dundee, Edinburgh, Glasgow, Huddersfield, St Andrews, Strathclyde, and the National Physical Laboratory.

This handbook gives an overview of the programme structure and the administrative arrangements, including contact details for key personnel.

The CDT programme is designed to provide a platform for well-qualified engineers and scientists to undertake research within an industrial environment, while also broadening their knowledge of photonics, electronic and business topics through specialist Masters level taught courses. The knowledge and experience you will gain from this programme will enable you to pursue a career in both the technical and business sectors.

Students on the programme come from a variety of backgrounds, typically already holding an excellent first degree from a physics or engineering discipline. During your research, you will be faced with technical, intellectual, and logistical challenges, and I encourage you to make the most of your supervisors' expertise and the wider resource of knowledge distributed across the CDT.

If, at any time, you wish to contact the Centre regarding any issues or queries, please do not hesitate to get in touch either with the CDT Support Team or myself, using the cdtphotonics@hw.ac.uk email address.

I hope that you will find your time in the CDT programme to be highly stimulating, enjoyable, and productive.

Dr Bill MacPherson

Director

EPSRC Centre for Doctoral Training in Applied Photonics

2. Key Contacts

The CDT shared email account CDTPhotonics@hw.ac.uk is monitored by the CDT Support Team which includes the Centre Administrator, Centre Manager, and Training Programme Manager.

2.1 Executive

Dr Bill MacPherson
Director
W.N.MacPherson@hw.ac.uk

Prof Derryck Reid
Deputy Director
D.T.Reid@hw.ac.uk

Dr Gordon Flockhart
Deputy Director
gordon.flockhart@strath.ac.uk

Alison Low
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CDTphotonics@hw.ac.uk

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CDTphotonics@hw.ac.uk

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Centre Administrator
CDTphotonics@hw.ac.uk

2.2 Coordinators

University of Dundee	Dr Keith Wilcox	k.g.wilcox@dundee.ac.uk
University of Edinburgh	Dr Phillip Hands	philip.hands@ed.ac.uk
University of Glasgow	Prof. Martin Lavery	martin.lavery@glasgow.ac.uk
University of Huddersfield	Dr Haydn Martin	h.p.martin@hud.ac.uk
University of St Andrews	Prof. Graham Turnbull	gat@st-andrews.ac.uk
University of Strathclyde	Dr Ralf Bauer	ralf.bauer@strath.ac.uk
National Physical Laboratory	Dr Daniel O'Connor	daniel.o-connor@npl.co.uk

2.3 Student Representatives

CDTAP student representative	Euan Martin
ED&I representative	Mohanad Al-Rubaiee

Student Representative emails are not included in this handbook, as the handbook is uploaded onto the CDT website. The CDT will advise students of the representatives contact details.

2.4 Centre Contact Details

Address: CDT in Applied Photonics, Heriot-Watt University, School of Engineering and Physical Sciences, Edinburgh, EH14 4AS

Email: cdtphotonics@hw.ac.uk

Website: www.cdtphotonics.hw.ac.uk

Twitter: @CDTAP

LinkedIn: www.linkedin.com/groups/2497044/

3. EPSRC Centre for Doctoral Training in Applied Photonics

The EPSRC Centre for Doctoral Training (CDT) in Applied Photonics is a collaboration between Heriot-Watt University and the universities of Dundee, Edinburgh, Glasgow, Huddersfield, St Andrews, Strathclyde, and the National Physical Laboratory, as well as our industrial partners. The Centre is managed by Heriot-Watt University.

Research projects are offered across the full range of applied photonics technologies, including Industrial Imaging and Visualisation; Photonic Sensing and Metrology; Computationally Assisted Imaging and Sensing; Device Technologies for Photonic Imaging and Sensing.

Graduates from the programme will have gained an in-depth knowledge of the fundamentals of their chosen specialism, as well as a comprehensive understanding of essential business and management issues, and how these are applied in industry.

3.1 Engineering Doctorate (EngD) and Doctor of Philosophy (PhD)

Our students follow a doctoral programme leading to the award of the degrees of Doctor of Engineering (EngD) or Doctor of Philosophy (PhD).

Our students take master level taught courses and follow a professional skills programme, with a quarter of the time spent on taught course work and the remainder on research.

Most of our EngD students spend 38 months of their 48 months of study undertaking their research project in the premises of their industry sponsor, with our PhD students working in the university of their academic supervisor.

The Engineering Doctorate (EngD) scheme was established by the Engineering and Physical Sciences Research Council (EPSRC) in 1992, as 'its flagship postgraduate qualification'. It is a four-year doctoral degree, with an emphasis on research in a business context, with the aim of delivering the senior research managers of the future.

