Programme of Study for the degree of Doctor of Philosophy 2021/22

1. Candidates may undertake study for the degree of PhD in any Faculty of the University or accredited Institution, or in association with another institution approved as a partner to offer Joint degrees with the University, under the supervision of a member of staff who satisfies the eligibility requirements specified by the relevant committee. Supervisors will be appointed at the commencement of the programme of study.

2. The requirements for the degree, including periods of study and examination requirements are set out in Ordinance X and its associated regulations[1].

3. All candidates for the degree of PhD are expected to undertake appropriate generic training. Candidates in some Faculties may be required to undertake some elements of advanced study and complete written examinations satisfactorily before proceeding to the submission of a thesis.

Split-site Candidatures

Three models of split-site PhD study are available:

4. Model A involving a strategic partnership with a commercial/industrial organisation or an international academic or research institution

Subject to an agreement being reached between the University and the other organisation, applicants may be accepted for full-time PhD research degree study for a standard period of study of 3 years. Applicants will normally be required to have obtained a relevant degree of at least equivalent to a UK upper second class honours degree as well as at least 6.5 on IELTS (with no component below 6.0) or an equivalent English language qualification. Some Schools may require higher levels of English language. There is normally a minimum requirement of 18 months full-time study in residence at the University of Leeds but overall the candidate is normally required to spend 50% of the candidature in each organisation.

5. Model B involving individual PGRs studying mainly on a part-time basis

Subject to a statement of support from the applicant's employer, which guarantees, with appropriate evidence, that relevant resources and facilities are in place for the research, applicants may be accepted for PhD research degree study. Applicants will normally be expected to have obtained a relevant degree at least equivalent to a UK upper second class honours and a Master's degree as well as at least 6.5 on IELTS (with no component below 6.0) or an equivalent English language qualification. Some Schools may require higher levels of English language. The period of study will extend over a standard period of five years and the method of study will be mainly part-time with normally full-time attendance in residence at the University of Leeds for a period of at least 8 months over the course of the programme. The first two months should normally be undertaken at the commencement of the candidature in full-time attendance in residence at Leeds.

6. Model C involving individual PGRs studying on a full-time basis

Subject to a statement of support from the applicant's employer, or an agreement being reached between the University and the other organisation, which guarantees, with appropriate evidence, that relevant resources and facilities are in place for the research, applicants may be accepted for full-time PhD research degree study for a standard period of study of 3 years. Applicants will normally be required to have obtained a relevant degree of at least equivalent to a UK upper second class honours degree and a Master's degree, as well as at least 6.5 on IELTS (with no component below 6.0) or an equivalent English language qualification. Some Schools may require higher levels of English language. There is normally a minimum requirement of 6 months full-time study in residence at the University of Leeds.

7. Distance Learning

[1] The normal standard period of study for a full-time PhD is 3 calendar years, except for certain schemes including some within the Faculty of Biological Sciences and within Centres for Doctoral Training where the normal period of full-time study is 4 calendar years. Special arrangements may also apply to the split-site programmes and to programmes leading to joint awards with other institutions.

PhD study by Distance Learning is available to candidates registered in the Faculty of Arts, Humanities and Cultures. Applicants will normally be required to have obtained a relevant degree of at least equivalent to a UK upper second class honours degree as well as at least 7.0 on IELTS (with no component below 6.5) or an equivalent English language qualification.

The programme commences each month in line with the FT PhD.

There are two models of Distance Learning available:

Full-time Distance Learning

The period of study will extend over a standard period of three years and the method of study will be full-time. There is normally a minimum requirement for residences at the University of Leeds as follows (all residencies at Leeds are for one week):

(Year 1): Residence 1 - Induction
(Year 1): Residence 2 - Transfer
(Year 2): Residence 3 - Annual Review
(Year 3): Residence 4 - Either submission and viva or Annual Review
(Year 4 overtime): Residence 5 Submission and viva

Part-time Distance Learning

The period of study will extend over a standard period of five years and the method of study will be part-time. There is normally a minimum requirement for residences at the University of Leeds as follows (all residencies at Leeds are for one week):

(Year 1): Residence 1- Induction
(Year 2): Residence 2 - Transfer
(Year 3): Residence 3 - Annual Review
(Year 4): Residence 4 - Annual Review
(Year 5): Residence 5 - Either submission and viva or annual review
(Year 6 overtime): Residence 6 - Either submission and viva or annual review

Progress and Monitoring

8. Candidates will in the first instance be accepted either as a provisional candidate for the degree of PhD or as a postgraduate research student. After the initial period of provisional registration, candidates are subject to the process whereby they are formally assessed[2] and, if successful in the assessment, are transferred to the specific degree category of PhD or MPhil.

9. Full-time candidates must undergo assessment by no later than 12 months of study. Part-time candidates must undergo assessment by no later than 24 months of study. Candidates must be present at the University of Leeds for the transfer assessment, including candidates studying under split-site arrangements. This equally applies to a second (or repeat) transfer assessment, should one be needed. If they are unable to do so their studies may have to be suspended until such a time as they are able to attend for assessment.

10. The decision to transfer will be based on the submission of appropriate material for assessment and all Postgraduate Researchers (PGRs) must undergo an oral examination by an assessment panel which must include at least two independent individuals who have not been involved in the supervisory support of the candidate. The PGR will be interviewed by the assessment panel in the form of a viva voce examination.

11. A case for an extension to the period of provisional registration would have to be made on academic grounds to the relevant committee. In such cases any period of extension will be no more than six months.

[2] For those programmes which have a standard period of study of four years full-time and the assessment for transfer to a specific degree category of either PhD or MPhil normally takes place towards the end of the second year.

12. The arrangements for formal reports on progress by the supervisor(s) are described in the University Code of Practice for Research Degree Candidatures which is published in the Postgraduate Researcher Handbook which is available at: http://ses.leeds.ac.uk/researchdegreepolicies

Examination and Assessment

13. Candidates must present a thesis[3] (100,000 words maximum) on the subject of their research and satisfy the examiners as specified in Ordinance X and its associated Regulations.

14. Except with the special permission[4] of the relevant committee, every candidate is required to submit their thesis for examination for the degree of Doctor of Philosophy by no later than:
    - the end of the fourth year after their entry upon the approved course of full-time study and research which includes Model A of the split-site arrangements
    - the end of the fifth year after their entry upon an approved course of full-time study and research where the standard period of study is four years
    - the end of the seventh year after their entry upon the approved course of part-time study and research including Model B of the split-site arrangements

15. As permitted in Ordinance X (Article 8), when the progress and quality of the candidate's research justify it, the relevant committee is empowered to reduce the required minimum period of study provided that no candidate shall submit for examination of the thesis before the completion of:
    - a total of two calendar years of full-time study
    - a total of three calendar years of part-time study
    - a total of three calendar years for candidates studying under Models A and B of the split-site arrangements

16. Following examination, the examiners will be asked to make one of the following recommendations
    a) Pass
    b) Pass (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): these corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or minor deficiencies are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received.
    c) Referral (see 16 below)
    d) Recommend award of MPhil[5]: for those candidates who fail to achieve the standard for the award of a PhD but who nevertheless satisfy the criteria for the award of the degree of MPhil.
    e) Recommend award of MPhil[5] (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): These corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or 'minor deficiencies' are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received
    f) Referral for MPhil[1] (see 16 below)
    g) Fail: the candidate has no further opportunity for submission.

17. If the thesis is not considered to be of sufficiently high standard to recommend the award of the degree of Doctor of Philosophy but there is evidence of the potential of a successful PhD or MPhil submission, then on the recommendation of the examiners either:
    a) The candidate will be granted permission to resubmit the work in a revised form for the degree of PhD within a period of eighteen months, on one occasion only and on payment of an additional fee.
    b) The candidate will be granted permission to resubmit the work in a revised form for the degree of MPhil within a period of twelve months, on one occasion only and on payment of an additional fee.

[3] Except where an alternative method of submission is stipulated in the Regulations for Ordinance X. In Schools where an alternative form of submission is permitted, specific regulations for the binding and presentation of the work are published.
[4] The 4 year Biological Sciences PhD has a maximum period of study of 48 months
[5] In these circumstances the degree of MPhil may not be awarded with distinction

18. Any candidate whose thesis has been referred for the degree of PhD may, subject to approval by the Head of their School, exercise the option of resubmitting a revised thesis for consideration for the award of the degree of Master of Philosophy.

19. The recommendation of the examiners is subject to confirmation by the Graduate Board's Examinations Group which will consider the examiners' report. In the case of joint awards with another institution the recommendation of the Examiners is also subject to confirmation by the other institution.