3.2 Equality, Diversity, and Inclusion Statement

The CDT in Applied Photonics values inclusivity and is committed to creating and sustaining a positive and supportive environment for all our applicants, students, and staff. Please click on the following link to see our Equality, Diversity, and Inclusion Statement: Equality, Diversity, and Inclusion Statement.

3.3 Programme Structure

The programme duration is four years. All students study 180 credits of postgraduate technical and business courses (SCQF Level 11 NQF/QCF Level 7). Normal entry is in September, with core technical courses delivered in two residential blocks, the first from September to December and the second from January to May. Each block comprises a set of mandatory and elective courses.

Selected courses are available in distance-learning format, allowing for flexible working and for company employees to avoid spending substantial amounts of time offsite.

Students progress to their research project by July, with EngD projects located at the company's site and PhD projects being based in one of the seven universities. The remaining taught courses are business oriented and are delivered at Edinburgh Business School on the Heriot-Watt campus. These are delivered in years two and three.

Students meet regularly for professional and computational skills workshops, delivered by the partner Universities and external facilitators.

3.4 Committees

Programme Committee

The Programme Committee, includes the members of the CDT Executive and representatives of the academic partners, has oversight of the implementation and development of the accredited and professional-development training programme, and the operational aspects of student admission and progression.

Management Committee

The CDT Management Committee's remit is to provide oversight and strategic input to the CDT Executive and to maintain a strong connection between the CDT and its Industrial Partners. Members of the Committee include the members of Programme Committee, Industrial Partners, and representatives from the EPSRC and CDT students.

Representatives of all CDT students including an Equality, Diversity, and Inclusion role attend annual Management Committee Meetings and if you wish to raise any issues at the management-level meeting, please feedback to the CDT Student Representative in advance of the meetings. Your Student Representatives are listed in the contacts section of the handbook.

Independent Advisory Committee

The purpose of the Independent Advisory Committee is to provide external perspective to the CDT by drawing on expertise from the international photonics community and other nationally funded CDTs.

3.5 Enrolment

Students should enrol every year with their host university which is where their academic supervisor is based. Students hosted at the universities of Dundee, Edinburgh, Glasgow, Huddersfield, St Andrews, and Strathclyde are required to enol every year as a non-graduating student of Heriot-Watt University to enable access IT facilities and email, as the CDT uses Heriot-Watt email addresses to contact students.

In first year, students are required to enrol at the universities of Edinburgh, Glasgow, St Andrews, and Strathclyde as these universities provide taught courses to first year students. Students are invited to enrol with these University every year and it is recommended that you do this as this will enable you to continue to use facilities such as libraries which you may find useful throughout your studies.

3.6 Guidelines and Resources

Information such as the CDT student handbook and travel policy can be found on the CDT website, along with the resources such as expense claims forms. These may be updated throughout the academic year and students should refer to the online copies for the latest information.

Guidelines and Resources - CDT in Applied Photonics (hw.ac.uk)

3.7 Key Dates

A list of key dates for each academic year will be available and published on the CDT website here: https://cdtphotonics.hw.ac.uk/current-students/key-dates/. Students will be informed by email of dates, but please check the link as it will be updated regularly and provides an overview.

3.8 Conference and Summer School

The CDT has a bi-annual conference which runs on alternative years to the Summer School. This features the research of the students with presentations and posters, and keynote speakers from academia and industry. The conference is usually held in June.

The CDT organises a bi-annual Scottish Universities Summer School in Physics (SUSSP), which are a distinguished series of international summer schools aimed at early-career researchers working at the forefront of physics.

The summer school is international with students and early career researchers from around the world attending.

The residential summer school format is very well established in the scientific community, and it is a fantastic way to interact one-to-one with leaders in the field, and to make professional contacts and friendships that last a lifetime.

3.9 Annual Report

The CDT publishes an Annual Report which can be found on the CDT website Publications - CDT in Applied Photonics (hw.ac.uk)

4. Taught and Professional Skills Courses

4.1 Taught Coursework

The programme is four years, with 25% of study time spent on taught coursework and 75% based on project work. The list of mandatory and elective courses is available on the CDT website here: https://cdtphotonics.hw.ac.uk/the-programme/

4.2 Options for a Non-standard Taught Course Route

The taught-course programme provides a mechanism for broadening your exposure to subjects which may not be covered within your research project but are nevertheless important to providing you with a broad perspective of key topics in applied photonics. Not only this, but the time spent with other students during the taught-course programme plays a significant role in developing your professional network within the CDT cohort.

Options for a non-standard taught-course route may be available in exceptional cases for those CDT students who:

- Have a Master's degree which covers core modules from the programme.
- Are pursuing a project in the interface with another discipline.
- Are company employees prior to starting the programme and require access to alternative courses suitable for distance learning study.

CDT students who wish to discuss alternative taught courses should contact the Training Programme Manager.