20. The Learning Outcomes for the degree of Doctor of Philosophy are published below.

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for PhD

1. Learning Outcomes

On completion of the research programme PGRs should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry
- evaluating their own achievement and that of others
- self-direction and effective decision making in complex and unpredictable situations
- independent learning and the ability to work in a way which ensures continuing professional development

3. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions
- make an original contribution to the field

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis[6] and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice
- drawing on a range of perspectives on the area of study
- evaluating and criticising received opinion
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis

[6] or alternative form of thesis

Programme of Study for Integrated degrees of PhD and Master (MA, LLM or MSc) 2021/22

See the Programme of Study entry for the individual integrated PhD and Masters programmes in subsequent sections for further information.

1. The Integrated degrees of PhD and Master, which provide for the integrated award of both degrees, are undertaken by a combination of taught specialist modules, training and skills courses and research study. This integrated approach offers postgraduate researchers (PGRs) a learning environment in which to broaden and deepen subject knowledge while providing the opportunity for inter-disciplinary study to extend their expertise in new directions.

2. The University currently offers the following programmes leading to the Integrated degrees of PhD and Master:

    - Integrated degree of PhD and MSc in Oral Science (Paediatric Dentistry)[1]
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    - Integrated degree of PhD and MSc (Medical and Biological Engineering)[1]
    - Integrated degree of PhD and MSc (Bioenergy)[2]
    - Integrated degree of PhD and MSc (Fluid Dynamics)
    - Integrated degree of PhD and MSc (Tissue Engineering and Regenerative Medicine – Innovation in Medical & Biological Engineering) [3]
    - Integrated degree of PhD and MSc (Complex Particulate Products and Processes) [4]
    - Integrated degree of PhD and MSc (Data Analytics and Society)
    - Integrated degree of PhD and MSc (Artificial Intelligence for Medical Diagnosis and Care)

3. Applicants will normally be required to have obtained a relevant degree of *at least* equivalent to a UK upper second class (2:1) honours degree. International PGRs will normally be required to have achieved at least 6.0 on IELTS (with no component below 5.5) or an equivalent English language qualification. Some Schools may require higher levels of English language. There is normally one entry point for the integrated degrees of PhD and Master in September/October of each academic session.

Progress and Monitoring

4. The integrated degrees of PhD and Master are normally 4 year full-time programmes of study.

5. Progress is formally reviewed at appropriate stages and, at least annually, candidates are required to undergo a thorough review process, emphasising the different stages in the progress, development and training. The arrangements for formal reports on progress by the supervisors are described in the University Code of Practice for Research Degree Candidatures. A training plan must be in place within one month of starting the research project.

6. The relevant committee has modified the arrangements for provisional registration for the integrated degrees of PhD and Master in accordance with article 5c of Ordinance X. Candidates are accepted for study to the registration category of Postgraduate Research. Upon completion of the first year, candidates are required to undergo a review of their academic progression, against the rules of the award as outlined in the relevant Programme of Study, to determine if transfer to Provisional PhD status is approved.

[1] Entry to this programme was suspended from 2018-19
[2] Entry to this programme was suspended from 2019-20
[3] Entry to this programme was suspended from 2019-20
[4] Entry to this programme was suspended from 2019-20

7. If successful in transfer to Provisional PhD status, candidates will be required to undergo the formal assessment procedure for transfer to full PhD status before the end of the second year of study. The decision to transfer to full PhD status will be based on the submission of the prescribed documentation for assessment and all PGRs must undergo an oral examination by an Assessment Panel which must include at least two independent individuals who have not been involved in the supervisory support of the candidate. The PGR will be interviewed by the Assessment Panel in the form of a viva voce examination.

Supervision

8. Supervisor(s) will be appointed for each PGR at the commencement of the candidature to guide the PGR through an appropriate pathway of optional courses and to assist with planning for the integration of all the elements of the programme.

9. In all years of study the supervisors will take responsibility for ensuring that appropriate skills and other training is undertaken and that the University's policy on Personal Development Planning is applied.

Examination and Assessment

10. The normal expectation is that candidates will successfully complete a number of modular courses before the start of Year 3 of study and will submit their theses for examination by the end of Year 4, although an additional overtime period of up to 12 months will be available if necessary. Some candidates may leave the programme at an earlier stage and may be awarded an alternative qualification, subject to fulfilling the relevant requirements.

11. Candidates are required to submit a thesis (100,000 words maximum) for examination by no later than the end of the fifth year after entry upon the approved course of study and research.

12. When the progress and quality of the candidate's research justify it, the relevant committee is empowered to reduce the required period of study provided that no candidate shall submit a thesis for examination before the completion of a total of three calendar years of study.

13. A University Examination Board for Taught programmes will confirm the award of the degree of Master (if the candidate has satisfied the regulations for the award of that degree under Ordinance XI (Taught Postgraduate Awards) under the relevant rules for award.

14. Following examination, the examiners will be asked to make one of the following recommendations
    a) Pass
    b) Pass (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): these corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or minor deficiencies are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received.
    c) Referral (see 15 below)
    d) Recommend award of MPhil[5]: for those candidates who fail to achieve the standard for the award of a PhD but who nevertheless satisfy the criteria for the award of the degree of MPhil.
    e) Recommend award of MPhil[6] (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): These corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or 'minor deficiencies' are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received

[5] In these circumstances the degree of MPhil may not be awarded with distinction
[6] In these circumstances the degree of MPhil may not be awarded with distinction

f) Referral for MPhil1 (see 15)
g) Fail: the candidate has no further opportunity for submission.

15. If the thesis is not considered to be of sufficiently high standard to recommend the award of the degree of Doctor of Philosophy but there is evidence of the potential of a successful PhD or MPhil submission, then on the recommendation of the examiners either:
    a) The candidate will be granted permission to resubmit the work in a revised form for the degree of PhD within a period of eighteen months, on one occasion only and on payment of an additional fee.
    b) The candidate will be granted permission to resubmit the work in a revised form for the degree of MPhil within a period of twelve months, on one occasion only and on payment of an additional fee.

16. Any candidate whose thesis has been referred for the degree of PhD may, subject to approval by the Head of their School, exercise the option of resubmitting a revised thesis for consideration for the award of the degree of Master of Philosophy.

17. The recommendation of the examiners is subject to confirmation by the Graduate Board's Examinations Group which will consider the examiners' report. In the case of joint awards with another institution the recommendation of the Examiners is also subject to confirmation by the other institution.

18. Candidates for the Integrated degrees of PhD and Master are required to meet the learning outcomes for both the degrees of PhD and Master, which are described in the additional information for the specific Integrated degree programme.

Award of Master of Philosophy

19. Candidates for the Integrated Degrees of PhD and Master, who have fulfilled the requirements for the award of the degree of Master and then proceed to examination for the award of the degree of PhD, but who are not successful in the PhD examination are eligible for the award of the degree of MPhil if they satisfy the requirements for examination set out in Article 13 of Ordinance X. If successful in the examination for the MPhil degree such candidates will receive two separate degree awards, namely the relevant degree of Master (MA, LLM or MSc) and the award of the degree of Master of Philosophy.

Course Failure

20. Candidates will normally be deemed to have failed the Programme of Study for the Integrated degree of PhD and Master and be asked to withdraw from the programme if:
    a) they fail to meet the requirements for the award of the degree of Master (as set out in Ordinance XI (Taught Postgraduate Awards))
    b) unless otherwise stated in the programme of study entry for the specific subject area, they fail to pass at least 180 taught credits with at least 50% in each course undertaken
    c) they fail to satisfy the Examination Board in Year 1 and the transfer panel in Year 2
    d) they fail to satisfy the examiners in the research thesis (there is no opportunity for resubmission where the examiners recommend that a research degree thesis be failed).

21. Candidates who do not achieve a satisfactory standard at the first attempt in examinations or assessments for modular courses must undertake any re-examination, as set out in Regulation 18 of the Regulations for Ordinance X

22. Candidates are required to pass to the required standard all compulsory courses and modules which form part of their prescribed programme of study.

Exit Paths

Integrated degrees of PhD and Master (MA, LLM or MSc)

23. Candidates are eligible for the award of Postgraduate Certificate, Postgraduate Diploma and Mastership qualifications at certain exit points in the programme, provided that they have satisfied the relevant regulations for the award of these qualifications as set out in Ordinance XI (Taught Postgraduate Awards) and the Rules for award, if they either decide to leave or do not progress beyond the relevant stages.