4.3 Approved Prior Learning (APL) Credit Exemptions

If you have completed a relevant MSc programme or course you may be eligible to request an exemption of up to 75 credits for accredited prior learning (APL). All applications must be approved by the CDT and by the Research Degrees Committee at Heriot-Watt University.

4.4 Taught Course Average and Resit Examinations

You will be awarded credit for any course for where you obtain at least 50%. A credit-weighted average of at least 50% is necessary to be eligible for the award.

Resit examinations may be necessary either to increase your credit-weighted average to at least 50%, or to obtain credit in any courses in which you have obtained below 50%. All students are offered standard reassessment opportunities, as determined by the institution delivering the course. Please consult your academic supervisor or the CDT Office if you need advice.

4.5 University of Huddersfield residential week

First year students will spend a week at the University of Huddersfield undertaking practical work for the Optical Metrology and Instrumentation course.

4.6 Edinburgh Business School (EBS) courses

If you choose to defer an EBS examination you are required to inform the CDT office at least four weeks before the date of the exam, failure to do will result in you being liable for the £160 exam rearrangement fee.

If you fail an EBS exam you will be required to pay a £160 resit examination fee. Both the above fees are paid directly to EBS. The fee of £160 is set by EBS and so is subject to change at their discretion.

It is particularly important that sufficient time is allowed for the coursework which is completed by distance-learning after the project work has commenced. Each EBS course should take about two hundred hours of work to complete in total, including attendance at online tuition. For a single business course spread over a three-month period up to one day per week may be required. Therefore, you need to therefore construct your working day or week accordingly to allow sufficient time for this. You should be allowed time within normal working hours to carry out this coursework.

4.7 Professional Skills Courses

The below tables indicate the courses you should receive each year and an overview of their content. More detailed agendas for each course will be sent to you closer to the time along with travel information or links for online courses.

Year 1

Course	Content
Mental Health and Wellbeing	Delivered by Heriot-Watt Wellbeing. This workshop will focus on techniques to manage stress and take care of your mental health and wellbeing.
Writing a Literature Review	Delivered by Electv. This course will cover how to write and structure an effective literature review. The workshop will cover grammar, style, and tone, as well as planning.
Equality and Diversity Awareness	Delivered by Equate Scotland, the national expert on gender quality in STEM. The aims of this workshop are to challenge unconscious bias and to promote benefits of diversity. It will also make students aware of their rights and obligations. The workshop will cover unconscious bias; micro-inequalities and intersectionality; being the manager of tomorrow and leading on equality; equality and diversity thinking in a STEM environment.
Responsible Research and Innovation (RRI)	Delivered by Orbit. The aims of this workshop will be to familiarise students with the key principles of RRI. The workshop will cover the foundations of RRI and a detailed analysis of the AREA framework (Anticipate, Reflect, Engage, Act). Students will also develop a reflective action plan and will be supplied with online support following training.

Year 2

Course	Content
Conference Presentation Skills	Delivered by Electv. This course develops presentation skills to deliver effective conference talks, posters and how to communicate research in a professional manner.
Intellectual Property	Delivered by patent and trademark attorneys with backgrounds in photonics, chemistry, and biochemistry. The workshop examines IP from the perspective of the inventor or technologist, covering IP, copyright designs and patents.
Digital Outreach	Delivered by Glasgow Science Centre. This workshop aims to develop confidence and understanding of digital tools and techniques to promote research to a general audience. It will also cover how to promote research using social media and multi-media tools to present research online.

Year 3

Course	Content
Academic Journal and Paper Writing	Delivered by Electv. This workshop will develop students' academic writing skills and will cover planning and writing a journal paper including style, tone, and structure.
Public Engagement and Outreach	Delivered by Glasgow Science Centre. This workshop aims to develop confidence in explaining research to a non-expert audience. This workshop will cover effective outreach strategies, how to capture the essence of research work and practical approaches that work. This will cover two days, preparation, and delivery.
Thesis Preparation and Writing	Delivered by Electv. This workshop will build on writing skills, grammar, structure, and tone. It aims to develop students' analytic, written, and presentational skills to professional academic level.

Year 4

Course	Content
Attracting your Own Research Funding	Delivered by Electv.

4.7 Taught Course Attendance

Policy across the CDT partner universities is that taught course are offered only in a campus delivery mode.

We consider equality, diversity, and inclusion to be important, and very occasionally an allowance is made to enable remote participation by a student with exceptional personal circumstances, which would otherwise prevent them from joining the CDT. Such arrangements are made only with the prior agreement of the academic course leaders and after discussion between the student and the CDT, and with the approval of the CDT Director.

Cohort-based in-person classes remain the principal delivery mode across the academic partners, and indeed are a commitment to the EPSRC under the terms of our Centre. For this reason, remote participation cannot be extended beyond those students for whom it has already been arranged in advance of their enrolment to the CDT.