- Postgraduate Certificate (60 taught credits)
- Postgraduate Diploma (120 taught credits unless otherwise stated)
- MA, LLM and MSc (150 taught credits)

Programme of Study for Integrated Degree of PhD and MSc In Oral Sciences (Paediatric Dentistry)[1] 2021/22

Entry to the programme of study suspended with effect from 2018/19

Year One (a total of 120 credits in taught modular courses will be taken as well as the research project)

The candidate will commence research under the direction of their supervisor(s)

Transferable skills training (10 credits)

DSUR5055M Transferable Skills 1 (10 credits)

Generic skills training (50 credits)

DSUR5061M Introduction to Research Methodology and Ethics (10 credits)
DSUR5059M Core Epidemiology (10 credits)
DSUR5104M Statistical Methods (10 credits)
DSUR5068M Medical Emergencies (10 credits)
DSUR5069M Dental Radiology (10 credits)

Specialised subject module (60 credits)

DSUR5125M Paediatric Dentistry 1 (468 clinical hours) (60 credits)

Year Two (a total of 120 credits in taught modular courses will be taken as well as the research project)

The candidate will continue research under the direction of their supervisor(s)

Transferable skills training (10 credits)

DSUR5056M Transferable skills 2 (10 credits)

Specialised subject modules (50 credits)

DSUR5126M Paediatric Dentistry 2 (648 clinical hours) (50 credits)

During Years 1 & 2 candidates will also undertake:

DSUR5131M Integrated Research Project (60 credits)

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[1] Entry to the programme of study suspended with effect from 2018/19

Year Three (a total of 60 credits in non-credit bearing taught modular courses will be taken as well as the research project)

The candidate will continue research under the direction of their supervisor(s)

Specialised subject modules (60 credits)

DSUR5127M Paedodontics 3 (540 clinical hours) (40 credits)

Year Four and Year Five the candidate will continue research under the direction of their supervisor(s)

Optional and compulsory non-credit bearing training and skills modules

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment – overall programme PhD and MSc in Oral Sciences (Paediatric Dentistry)

1. Learning Outcomes

To meet the Learning Outcomes through a combination of taught components, transferable skills training and research components the students will:

- interpret and communicate knowledge relevant to their speciality through research and scholarship of publishable quality that would satisfy peer review
- present and defend research outcomes which extend the forefront of paediatric dentistry
- demonstrate a detailed knowledge of the subject area and expertise in generic and subject or professional skills
- demonstrate competency in clinical skills and patient management where appropriate
- relate theoretical/academic knowledge to clinical practice and understand the relevance of their research and knowledge to clinical dentistry
- take a proactive and self-reflective role in working and develop professional relationships with other professionals, and with patients and carers where appropriate
- formulate ideas and hypotheses proactively and develop, implement and execute plans by which to evaluate these
- be able to articulate complex ideas and discuss them with peers and other professionals
- critically evaluate current issues, research and advanced scholarship
- understand relevant ethical and legal issues
- understand relevant health and safety issues
- demonstrate responsible working practice

2. Transferable (Key) Skills

Students will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry;
- evaluating their own achievement and that of others;
- self-direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;

3. Learning Context

The learning context will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for students to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions;
- make an original contribution to the field

Students will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work;
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice;
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice;
- drawing on a range of perspectives on the area of study;
- evaluating and criticising received opinion;
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis.

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for MSc in Oral Sciences (Paediatric Dentistry)

As the degree programme contains a Masters level qualification, candidates are required to achieve the Masters learning outcomes at the appropriate stage within the Integrated PhD and Masters programme.

1. Learning Outcomes

On completion of the programme students should have shown evidence of being able:

- to demonstrate in-depth, specialist knowledge and mastery of techniques relevant to the discipline and/or to demonstrate a sophisticated understanding of concepts, information and techniques at the forefront of the discipline;
- to exhibit mastery in the exercise of generic and subject-specific intellectual abilities;
- to demonstrate a comprehensive understanding of techniques applicable to their own research or advanced scholarship;
- to take a proactive and self-reflective role in working and to develop professional relationships with others;
- proactively to formulate ideas and hypotheses and to develop, implement and execute plans by which to evaluate these;
- critically and creatively to evaluate current issues, research and advanced scholarship in the discipline.

2. Transferable (key) skills

Masters (Taught) students will have had the opportunity to acquire the following abilities as defined in the modules specified for the programme:

- the skills necessary to undertake a higher research degree and/or for employment in a higher capacity in industry or area of professional practice;
- evaluating their own achievement and that of others;
- self direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;
- critically to engage in the development of professional/disciplinary boundaries and norms.

3. Learning Context

For Masters (Taught) students the learning context will include the analysis of, and decision making in, complex and unpredictable situations. The structure of the programme will provide breadth and/or depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for students to develop:

- interests and informed opinions
- their involvement in the design and management of their learning activities
- their communication of their conclusions

Students will be expected to progress to fully autonomous study and work.

4. Assessment

Achievement for the degree of Master (taught programme) will be assessed by a variety of methods in accordance with the learning outcomes of the modules specified for the year/programme and will involve the achievement of the students in:

- evidencing an ability to conduct independent in-depth enquiry within the discipline;
- demonstrating the ability to apply breadth and/or depth of knowledge to a complex specialist area;
- drawing on a range of perspectives on an area of study;
- evaluating and criticising received opinion;
- make reasoned judgements whilst understanding the limitations on judgements made in the absence of complete data.

Programme of study for the Integrated degree of PhD and MSc (Medical and Biological Engineering)[1]

Entry Requirements: *This programme no longer recruiting* with effect *from 2014 -2015*

Year One (a total of 115 credits in taught modular courses will be taken as well as the research project)

- The candidate will commence research under the direction of their supervisor(s) either from term 1 or term 2.
- Compulsory training and skills modules:
  MECH5005M Training and Professional Development Activities 1 (15 credits)

- Candidates undertake a number of non-credit bearing generic skills courses from a range provided by for example central training providers (SDDU, ISS, Library), the Faculty or outside bodies.
- Compulsory (100 credits) specialised subject modules as follows:

  MECH5007M Systematic Review (15 credits)
  MECH5008M Cross-Disciplinary Laboratory Placements (20 credits)
  MECH5009M Research Project Proposals (5 credits)
  MEDP5321M Research Methods (15 credits)

  Specialised subject modules (45 credits[2]) will be chosen from an approved list of optional modules which are listed in the PGR Course Handbook.

Year Two (a total of 65 credits in taught modular courses will be taken as well as the research project)

- The candidate will continue research under the direction of their supervisor(s).
- Compulsory (30 credits) specialised subject modules as follows:
- MECH5003M Industrial Research Project (15 credits2)
- MECH5006M Training and Professional Development Activities 2 (15 credits)
- Further non-credit bearing training courses to be taken as appropriate.

Specialised subject modules (35 credits) will be chosen from an approved list of optional modules which are listed in the PGR Course Handbook.

Candidates will be permitted to proceed to assessment for transfer to full PhD status if they achieve an average of 50% over all 180 credits of which 150 credits must be passed at 50% or more in each and every module undertaken, and of these 135 credits must be at M Level.

Years Three and Four

The candidate will continue research under the direction of their supervisor(s).

Optional and compulsory non-credit bearing training and skills modules selected as appropriate from the wide-range of training courses provided at the University of Leeds (e.g. Writing for Research PGRs in the Sciences, Thesis Presentation).

Changes may be made from time to time to the titles of modular courses and the optional modular courses that are available

[1] Entry to this programme has been suspended with effect from 2014 -2015. See also the general Programme of Study for the Integrated degrees of PhD and Master (MA, LLM or MSc) which specifies the overall arrangements for the University Integrated PhD and Masters programme

[2] Other approved modules may be added to the list of optional modules from time to time

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment

1. Learning Outcomes

On completion of the Integrated PhD with MSc as a whole, PGRs should have shown evidence of being able to:

- discover, interpret and communicate new knowledge through original research in the field of medical and biological engineering and produce scholarship of publishable quality which satisfies peer review;
- independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these;
- demonstrate systematic and extensive knowledge across the three broad interdisciplinary themes of Joint replacements and cartilage substitution; Spinal biomechanics and interventions; and Tissue engineering;
- critically and creatively evaluate current issues, research and advanced scholarship in the above themes;
- demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.
- exhibit generic and subject specific skills and techniques necessary for effective working in an interdisciplinary research-intensive environment, in liaison with academic and industrial partners, ensuring widening participation through engagement in public events, enterprise and knowledge transfer;
- demonstrate a portfolio of transferable professional skills through the use of Personal Development Plans including, for example, communication and presentation skills, ethics, networking and team development, commercial awareness; to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate;
- undertake an individual research project in the area of Medical and Biological Engineering, incorporating research in a specific area, but also including reference to the wider context of industrial and clinical development; to present and defend research outcomes which extend the forefront of the Medical and Biological Engineering discipline;
- demonstrate the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional practice or industry;
- evaluate their own achievement and that of others;
- exhibit self-direction and effective decision making in complex and unpredictable situations;
- demonstrate independent learning and the ability to work in a way which ensures continuing professional development;

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry;
- evaluating their own achievement and that of others;
- self-direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;

3. Learning Context

The learning context will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques.