5. Research Project

The research project work forms a major part of the EngD and PhD qualification. It is conventional for PhD research work to consist of a single topic, whereas an EngD degree may consist of a single topic but can also comprise several shorter projects. As research, it must involve 'knowledge creation.' This may be in the application of known techniques to solve new problems, creating knowledge about the associated engineering issues, as well as more fundamental work.

You have two supervisors for this project work: an industrial supervisor from your host company and an academic supervisor from your host university. Your project is defined and led by the company, and typically for EngD students, your primary (day-to-day) supervisor will be your industrial supervisor, with input provided from your academic supervisor on a less frequent basis. For PhD students your primary supervisor will be your academic supervisor.

You will start working on your research after completion of the taught courses. You should discuss the start date of the research phase with both your supervisors. It is recommended that you take a break after the completion of the exam period and that you should have started your research by the start of June. EngD students will normally be based in their sponsor company, with PhD students based in their host university.

5.1 Dissemination

Knowledge is only useful if it is disseminated to others, and this dissemination activity is an important part of the programme. It is expected that during the programme, you will publish at least one paper in a refereed journal, and present at least one paper at a suitable international conference. In some cases, commercial confidentiality considerations may restrict this (although often it is possible still to publish if certain key details are omitted). If external dissemination is not possible, then work should be disseminated in internal company reports. Dissemination can also be by the patent application process.

5.2 Planning

Your plans should project at least one year ahead, including deliverables, milestones, and plans for dissemination. These plans should be agreed with both your academic and industrial supervisors.

You should maintain a project plan, including a Gantt chart and a summary of the project plan should be included with your annual report.

5.3 Quarterly Reviews

The EPSRC guidelines mandate regular meetings between you and your academic and industrial supervisors. You will be asked to complete quarterly project reviews from year two onwards. It is expected that all these meeting are held face-to-face with both supervisors, however if this is not possible at least two of these meetings per year must be face-to-face with both supervisors.

You are responsible for organising quarterly review (QR) meetings, recording the actions, main discussion topics, outcomes, and decisions. Academic and industrial supervisors have a responsibility to make themselves available for progress meetings on a quarterly basis.

Review meetings should be formally recorded, and it is your responsibility to ensure that all sections of the review form are considered during the meeting. Detailed minutes are not necessary; the idea is simply to record key discussion points, decisions, and actions.

Quarterly deadlines for the submission of completed forms to the office are 31 March, 30 June, 30 September, and 31 December. However, a review meeting can take place any time in the three months preceding these dates. At the start of the QR submission month you will be sent an email to request that you complete a Quarterly Review by the end of the month and to a link to an online form you should complete. Your submitted review will be provided automatically for your supervisors for their comments.

5.4 Annual Appraisal

You will have an appraisal each year following which your progress will be reviewed by the CDT Programme Committee.

The submission date for your appraisal report will be in May. Your supervisors review your appraisal report and complete their reports. All the reports are passed onto an independent reviewer who has a meeting with the student in June.

The independent reviewer is an academic associated with the programme and may be experienced in your research field. The independent reviewer will provide you with guidance, and it is intended that you have the same independent reviewer during the four years of your study. The Independent Reviewer does not make a recommendation on progression to the next academic year.

The CDT Programme Committee, which includes representatives from all partner universities, meet in July to discuss student progression to the next academic year.

You are not required to complete the annual appraisal process of your host university.

5.5 Supervision

In addition to the review process described above, it is important that you maintain regular contact with your academic and industrial supervisors. The nature of this contact will vary, dependent on the practices of the individuals involved, and the nature of the project work. As a guide, you should ensure that you contact both supervisors at least once a fortnight - this may be in the form of a face-to-face meeting, telephone meeting, or email correspondence.

5.6 Intellectual Property Rights (IPR) and Studentship Agreement

A Studentship Agreement, covering IPR and Finance, must be signed by the CDT student, the industrial, and the host university. The foreground Intellectual Property is assigned to the Industrial Sponsor for EngD projects and is assigned to the host university for PhD projects.

5.7 Thesis/Portfolio Submission

You should consult your academic supervisor and the regulations of your host university for thesis submission information.

5.8 Viva Voca

The viva voca is an oral examination which is part of the examination process for a research degree. The viva gives the examiners the opportunity to explore your thesis in detail and it gives you an opportunity to defend your work, as well as to validate the thesis and demonstrate your skills in participating in academic discussion with research colleagues.

5.9 Funder Acknowledgment

You should acknowledge the funding provided by the funding council in any publications in which you are an author. The required format of the acknowledgement is as follows:

CDT in Applied Photonics students who entered the programme between 2019-2023.

*'This work was supported by the UKRI EPSRC Centre for Doctoral Training in Applied Photonics [EP/S022821/*1]'

CDT in Applied Photonics students who entered the programme between 2024-2029.

'This work was supported by the UKRI EPSRC Centre for Doctoral Training in Applied Photonics [EP/Y035437/1]'

6. Finance and Travel Budgets

6.1 Financial Arrangements

EPSRC provides funding, together with a contribution from your host university and top-up funding from the company sponsor.

Stipends are paid to you by your host institution which is the university at which your primary academic supervisor is based.

Funding is provided for a period of 48 months, however if you submit your initial thesis before 48 months, funding will stop at the end of the financial quarter in which you submit your initial thesis. The end month of the financial quarters used are March, June, September, and December. For example, if you make your initial submission in February, then payments can continue until the end of March, when the financial quarter ends.

If you leave the programme early, you are required to repay any advance funding. If you start full-time employment before submitting your thesis, you are no longer eligible to receive a stipend.

CDT students who are company employees will not receive a stipend and continue to receive their salary as per their company terms and conditions.

6.2 Travel and Subsistence Budgets

Students receive a personal travel and subsistence budget of £4,000, while students who started before this date receive a budget of £3,000. Your travel and subsistence budget is available to you for the duration of your study and supports your attendance at conference, workshops, and other relevant events.

You are responsible for keeping track of all expenditure on this budget, which must be pre-approved by your supervisors. For full information please review the Travel and Subsistence Budget information provided here: Guidelines and Resources - CDT in Applied Photonics (hw.ac.uk).

7. Student Support and Feedback

7.1 Student Wellbeing Services

Your health and wellbeing are important. To support you during your time on the programme there is a wide range of services available at your host institution; links to these are provided below. If you find you need support, please make use of these services. Heriot-Watt Wellbeing Services are available to all CDT students as are the services of all the partner Universities if you are enrolled with the partner university in the current academic year.

If at any time you require additional support, please contact the CDT Support Team at CDTphotonics@hw.ac.uk. Your supervisors, CDT Director, and Deputy Directors and Coordinators for each partner university are also here to help, their contact details can be found in the Key Contacts section. Your information will be treated sensitively and confidentially.

Heriot-Watt University: Student Wellbeing Services - Heriot-Watt University (hw.ac.uk)

University of Dundee: www.dundee.ac.uk/student-services

University of Edinburgh: www.ed.ac.uk/students/health-and-wellbeing

University of Glasgow: www.gla.ac.uk/study/studentlife/support

University of St Andrews: Student Services - About - University of St Andrews (st-andrews.ac.uk)

University of Strathclyde: www.strath.ac.uk/sees/studentsupportwellbeing

7.2 Change of Circumstances

We understand that during your time on the programme you may find your circumstances change. Please contact the CDT Support Team CDTPhotonics@hw.ac.uk if your circumstances change, so that we can record this and provide support as required.

7.3 Certification Letters and Jury Service

The CDT support team can provide you with a Certification Letter to confirm your status as a student, this includes your name, date of birth and confirmation of your study dates and your enrolment in the CDT in Applied Photonics, to which we can add specific information including information about your stipend which may be required for applying for accommodation and other reasons.

If all you require is a letter confirming your status as a student, an enrolment letter can be printed from MyHWU.

Should this be required, the CDT can provide you with a letter requesting that you be excused from jury service for academic reasons.

7.4 Annual Leave

Studying for a EngD/PhD requires a significant period of demanding work and therefore It is important that you take annual leave entitlement for your wellbeing.

Students are entitled to six weeks leave per year. You are responsible for agreeing your proposed leave arrangements with your industrial and academic supervisors and providing your supervisors with sufficient advance notice of planned absences.

If you are in the UK on a student visa, you should contact your host university if you will be leaving the UK during annual leave.

7.5 Medical Leave

It is important that you let your supervisors know if you are absent due to illness, injury, or other reasons. If you are unable to do this, please contact the CDT Support Team CDTphotonics@hw.ac.uk.

If you are prevented from working by illness for a continuous period of more than eight days including weekends, you must inform the CDT Support Team and submit a medical certificate.

Absences due to illness from examinations require a medical certificate to be submitted to the CDT Support Team.

The payment of your stipend for EPSRC funded students will continue for absences covered by a medical certificate for up to 13 weeks within any 12-month rolling period. If the illness lasts for more than thirteen weeks, stipend payments will be suspended.

7.6 Maternity, Paternity, Adoption and Parental Leave

EPSRC funded students are entitled to 52 weeks of maternity or shared parental leave. The first 26 weeks should be paid at full stipend rate, pro-rated as necessary for part time students. The following 13 weeks should be paid at a level commensurate with statutory maternity pay. The final 13 weeks are not paid. Partners are entitled to up to 10 days paid Ordinary Paternity Leave on full stipend. Partners may be entitled to up to 50 weeks of Shared Parental Leave; this may include paid and unpaid leave, depending on the individual circumstances, any paid leave should be at full stipend. Adoption leave should be granted on the same basis as maternity leave. There is no qualifying period for maternity, paternity, adoption, or shared parental leave. Additionally, the studentship end date should be updated to reflect the period of leave.