Opportunities will be provided for PGRs to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions;
- make an original contribution to the field

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis and performance under oral examination. Assessment will involve the achievement of the candidate in: evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work;

- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice;
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice;
- drawing on a range of perspectives on the area of study;
- evaluating and criticising received opinion;
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis.

Programme of study for the Integrated degree of PhD and MSc (Advanced Particulate Materials) [1]

Entry Requirements: *This programme no longer recruiting* with effect *from 2014 -2015*

Year One (a total of 120 credits in taught modular courses (including 60 credit MSc Research Project) will be taken as well as commencement of the PhD research project)

- The candidate will commence research under the direction of their supervisor(s) during Year 1.
- Compulsory training and skills module:
  PEME5480M Transferable Skills & Professional Development 1(15 credits)

  Candidates also undertake a number of non-credit bearing generic skills courses from a range provided by central training providers (SDDU, ISS, Library), the Faculty or outside bodies.
- Compulsory specialised subject modules as follows:

  PEME5300M Process Chemistry and Chemical Technology (15 credits)
  CMNS5400M Processing and Properties of Inorganic Nanomaterials (15 credits)
  PEME5000M Research Project MSc (60 credits)
- Candidates are required to study one 15 credit option chosen for relevance to PhD *(it is expected that candidates who have a theoretical/modelling PhD topic will normally take PEME5310 whilst those following an experimental route will take PEME5711M)*

  PEME5310 Multi-Scale Modelling (15 credits)
  PEME5711M Materials Structures and Characterisation (15 credits)

  Other optional modules chosen outside the list will be only as an exception with programme director approval.

Year Two (a total of 60 credits in taught modular courses will be taken as well as continuation of the PhD research project)

- The candidate will continue research under the direction of their supervisor(s)
- Compulsory training and skills modules:

  PEME5485M Transferable Skills & Professional Development II (15 credits)
- Further non-credit bearing training courses will be taken as appropriate.
- Compulsory specialised subject module:

  PEME5330M Advanced Reaction Engineering (15 credits)
  PEME5760M Advanced Materials and Processes (15 credits)

  Candidates are required to study one 15 credit option chosen for relevance to PhD *(it is expected that candidates who have a theoretical/modelling PhD topic will normally take either PEME5350M or PEME5710M whilst those following an experimental route will take PEME5340M)*

  PEME5340M Advances in Chemical Engineering (15 credits)
  PEME5350M Computational Transfer Processes (15 credits)
  PEME5710M Materials Modelling (15 credits)

[1] Entry to this programme has been suspended from 2014 -2015. To be read in conjunction with the general Programme of Study for the Integrated degrees of PhD

Other optional modules chosen outside the list will be only as an exception with programme director approval.

Candidates will be permitted to proceed to assessment for transfer to full PhD status if they achieve 50% or more in all assessed credit-bearing modules.

Years Three and Four

- The candidate will continue research under the direction of their supervisor(s)
- Optional and compulsory non-credit bearing training and skills modules selected as appropriate from the wide-range of training courses provided at the University of Leeds.

Changes may be made from time to time to the titles of modular courses and the optional modular courses that are available.

Learning Outcomes / Transferable Key Skills / Learning Context/ Assessment – overall programme PhD and MSc (Advanced Particulate Materials)

1. Learning Outcomes

On completion of the Integrated PhD with MSc as a whole, students should have shown evidence of being able to:

- discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which would satisfy peer review;
- present and defend research outcomes which extend the forefront of a discipline or relevant area of professional practice;
- demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills;
- take a proactive and self reflective role in working and to develop professional relationships with others where appropriate;
- independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these;
- critically and creatively evaluate current issues, research and advanced scholarship in the discipline.
- demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.
- understand the baseline and advanced principles of a particular engineering discipline (e.g. Chemical or Materials) and how these are applied to the study of particulate materials;
- perform accurate analyses, within the rigorous standards expected of the engineering profession;
- define problems and develop and evaluate solutions for both basic and complex engineering issues;
- have demonstrated the capability to use techniques to acquire and analyse data and engineering information relevant to particulate materials;
- demonstrate the range of professional competencies that are relevant to the chemical and materials industries and show a clear understanding of the regulatory, safety and professionalism expectations of those industries;

2. Transferable (Key) skills

Students will have the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry;
- evaluating their own achievement and that of others;
- self-direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;

3. Learning Context

The learning context will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for students to:

- develop to a high level interests and informed opinions;
- develop to a high level their design and management of their learning activities;
- develop to a high level their communication of their conclusions;
- make an original contribution to the field

Students will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional practice normally leading to published work;
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice;
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional practice;
- drawing on a range of perspectives on the area of study;
- evaluating and criticising received opinion;
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data;
- the written style and overall presentation of the thesis.

Programme of study for the integrated degree of PhD and MSc (Bioenergy)[1] 2021/22

Entry Requirements: ***This programme is no longer recruiting***

Year One (a total of 135 credits in taught modular courses will be taken as well as the research project)

- The candidate will commence research under the direction of their supervisor(s) from Term 3

- Compulsory training and skills module:
  CAPE5950 Transferable Skills and Professional Development (15 credits)

- Compulsory specialised subject modules as follows:
  CAPE5970 Interdisciplinary Research Project (90 credits)
  CAPE5440 Advanced Renewable Technologies (15 credits)

- Candidates will be required to study 15 credits from the following optional modules:
  CAPE5990 Commercial Software (15 credits)
  CIVE5392 Bioenergy from Wastes (15 credits)
  CAPE5410 Energy Management and Conservation (15 credits)
  CAPE5450 Energy Systems: Analysis and Efficiency (15 credits)
  SOEE5550 Climate Change: Impacts and Adaptation (15 credits)

PGRs will be required to pass at least 120 taught credits in order to progress on the programme.

Year Two (a total of 45 credits in taught modular courses will be taken as well as the research project)

- The candidate will continue research under the direction of their supervisor(s)

- Compulsory training and skills module:
  CAPE5960 Transferable Skills and Professional Development (30 credits)

- Candidates will be required to study 15 credits from the following optional modules:
  CAPE5990 Commercial Software (15 credits)
  CIVE5392 Bioenergy from Wastes (15 credits)
  CAPE5410 Energy Management and Conservation (15 credits)
  CAPE5450 Energy Systems: Analysis and Efficiency (15 credits)
  SOEE5550 Climate Change: Impacts and Adaptation (15 credits)

PGRs will be required to pass at least 150 taught credits and successfully Transfer to full PhD status in order to progress on the programme.

Years Three and Four

- The candidate will continue research under the direction of their supervisor(s)

- Optional and compulsory non-credit bearing training and skills modules selected as appropriate from the wide-range of training courses provided at the University of Leeds (e.g. Writing for Research PGRs in the Sciences, Thesis Presentation).

Changes may be made from time to time to the titles of modular courses and the optional modular courses that are available.

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment – overall programme Integrated degree of PhD and MSc (Bioenergy)

1. Learning Outcomes

On completion of the Integrated PhD with MSc as a whole, PGRs should have shown evidence of being able to:

[1] To be read in conjunction with the general Programme of Study for the Integrated degrees of PhD and Master (MA, LLM or MSc)

- discover, interpret and communicate new knowledge through original research in the field of bioenergy and produce scholarship of publishable quality which satisfies peer review;

- independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these;
- demonstrate systematic and extensive knowledge across the four interdisciplinary themes of Feedstocks, processing and safety; Conversion; Products, Utilisation and Impact; Sustainability and Whole Systems;
- critically and creatively evaluate current issues, research and advanced scholarship in the above themes;
- exhibit generic and subject specific skills and techniques necessary for effective working in an interdisciplinary research-intensive environment, in liaison with academic and industrial partners, ensuring widening participation through engagement in public events, enterprise and knowledge transfer;
- demonstrate a portfolio of transferable professional skills through the use of Personal Development Plans including, for example, communication and presentation skills, ethics, networking and team development, commercial awareness; to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate;
- undertake an individual research project in the area of Bioenergy, incorporating research in a specific area, but also including reference to the wider context of energy policy, legislation and environmental impact; to present and defend research outcomes which extend the forefront of the bioenergy discipline and professional practice;
- demonstrate the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional practice or industry;
- evaluate their own achievement and that of others;
- exhibit self-direction and effective decision making in complex and unpredictable situations;
- demonstrate independent learning and the ability to work in a way which ensures continuing professional development.