You must inform your supervisor if you are pregnant to enable a risk assessment to be conducted.

7.7 Suspension of Studies

During the period of your studies, you may need to take time off for health reasons or for personal reasons. If you require to do this, you should apply for a Voluntary Suspension of Studies from your host university. The time you take off will be added to the end of your studies.

If you are taking time off for health reasons, you should include a letter from your healthcare professional to go along with the request to your host university and your stipend will continue for up to 13 weeks.

If you are taking time for personal reasons, your stipend will be suspended.

7.8 Problem Resolution

If problems arise with your project work during your time as a CDT Student, you should normally discuss these with your academic and industrial supervisors in the first instance. However, if resolution is not possible by this route, you should contact the CDT Support Team, the local coordinator at your host university or any member of the CDT Executive. Relevant contact details can be found in the Key Contacts section.

7.9 Complaints

If you feel that your problem has not been resolved by your supervisors or by the CDT, a formal complaint can be initiated. All Public Sector organisations in Scotland, including Universities, are subject to a Complaints process which

is regulated by the Scottish Public Services Ombudsman (SPSO). If you wish to make a complaint then you should follow the process set out as follows, although individual universities may have slightly different processes, so please check in advance:

- *The Complaints process has two stages, a **Stage One** complaint covers matters which are easily resolved through say an explanation or apology and you can expect a response in five working days. A **Stage Two** complaint requires a more detailed investigation with resolution in twenty working days. A complaint must normally be raised within 6 months of the issue giving rise to it and the complainer has the right to ask the SPSO to review any response if they are not satisfied with the outcome.*
- *Most complaints fall into two categories i) a failure of service where something has not been provided and ii) where a person feels that they have been treated unreasonably.*
- *The Complaints Process cannot be used to revisit academic outcomes such as a failed assessment, which would come under an Appeal which is a different process. The Complaints Process cannot be used to address issues arising with your Industrial Sponsor unless they are a public sector body.*
- *The CDT Executive team can advise you or point you to the relevant information if you feel that you might have reason to make a complaint.*

If you require support during a problem resolution or complaint process, HWU Wellbeing Services (https://www.hw.ac.uk/uk/students/health-wellbeing.htm) can provide this. This service is independent, and confidential, i.e. the team will not communicate with your department without your agreement.

7.10 Feedback

If you have any questions or want to provide any feedback on your experience of the CDT on any aspect of the CDT throughout the year, you can contact your supervisors, the CDT Support Team CDTphotonics@hw.ac.uk , your host university Coordinator or CDT Director/Deputy Director. Contact details can be found in the Key Contacts section. Your information will be treated sensitively and confidentially.

Your CDT Student Representatives attend the annual Management Committee Meeting and, if you wish to raise any issues at this meeting, please provide feedback to the CDT Student Representative in advance of the meeting. The current student representatives are detailed in the Key Contacts section.

CDT students are requested to complete anonymous online feedback forms by the CDT for all taught courses and professional skills workshops. This feedback is reviewed initially by the Training Programme Manager who will raise any issues that require immediate attention with the CDT Executive. In addition to this, all feedback is reviewed at the Programme Committee meetings which are held twice yearly.

The CDT maintains a record of student comments and feedback received and the interventions made by the CDT in the Feedback Log which available for the student representatives to review and feedback to students. Feedback will be recorded in a way that maintains the anonymity of students; in specific cases where this is not possible the feedback will not appear in the Feedback Log. Further information about the Feedback Log can be found in section 9.3.

7.11 Student Representatives

The CDT has two student representative roles as listed below. These roles are occasionally filled by more than one CDT student. The representatives attend the annual CDT Management Committee Meeting.

- Cross-Cohort Representative - discusses all issues across cohorts and provides updates to the Management Committee of issues that have arisen affecting students and suggestions from students and provides feedback to students.
- Equality, Diversity, and Inclusion Representative - provides updates to the Management Committee on

issues, suggestions relating to Equality, Diversity, and Inclusion within the CDT and provides feedback to the students.

An online poll is held for students to vote for their representative. The CDT issues a call for self-nominations for new representatives annually or when a representative resigns. If there are no nominations, the existing representatives can opt to remain the representative for a further year to a maximum of two years. If there are nominations, the existing representatives can opt to take part in the poll for a second year.