2. Transferable (Key) Skills

- PGRs will have had the opportunity to acquire the following abilities as defined in the modules specified for the programme;
- the skills necessary to undertake a higher research degree and/or for employment in a higher capacity in industry or area of professional practice;
- evaluating their own achievement and that of others;
- self direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;
- critically to engage in the development of professional/disciplinary boundaries and norms;
- work effectively in an external environment e.g. industry, overseas laboratory.

3. Learning Context

The learning context will include the critical analysis of, and decision making in, complex and unpredictable professional and situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to develop:

- interests and informed opinions;
- their involvement in the design and management of their learning activities;
- their communication of their conclusions;
- PGRs will be expected to progress to fully autonomous study and work.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct independent in-depth enquiry within the discipline;
- demonstrating the ability to apply breadth and/or depth of knowledge to a complex specialist area;
- drawing on a range of perspectives on an area of study;
- evaluating and criticising received opinion;

- make reasoned judgements whilst understanding the limitations on judgements made in the absence of complete data.
- Presenting work in a variety of ways e.g. oral presentation to academic groups, lay public; examination, viva, coursework.

Programme of study for the integrated degree of PhD and MSc (Fluid Dynamics)[1] 2021/22

Entry Requirements

Applicants will normally be required to have obtained a relevant degree of *at least* equivalent to a UK upper second class (2:1) honours degree. PGRs whose first language is not English will normally be required to have achieved at least 6.0 on IELTS (with no component below 5.5) or an equivalent English language qualification.

There is normally one entry point for the integrated degrees of PhD and Master in September/October of each academic session.

Year One (a total of 150 credits in taught modular courses will be taken as well as the research project)

- The candidate will commence research under the direction of their supervisor(s) from term 3.

- Compulsory training and skills module:
  COMP5990 Professional Development & Skills 1 (15 credits)
  COMP5991 Professional Development & Skills 2 (15 credits)

- Compulsory specialised subject modules:
  CAPE5990M Commercial Software (15 credits)
  MATH5453 Foundations of Fluid Dynamics (30 credits)
  MECH5870 Multidisciplinary Team Project (60 credits)
  COMP5454M Fluid-Structure Interactions (15 credits)

At the end of the first year the Fluid Dynamics CDT Management Committee will assess the performance of the PGR on the basis of achievement in the module assessment, required training and other activity. PGRs will be required to pass at least 135 taught credits in order to progress on the programme.

Year Two (a total of 30 credits in taught modular courses will be taken as well as the research project)

- The candidate will continue research under the direction of their supervisor(s)

- Compulsory training and skills module:
  COMP5992 Professional Development & Skills 3 (15 credits)

- Candidates are required to take one (15 credits) of the following options:
  COMP5930 Scientific Computation (15 credits)
  SOEE5835 Advanced Atmosphere and Ocean Dynamics (15 credits)

Other optional modules may be approved. Candidates are advised to discuss this with their supervisors.

PGRs who have been successful in the assessed modules and research components during Year 2 of study, will undergo a Transfer Assessment process at the end of year 2.

PGRs will be required to pass at least 150 taught credits and successfully Transfer to full PhD status in order to progress on the programme.

Years Three and Four

- The candidate will continue research under the direction of their supervisor(s)

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment – overall programme Integrated degree of PhD and MSc (Fluid Dynamics)

1 To be read in conjunction with the general Programme of Study for the Integrated degrees of PhD and Master (MA, LLM or MSc)

INTEGRATED PHD OF PHD AND MSC (FLUID DYNAMICS)

1. Learning Outcomes

On completion of the programme PGRs should have shown evidence of being able:

- to demonstrate in-depth, but also broad-based and interdisciplinary, specialist knowledge and mastery of techniques relevant to Fluid Dynamics: to demonstrate a sophisticated understanding of concepts, information and techniques at the forefront of the discipline;
- to exhibit mastery in the exercise of generic and subject-specific intellectual abilities including fundamental theory, mathematical modelling, numerical methods and experimental techniques;
- to demonstrate a comprehensive understanding of techniques applicable to their own research or advanced scholarship;
- to take a proactive and self-reflective role in working and to develop professional relationships with others;
- proactively to formulate ideas and hypotheses and to develop, implement and execute plans by which to evaluate these;
- critically and creatively to evaluate current issues, research and advanced scholarship in the discipline.
- Undertake a team research project and be able to plan, research, execute and analyse the results from an appropriate programme of work.

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities as defined in the modules specified for the programme:

- the skills necessary to undertake a higher research degree and/or for employment in a higher capacity in industry or area of professional practice;
- evaluating their own achievement and that of others;
- self direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;
- critically to engage in the development of professional/disciplinary boundaries and norms;
- work effectively in an external environment e.g. industry, overseas laboratory.

3. Learning Context

For Masters (Taught) PGRs the learning context will include the analysis of, and decision making in, complex and unpredictable situations. The structure of the programme will provide breadth and/or depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to develop:

- high level interests and informed opinions;
- develop to a high level their design and management of their learning activities ;
- develop to a high level their communication of their conclusions;
- make an original contribution to the field.

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement for the degree of Master (taught programme) will be assessed by a variety of methods in accordance with the learning outcomes of the modules specified for the year/programme and will involve the achievement of the PGRs in:

- evidencing an ability to conduct independent in-depth enquiry within the discipline;
- demonstrating the ability to apply breadth and/or depth of knowledge to a complex specialist area;
- drawing on a range of perspectives on an area of study;
- evaluating and criticising received opinion;
- make reasoned judgements whilst understanding the limitations on judgements made in the absence of complete data;

- Presenting work in a variety of ways e.g. oral presentation to academic groups, lay public; examination, viva, coursework;
- The written style and overall presentation of the thesis.

Programme of study for the integrated degree of PhD and MSc (Fluid Dynamics)[1] 2021/22

Entry Requirements

Applicants will normally be required to have obtained a relevant degree of *at least* equivalent to a UK upper second class (2:1) honours degree. PGRs whose first language is not English will normally be required to have achieved at least 6.0 on IELTS (with no component below 5.5) or an equivalent English language qualification.

There is normally one entry point for the integrated degrees of PhD and Master in September/October of each academic session.

Year One (a total of 150 credits in taught modular courses will be taken as well as the research project)

- The candidate will commence research under the direction of their supervisor(s) from term 3.
- Compulsory training and skills module:
  COMP5990M Professional Development & Skills 1 (15 credits)
  COMP5991M Professional Development & Skills 2 (15 credits)
- Compulsory specialised subject modules:
  MECH5770M Computational Fluid Dynamics Analysis~~CAPE5990M Commercial Software (15 credits)~~
  MATH5453M Foundations of Fluid Dynamics (30 credits)
  MECH5870M Multidisciplinary Team Project (60 credits)
  COMP5454M Fluid-Structure Interactions (15 credits)

At the end of the first year the Fluid Dynamics CDT Management Committee will assess the performance of the PGR on the basis of achievement in the module assessment, required training and other activity. PGRs will be required to pass at least 135 taught credits in order to progress on the programme.

Year Two (a total of 30 credits in taught modular courses will be taken as well as the research project)

- The candidate will continue research under the direction of their supervisor(s)
- Compulsory training and skills module:
  COMP5992 Professional Development & Skills 3 (15 credits)
- Candidates are required to take one (15 credits) of the following options:
  COMP5930 Scientific Computation (15 credits)
  SOEE5835 Advanced Atmosphere and Ocean Dynamics (15 credits)

Other optional modules may be approved. Candidates are advised to discuss this with their supervisors.

PGRs who have been successful in the assessed modules and research components during Year 2 of study, will undergo a Transfer Assessment process at the end of year 2.

PGRs will be required to pass at least 150 taught credits and successfully Transfer to full PhD status in order to progress on the programme.

Years Three and Four

- The candidate will continue research under the direction of their supervisor(s)

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment – overall programme Integrated degree of PhD and MSc (Fluid Dynamics)

1 To be read in conjunction with the general Programme of Study for the Integrated degrees of PhD and Master (MA, LLM or MSc)

INTEGRATED PHD OF PHD AND MSC (FLUID DYNAMICS)

1. Learning Outcomes

On completion of the programme PGRs should have shown evidence of being able:

- to demonstrate in-depth, but also broad-based and interdisciplinary, specialist knowledge and mastery of techniques relevant to Fluid Dynamics: to demonstrate a sophisticated understanding of concepts, information and techniques at the forefront of the discipline;
- to exhibit mastery in the exercise of generic and subject-specific intellectual abilities including fundamental theory, mathematical modelling, numerical methods and experimental techniques;
- to demonstrate a comprehensive understanding of techniques applicable to their own research or advanced scholarship;
- to take a proactive and self-reflective role in working and to develop professional relationships with others;
- proactively to formulate ideas and hypotheses and to develop, implement and execute plans by which to evaluate these;
- critically and creatively to evaluate current issues, research and advanced scholarship in the discipline.
- Undertake a team research project and be able to plan, research, execute and analyse the results from an appropriate programme of work.

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities as defined in the modules specified for the programme:

- the skills necessary to undertake a higher research degree and/or for employment in a higher capacity in industry or area of professional practice;
- evaluating their own achievement and that of others;
- self direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;
- critically to engage in the development of professional/disciplinary boundaries and norms;
- work effectively in an external environment e.g. industry, overseas laboratory.

3. Learning Context

For Masters (Taught) PGRs the learning context will include the analysis of, and decision making in, complex and unpredictable situations. The structure of the programme will provide breadth and/or depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to develop:

- high level interests and informed opinions;
- develop to a high level their design and management of their learning activities ;
- develop to a high level their communication of their conclusions;
- make an original contribution to the field.

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement for the degree of Master (taught programme) will be assessed by a variety of methods in accordance with the learning outcomes of the modules specified for the year/programme and will involve the achievement of the PGRs in:

- evidencing an ability to conduct independent in-depth enquiry within the discipline;
- demonstrating the ability to apply breadth and/or depth of knowledge to a complex specialist area;
- drawing on a range of perspectives on an area of study;
- evaluating and criticising received opinion;
- make reasoned judgements whilst understanding the limitations on judgements made in the absence of complete data;

- Presenting work in a variety of ways e.g. oral presentation to academic groups, lay public; examination, viva, coursework;
- The written style and overall presentation of the thesis.

Programme of study for the integrated degree of PhD and MSc (Tissue Engineering and Regenerative Medicine – Innovation in Medical & Biological Engineering)[1] 2021/22

Entry Requirements: ***This programme is no longer recruiting***

Year One (a total of 120 credits in taught modular courses will be taken as well as the research project)

- The candidate will commence research under the direction of their supervisor(s) from term 3.

- Compulsory training and skills module:
  MECH5005M Training and professional development activities (15 credits)

- Compulsory specialised subject modules:
  LUBS5247M Managing for innovation (15 credits)
  MECH5002M Cross disciplinary laboratory placement (15 credits)
  MECH5007M Systematic review (15 credits)
  MECH5009M Research project proposal (5 credits)
  MECH5565M Medical engineering experimental design and analysis (15 credits)

- Candidates are required to select 40 credits from the following optional modules with a maximum of 30 credits below level M in Year 1:

  CAPE5710M Biomaterials and Applications (15 credits)
  CAPE5750M Materials Structures and Characterisation (15 credits)
  CAPE5770M Nanomaterials (15 credits)
  DSUR5072M Stem Cell Therapy and Tissue Engineering (10 credits)
  MECH3225 Biomedical Engineering Design (20 credits)
  MECH5221M Spinal Biomechanics and Instrumentation (distance learning) (15 credits)
  MECH5270M Basic Orthopaedic Engineering (15 credits)[2]
  MECH5315M Engineering Computational Methods (15 credits)
  MECH5410M Surface Engineering (15 credits)
  MECH5490M Biomaterials (short course) (15 credits)
  MECH5500M Functional Joint Replacement Technology (short course) (15 credits)
  MECH5570M Introduction to Tribology (15 credits)
  MECH5650M Biotribology (15 credits)
  MICR1201 Introduction to Microbiology (10 credits)
  MICR1220 Introduction to Immunology (10 credits)
  MICR5100M Tissue Engineering (15 credits)

PGRs will be required to pass at least 100 taught credits in order to progress on the programme.

Year Two (a total of 60 credits in taught modular courses will be taken as well as the research project)

- The candidate will continue research under the direction of their supervisor(s)

- Compulsory training and skills module:
  MECH5006M Training and professional development activities 2 (15 credits)

- Compulsory specialised subject modules:
  MECH5003M Industrial Research Project (15 credits)
  LUBS5980M Innovation Management in Practice (15 credits)

- Candidates are required to study 15 credits from the following optional modules with a maximum of 30 credits below level M across the two years of study:
- CAPE5710M Biomaterials and Applications (15 credits)

[1] To be read in conjunction with the general Programme of Study for the Integrated degrees of PhD and Master (MA, LLM or MSc)
[2] Is only for PGRs from a non-engineering / physical sciences background.

- CAPE5750M Materials Structures and Characterisation (15 credits)
- CAPE5770M Nanomaterials (15 credits)
- DSUR5072M Stem Cell Therapy and Tissue Engineering (10 credits)
- MECH3225 Biomedical Engineering Design (20 credits)
- MECH5221M Spinal Biomechanics and Instrumentation (distance learning) (15 credits)
- MECH5270M Basic Orthopaedic Engineering (15 credits)[3]
- MECH5315M Engineering Computational Methods (15 credits)
- MECH5410M Surface Engineering (15 credits)
- MECH5490M Biomaterials (short course) (15 credits)
- MECH5500M Functional Joint Replacement Technology (short course) (15 credits)
- MECH5570M Introduction to Tribology (15 credits)
- MECH5650M Biotribology (15 credits)
- MICR1201 Introduction to Microbiology (10 credits)
- MICR1220 Introduction to Immunology (10 credits)
- MICR5100M Tissue Engineering (15 credits)

PGRs will be required to pass at least 150 taught credits and successfully transfer to full PhD status in order to progress on the programme.

Years Three and Four

- The candidate will continue research under the direction of their supervisor(s)

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment – overall programme integrated degree of PhD and MSc (Tissue Engineering and Regenerative Medicine – Innovation in Medical & Biological Engineering)

1. Learning Outcomes

On completion of the programme PGRs should have shown evidence of being able:

- to demonstrate in-depth, specialist knowledge and mastery of techniques relevant to medical technologies in the interdisciplinary theme of Tissue Engineering and Regenerative Medicine and/or to demonstrate a sophisticated understanding of concepts, information and techniques at the forefront of the discipline;
- to exhibit a wide breadth of knowledge and mastery of generic and subject-specific intellectual abilities and specific industry/clinical related skills such as the use of modelling software, data collection, aspects of legislation, innovation and ethics;
- to demonstrate a comprehensive understanding of techniques applicable to their own research or advanced scholarship in the field of Tissue Engineering and Regenerative Medicine;
- to take a proactive and self-reflective role in working and to develop professional relationships with others;
- proactively to formulate ideas and hypotheses and to develop, implement and execute plans by which to evaluate these;
- critically and creatively to evaluate current issues, research and advanced scholarship in the discipline.
- undertake a research project and be able to plan, research, execute and analyse the results from an appropriate programme of work.

2. Transferable (Key) Skills

Masters (Taught), Postgraduate Diploma & Postgraduate Certificate PGRs will have had the opportunity to acquire the following abilities as defined in the modules specified for the programme:

- the skills necessary to undertake a higher research degree and/or for employment in a higher capacity in industry or area of professional practice;
- evaluating their own achievement and that of others;
- self direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;

3. Learning Context

For Masters (Taught) PGRs the learning context will include the analysis of, and decision making in, complex and unpredictable situations. The structure of the programme will provide breadth and/or depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to develop:

- interests and informed opinions;
- their involvement in the design and management of their learning activities;
- their communication of their conclusions;
- PGRs will be expected to progress to fully autonomous study and work.

4. Assessment

Achievement for the degree of Master (taught programme) will be assessed by a variety of methods in accordance with the learning outcomes of the modules specified for the year/programme and will involve the achievement of the PGRs in:

- evidencing an ability to conduct independent in-depth enquiry within the discipline;
- demonstrating the ability to apply breadth and/or depth of knowledge to a complex specialist area;
- drawing on a range of perspectives on an area of study;
- evaluating and criticising received opinion;
- make reasoned judgements whilst understanding the limitations on judgements made in the absence of complete data.