8. Award and Graduation, Extensions and Early Exit

8.1 Award and Graduation

After you have submitted the final version of your thesis and your examiners have submitted their reports, your award will be considered at the next available meeting of the relevant committee, after which you will be advised that you are eligible to graduate from your host university.

8.2 Extensions to Study

You should submit your thesis by the end of the 4-year funding period. If there are extenuating circumstances, an unfunded extension may be granted on application to your host university. Your supervisor will be able to guide you through the process.

If you are requesting an extension as health reasons have impacted on your progress, you should include a letter from your healthcare professional to go along with the request to your host university, and your stipend should continue for up the 13 weeks.

8.3 Early Exit Qualification

If you are considering leaving the programme, please discuss with your supervisors or contact the CDT Support Team.

If you decide to leave the programme, you may be eligible to leave with an exit qualification. The exit qualification you would be eligible for depends on the stage at which you leave the programme, the number of courses you have successfully completed, and the level and depth of the research you have undertaken.

You will be required to return any library books or university equipment or course materials, and you may be required to return a portion of your funding and pay any outstanding university debts.

9. Standards

9.1 Postgraduate Code of Practice

You are required to abide by the regulations of your host university and conform with its Policies, Procedures, Ordinances and Regulations. The following web links are to the Postgraduate Research Code of Practice or equivalent for your host institution. You should confirm with your academic supervisor if you have any further codes of practice that you should adhere to at your institution.

Heriot-Watt University: Postgraduate Research Degree Candidate Code of Practice (hw.ac.uk)

University of Dundee: Postgraduate Research Essentials | University of Dundee

University of Edinburgh: Code of Practice 2021 (ed.ac.uk)

University of St Andrews: Rules and regulations | Current Postgraduates | University of St Andrews (st-andrews.ac.uk)

University of Glasgow: University of Glasgow - Research - Our research environment - Support and Development for Postgraduate Researchers - PGR Code of Practice

University of Strathclyde: Policy_and_Code_of_Practice_for_Postgraduate_Research_Study.pdf (strath.ac.uk)

9.2 Hours of Work

The four years funding provided for the programme assumes students will average about 40 hours of work each week, including coursework. It is useful to set a regular pattern of work and the hours in which this work is conducted should be agreed with your industrial supervisor or academic supervisor, to fit in with the practices of the company or research group in which you are conducting the work.

9.3 Student Communication and Feedback Policy

The CDT is committed to open and transparent governance as far as is possible within the limits of personal and commercial confidentiality, and legal compliance. We also recognise the importance of the timely communication to students the subsequent actions taken by the CDT or by individual academic partners in response to student feedback on course delivery or other aspects of the academic experience.

The policy aims to formalise aspects of practice that already exist and to enhance the structure of engagement between the student representatives and the CDT. For this policy, ‘student representatives’ refers to the student members of the Management Committee with the roles of Cross-Cohort Representative and Equality, Diversity, and Inclusion Representative.

The CDT will:

1. Maintain a record of student comments and feedback received and the interventions made by the CDT. This will be known as the Feedback Log and will be made available to the Student Representatives. Feedback will be recorded in a way that maintains the anonymity of students; in specific cases where this is not possible the feedback will not appear in the Feedback Log.

2. Communicate Management Committee business with the CDT cohort by aiming to make available the minutes of Management Committee meetings to all students within eight weeks of the meeting.

In general, we expect that these will be the same minutes that are distributed to the Management Committee, but there may be times where certain content is redacted to protect the privacy of individuals or for reasons of company commercial confidentiality. All members of the Management Committee, including the student representatives, will have an opportunity to comment on the accuracy of the full minutes before distribution, and any inaccuracies will be corrected before the final set of minutes is issued.

3. Hold a pre-meeting between the Director and the student representatives approximately two weeks before the management committee to discuss any agenda items they wish to bring to the meeting. This pre-meeting will allow the CDT to help distribute in advance any information relating to such items, and, where necessary, to collect any information which might be needed to inform discussion at the Management Committee.

9.4 Professional Institutes and CEng Accreditation

It may be possible to obtain CEng accreditation through the Institute of Physics (IOP). The requirements for CEng accreditation through the IOP, as opposed to another professional body, are well matched to the programme process. Specifically, you do not need a BEng or MEng degree as a prerequisite.

If you are interested in applying for CEng via the IOP, you should be able to use an edited version of your thesis as a key part of the evidence required. In brief, the IOP asks for:

- a technical report of up to 10,000 words. From their guidance notes, a condensed version your thesis would be ideal.
- a professional report of up to 3,000 words, simply mapping your experience to the Engineering Council's 16 competencies.
- two supporters, both CEng holders.
- degree certificates, application form, etc.

The IOP provides information about the requirements on their website: https://membership.iop.org/chartered-engineer-ceng. It can also help in finding a professional mentor for you. The CDT can also help.