Programme of study for the integrated degree of PhD and MSc (Complex Particulate Products and Processes)[1] 2021/22

Entry Requirements: ***This programme is no longer recruiting***

Year One (a total of 150 credits in taught modular courses will be taken as well as the research project)

- The candidate will commence research under the direction of their supervisor(s) from term 3.
- Compulsory specialised subject modules:

  CAPE5901M Functional Analysis Semester 2 15 credit
  CAPE5902M Reverse Engineering Semester 1 30 credits
  CAPE5903M Manufacturing Semester 1,2,3 30 credits
  CAPE5905M Professional and Research Skills Sem 3 60 credits
  CAPE5300M Chemical Products Design and Development 15 credits

Alongside these taught modules, candidates are required to study 30 credits of PhD research. PGRs will be required to pass at least 120 taught credits in order to progress on the programme.

Year Two (a total of 30 credits in taught modular courses will be taken as well as the research project)

- The candidate will continue research under the direction of their supervisor(s)
- Compulsory specialised subject modules:

  CAPE5904M New Product Semester 1 (15 credits)
  LUBS5247M Managing for Innovation Semester 2 (15 credits)

Alongside these taught modules, candidates are required to study 150 credit of PhD research

PGRs who have been successful in the assessed modules and research components during Year 2 of study, will undergo a transfer assessment process at the end of Year Two.

PGRs will be required to pass at least 150 taught credits and successfully Transfer to full PhD status in order to progress on the programme.

Years Three and Four

- The candidate will continue research under the direction of their supervisor(s)

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment – overall programme Integrated degree of PhD and MSc (Complex Particulate Products and Processes**)**

1. Learning Outcomes

On completion of the programme PGRs should have shown evidence of being able:

- to demonstrate in-depth, but also broad-based and interdisciplinary, specialist knowledge and mastery of techniques relevant to Fluid Dynamics (selected from the CDT themes: Reacting Flows, Mixing and Safety; Environmental Flows; Geophysical Flows; Microflows and Heat Transfer; Particulate Flows, Sediments and Rheology; and cross-cutting tools and techniques): to demonstrate a sophisticated understanding of concepts, information and techniques at the forefront of the discipline;
- to exhibit mastery in the exercise of generic and subject-specific intellectual abilities including fundamental theory, mathematical modelling, numerical methods and experimental techniques;
- to demonstrate a comprehensive understanding of techniques applicable to their own research or advanced scholarship;
- to take a proactive and self-reflective role in working and to develop professional relationships with others;

1 To be read in conjunction with the general Programme of Study for the Integrated degrees of PhD and Master (MA, LLM or MSc)

- proactively to formulate ideas and hypotheses and to develop, implement and execute plans by which to evaluate these;
- critically and creatively to evaluate current issues, research and advanced scholarship in the discipline.
- Undertake a team research project and be able to plan, research, execute and analyse the results from an appropriate programme of work.

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities as defined in the modules specified for the programme:

- the skills necessary to undertake a higher research degree and/or for employment in a higher capacity in industry or area of professional practice;
- evaluating their own achievement and that of others;
- self direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;
- critically to engage in the development of professional/disciplinary boundaries and norms;
- work effectively in an external environment e.g. industry, overseas laboratory.

3. Learning Context

For Masters (Taught) PGRs the learning context will include the analysis of, and decision making in, complex and unpredictable situations. The structure of the programme will provide breadth and/or depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to develop:

- high level interests and informed opinions;
- develop to a high level their design and management of their learning activities ;
- develop to a high level their communication of their conclusions;
- make an original contribution to the field.

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement for the degree of Master (taught programme) will be assessed by a variety of methods in accordance with the learning outcomes of the modules specified for the year/programme and will involve the achievement of the PGRs in:

- evidencing an ability to conduct independent in-depth enquiry within the discipline;
- demonstrating the ability to apply breadth and/or depth of knowledge to a complex specialist area;
- drawing on a range of perspectives on an area of study;
- evaluating and criticising received opinion;
- make reasoned judgements whilst understanding the limitations on judgements made in the absence of complete data;
- Presenting work in a variety of ways e.g. oral presentation to academic groups, lay public; examination, viva, coursework;
- The written style and overall presentation of the thesis.

Programme of study for the Integrated degree of PhD and MSc (Data Analytics and Society)[1] 2021/22

Entry Requirements

Applicants will normally be required to have obtained a relevant degree of *at least* equivalent to a UK upper second class (2:1) honours degree. PGRs whose first language is not English will normally be required to have achieved at least 7.0 on IELTS (with 7 in writing and no other component below 6), or TOEFL 100 overall, 25 writing, 22 other sections, or an equivalent English language qualification.

Year One (a total of 120 credits in taught modular courses[2] will be taken as well as the research project)

- The candidate will commence research under the direction of their supervisor(s)
    - *Compulsory specialised subject modules (105 credits):*

      GEOG5000M Internship Project (University of Leeds) 15 credits
      GEOG5995M Programming for Social Sciences: Core Skills (University of Leeds) 15 credits
      JULV5000M Analysis of Human Dynamics (University of Liverpool) 15 credits
      JUMN5000M Understanding Data and its Environment (University of Manchester) 15 credits
      JUSH5000M Social Analytics & Visualisation (University of Sheffield) 15 credits
      SLSP5501M Research Strategy and Design (University of Leeds) 30 credits

    - *One 15 credit subject Optional module[3] from a prescribed list for Year 1*

Candidates are required to pass at least 90 taught credits in order to progress on the programme.

Year Two (a total of 60 credits in taught modular courses[4] will be taken as well as the research project)

- The candidate will continue research under the direction of their supervisor(s)

  Compulsory specialised subject modules (30 credits):
  Semester Two
  GEOG5099M Dissertation (University of Leeds) 30 credits

- **Optional subject modules (30 credits):**
  Candidates will take 2 x 15 credit subject Optional modules[5] from a prescribed list for Year 2

Candidates who have been successful in the assessed modules and research components during Year 2 of study, will undergo a transfer assessment process, to be successfully completed by no later than the end of Year Two (Month 24) of study.

The decision to transfer will be based on the submission of appropriate material for assessment and all Postgraduate Researchers (PGRs) must undergo an oral examination by an assessment panel which must include at least one independent individual who has not been involved in the supervisory support of the candidate. The PGR will be interviewed by the assessment panel in the form of a viva voce examination.

Candidates will be required to pass a minimum of 150 taught credits (of the total 180 credits undertaken) and successfully transfer to full PhD status in order to progress on the programme.

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1 To be read in conjunction with the general Programme of Study for the Integrated degrees of PhD and Master (MA, LLM or MSc)
[2] See web link to the Programme Catalogue for details when each module will run in session 2020-21.
[3] Each module in this Year 1 prescribed list of Optional module is 15 credits. PGRs therefore choose just the one module.
[4] See web link to the Programme Catalogue for details when each module will run in session 2020-21.
[5] Each module in this Year 2 prescribed list of Optional module is 15 credits. PGRs therefore choose two modules.

Years Three and Four

- The candidate will continue research under the direction of their supervisor(s)

INTEGRATED DEGREE OF PHD AND MSC (DATA ANALYTICS AND SOCIETY)

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment – overall programme Integrated degree of PhD and MSc

1. **Learning Outcomes**

- Identify, summarise and critically compare key theories, concepts and empirical research evidence within the fields of data analytics and social science;
- Apply high-level programming and analytical tools and techniques to analyse data describing social and cultural environments, and set appropriate objectives and strategies in complex situations;
- Develop transferable professional skills in working with others required for using social science data to form and implement analysis strategies, such as thought leadership;
- Demonstrate advanced independent research skills and analytical abilities in the fields of data analytics and social science, along with the ability to develop research ideas and questions and to undertake analysis of data and written presentation of results for practice;
- Develop and deliver professional quality oral presentations that distil insights from analyses of data from social and cultural perspectives to describe, interpret, and explain the social world;
- Appraise the relative strengths and weaknesses of different quantitative methodologies in analysing different types of social and cultural data, and apply knowledge in managing the implications of applied research;
- Develop a good understanding of contemporary topics in social science and data analytics and how the global landscape shapes the analysis of large datasets, and non-standard forms of data structure, such as those where it is the links between observations, rather than the observations themselves;
- Take a proactive and self-reflective role in working and to develop professional relationships with others;
- Apply ethical codes to the practice of data analytics in the context of social and cultural sciences.