You should be aware that often it takes time to build up a record of your experience and how you have met the Engineering Council's competencies. If you wish to work towards a CEng accreditation, you should begin building up a map of the professional competencies to your experience as early as possible.

Some of the CDT's larger industrial partners have a graduate training programme which embeds working towards satisfying the CEng competency framework. If this applies in your company, you should ask your industrial supervisor if you can access this component of their graduate training programme.

Typically, there will be some competencies (e.g., C3 Lead Teams and Develop Staff) which you will be unable to satisfy based on your CDT experience alone, however it will often be possible to meet these following a brief period of relevant employment after graduation.

9.5 Roles and Responsibilities

The CDT in Applied Photonics is a partnership between industry and academia, with the collaboration between CDT students, academic and industrial supervisors central to this. These roles and responsibilities have been developed in collaboration with CDT students, academic and industrial supervisors to provide guidance best practice in each of the roles.

CDT Students

Best Practice

- Adhere to the rules and regulations of your host institution (resources, working hours etc.).
- Take ownership in the detailed planning and scheduling of your project, including the identification of objectives, timescales, milestones, and deliverables.
- Research current knowledge and keep literature review up to date.
- Manage your time and budget effectively to complete your research and fulfil your commitments.
- Organise Quarterly Reviews and use them to raise issues and guide progress.
- Meet deadlines set by the CDT.
- Keep a record of your work through lab books and internal reporting.
- Inform your supervisors and the CDT in a timely fashion if you are experiencing any difficulties.
- Commit to learning for taught courses and professional skills workshops.
- Seek out opportunities to further your skills.
- Participate in outreach activities.
- Facilitate regular contact between industrial and academic supervisors.
- Act as a respectable and responsible ambassador for the CDT.
- Attend CDT Conferences and Summer Schools.
- Disseminate your work to the wider scientific community.
- Acknowledge EPSRC in any publications or presentations.
- Adhere to the Travel Expenses Policy. Guidelines of which can be found in this document and on Vision.

Things to Avoid

- Taking periods of absence without informing supervisors and the CDT office.
- Becoming isolated from supervisors and the CDT office.
- Leave writing your thesis until the last minute.

Academic Supervisors

Best Practice

- Support the student in reaching the appropriate level of academic rigour in their research e.g., in their quality of writing, literature reviewing and research methodology.
- Provide input to the research e.g., things to try, papers to read, introductions to useful contacts.
- Act as a channel to the offices and processes of the student's host university e.g., by facilitating the nomination of thesis title, thesis examiners, submission of thesis etc.
- Participate in Quarterly Reviews i.e., minimum 6-monthly in-person visits to the company and minimum 3-monthly conversations joint (phone or face-to-face) with the student and industrial supervisor.
- Engage with the student between Quarterly Review meetings e.g., phone call/Skype/email update at least monthly.
- Proofread the student's draft papers, conference submissions and thesis.
- Encourage the student to publish by suggesting suitable journals and helping them negotiate IP issues.
- Use your £14K budget to engage with the student (e.g., travel to the company). Once these commitments are covered, you may use the budget for any legitimate research expenditure.
- Brief the external examiner about the differences in nature between PhD and EngD theses and the corresponding differences in the expected outcomes.
- Attend supervisor training sessions.
- Provide timely feedback.
- Support the student in the wider skills training programme of the CDT.

Things to Avoid

- Directing the research programme, unless with the agreement of the company.
- Expecting to appear on all articles or conference submissions, where a significant practical or intellectual contribution has not been made.
- Exceeding £14K total expenditure, even if there appears to be more money in the budget, since the other funds are used to pay the student stipend.

Industrial Supervisors

Best Practice

- Make introductions to allow the student to feel at home quickly in the company.
- Facilitate any training required by the student.
- Ensure the student is sufficiently resourced (office/lab accommodation; consumables; IT).
- Provide an industrial research vision for the project.
- Allow sufficient scope for the student to generate new knowledge with a breadth and depth sufficient to support a doctoral thesis.
- Agree and regularly review a project plan with the student.
- Work with the student and academic supervisor to navigate barriers to publication consensually.
- Participate in quarterly reviews i.e., host the academic supervisor for minimum 6-monthly in-person visits to the company and holding minimum 3-monthly conversations joint (phone or face-to-face) with the student and academic supervisor.
- Contribute to proofreading the student's draft papers, conference submissions and (of course) thesis.
- Attend supervisor training sessions.
- Provide timely feedback.
- Support the student in the wider skills training programme of the CDT, noting they occasionally will need to be absent from the company for skills training and business-school exams.
- Promote the CDT inside and outside the company.
- Attend the CDT annual conference, where possible.

Things to Avoid

- Deploying the student on non-research work, unless in exceptional circumstances and for a brief period.
- Embargoing publication of research results unnecessarily.