On completion of the programme students should have shown evidence of being able:

- Demonstrate in-depth, specialist knowledge and mastery of techniques relevant to the disciplines of data analytics and social science and/or to demonstrate a sophisticated understanding of concepts, information and techniques at the forefront of the disciplines;
- Identify, summarise and critically compare key theories, concepts and empirical research evidence within the fields of data analytics and social science;
- Apply high-level programming and analytical tools and techniques to analyse data describing social and cultural environments, and set appropriate objectives and strategies in complex situations;
- Develop transferable professional skills in working with others required for using social science data to form and implement analysis strategies, such as thought leadership;
- Demonstrate advanced independent research skills and analytical abilities in the fields of data analytics and social science, along with the ability to develop research ideas and questions and to undertake analysis of data and written presentation of results for practice;
- Develop and deliver professional quality oral presentations that distil insights from analyses of data from social and cultural perspectives to describe, interpret, and explain the social world;

- Appraise the relative strengths and weaknesses of different quantitative methodologies in analysing different types of social and cultural data, and apply knowledge in managing the implications of applied research;

- Develop a good understanding of contemporary topics in social science and data analytics and how the global landscape shapes the analysis of large datasets, and non-standard forms of data structure, such as those where it is the links between observations, rather than the observations themselves;

- Take a proactive and self-reflective role in working and to develop professional relationships with others;

- Apply ethical codes to the practice of data analytics in the context of social and cultural sciences.

2. Transferable (Key) Skills

- the skills necessary to undertake a higher research degree and/or for employment in a higher capacity in industry or area of professional practice;
- evaluating their own achievement and that of others;
- self direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;
- critically to engage in the development of professional/disciplinary boundaries and norms.

3. Learning Context

For Masters (Taught) students the learning context will include the analysis of, and decision making in, complex and unpredictable situations. The structure of the programme will provide breadth and/or depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for students to develop:

- high level interests and informed opinions;

- develop to a high level their design and management of their learning activities ;

- develop to a high level their communication of their conclusions;

- make an original contribution to the field.

Students will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement for the degree of Master (taught programme) will be assessed by a variety of methods in accordance with the learning outcomes of the modules specified for the year/programme and will involve the achievement of the students in:

- evidencing an ability to conduct independent in-depth enquiry within the discipline;

- demonstrating the ability to apply breadth and/or depth of knowledge to a complex specialist area;

- drawing on a range of perspectives on an area of study;

- evaluating and criticising received opinion;

- making reasoned judgements whilst understanding the limitations on judgements made in the absence of complete data.

Programme of study for the integrated degree of PhD and MSc (Artificial Intelligence for Medical Diagnosis and Care)[1] 2021/22

Entry Requirements: A minimum of a II(i) honours degree, or equivalent qualification, in a Medicine and Health or Science, Technology, Engineering, Mathematics (STEM) subject.

For candidates whose first language is not English IELTS 6.5 overall, 7 writing, 6.5 other sections or TOEFL 100 overall, 25 writing, 22 other sections or equivalent.

Year One (a total of 180 credits in taught modular courses will be taken over Years One and Two as well as the research project)

- PGRs will register in the School of Computing and will hold an honorary NHS contract throughout the four years of their research training.
- PGRs will commence research under the direction of their supervisor(s) from month 6. Each PGR will be supervised by at least one supervisor from the field of AI, normally from the School of Computing, and one drawn from the field of medical diagnosis and care, normally an academic clinician (School of Medicine) working within Leeds Teaching Hospitals Trust.
- PGRs will complete a training needs analysis and agree a training plan with their supervisor(s) in month 7
- Compulsory training and skills modules:

  COMP5712M Programming for Data Science (15 credits)
  COMP5450M Knowledge Representation and Reasoning (15 credits)
  COMP5623M Artificial Intelligence (15 credits)
  COMP5611M Machine Learning (15 credits)
  YCHI5085M Informatics and Data Science in Health Care and Research (15 credits)
  YCHI5086M Law, Ethics and Governance for Health Data Science (15 credits)
  COMP5950M Research Project (AI in Medical Diagnosis and Care) (30 credits)

- PGRs will be required to study 45 credits from the following optional modules across years one and two:

  COMP5122M Data Science (15 credits)
  COMP5511M Principles of Data Science & Analytics (15 credits)
  COMP5510M Data Science & Analytics for Causal Inference and Prediction (15 credits)
  COMP5122M Data Science (15 credits)
  COMP5400M Bio-Inspired Computing (15 credits)
  YCH15035M Clinical Knowledge Management and Decision Support Systems (15 credits)
  YCH15055M Health Data Analytics and Visualisation (15 credits)
  MATH5743M Statistical Learning (15 credits)
  MATH5820M Bayesian Statistics and Causality (15 credits)
  LUBS5980M Innovation Management in Practice (15 credits)
  LUBS5308M Business Analytics and Decision Science (15 credits)

  PGRs may also choose up to 30 credits from the University's taught postgraduate modules, subject to approval by the Module Leader and Programme Director.

Year Two (a total of 180 credits in taught modular courses will be taken over Years One and Two as well as the research project)

- PGRs will continue research under the direction of their supervisor(s) and complete remaining taught module requirements

- Month 18: First formal progress report

1 To be read in conjunction with the general Programme of Study for the Integrated degrees of PhD and Master (MA, LLM or MSc)

- Month 24: Undergo the transfer assessment process at the end of year 2 (month 24).
- PGRs will be required to gain an average of 50% or higher over 180 credits and pass a minimum of 150 taught credits (of the total 180 credits undertaken) and successfully Transfer to full PhD status in order to progress on the programme.
- During years 2-3 there is the opportunity for a 3 month placement with an industry or public-sector partner.

Years Three and Four

- The PGR will continue research under the direction of their supervisor(s)
- Months 36 and 48 Annual Progress Review

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment – overall programme Integrated degree of PhD and MSc (Artificial Intelligence for Medical Diagnosis and Care)

1. Learning Outcomes

On completion of the programme PGRs should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

In addition the CDT has learning outcomes specific to the AI in Medical Diagnosis and Care programme which are:

LO1: In-depth knowledge in AI, with a strong understanding of multi-modal systems that combine structured and unstructured data sources, and systems that explain their inferences.

LO2: Proven expertise in the development of AI systems, data handling, high performance computing and visualisation.

LO3: State of the art knowledge and skills necessary to conduct research in a specialist area within the health domain.

LO4: Proven creative abilities and generic skills necessary to conduct research successfully in any domain.

LO5: Familiarity with working in industry and health service environments.

LO6: A rigorous understanding of the process and challenges in transferring research innovation into routine clinical practice and new health products.

LO7: An understanding of the wider ethical, legal and societal factors involved in responsible research and innovation, particularly in the health domain.

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry
- evaluating their own achievement and that of others
- self-direction and effective decision making in complex and unpredictable situations
- independent learning and the ability to work in a way which ensures continuing professional development

3. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions
- make an original contribution to the field

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis[2] and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice
- drawing on a range of perspectives on the area of study
- evaluating and criticising received opinion
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis

[2] or alternative form of thesis

Programme of study for Doctor of Philosophy – Integrated Tribology 2021/22

Entry Requirements: *This programme no longer recruiting*

Taught Components

Year One (a total of 105 credits, of which a minimum of 90 credits must be level M, in taught modular courses will be taken)

- Compulsory training and skills module:

MEC6907 Tribology Masterclass (University of Sheffield)
MECH5004 Training and Professional Development Activities (30 credits)

- Compulsory group project:

MECH5585 Mini project - group (30 credits)

- Compulsory individual project:

MECH5575 Mini project – individual (30 credits)

- Candidates are required to select one optional module from both lists A & B

List A
MECH5570M Introduction to Tribology (15 credits)
MECH5660M Lubrication and Lubricants (15 credits)
MECH5510M Computational & Experimental Methods (15 credits)
MECH5021M Oilfield Chemistry and Corrosion (15 credits)

List B
MECH5410M Surface Engineering (15 credits)
MECH5195M Automotive Driveline (15 credits)

- The candidate will commence research under the direction of their supervisor(s)

Other optional modules may be selected, subject to consideration and approval of the Programme Manager. Candidates are advised to discuss this with their supervisors.

PGRs who do not complete the above taught requirements will not be able to proceed to the degree of PhD, but may be eligible instead for the award of Postgraduate Diploma in Integrated Tribology.

PGRs will be required to pass at least 90 taught credits in order to progress on the programme.

Research Component Year 1

PGRs will begin their main PhD research in year one. In order to progress PGRs must satisfy the CDT Academic Progression Committee by demonstrating aptitude for doctoral level research, along with the taught components of the programme.

Examinations

PGRs will be notified of their host examinations timetables when appropriate.

Year 2

PGRs must submit their transfer report by no later than 18 months from the start of the candidature. PGRs will be required to successfully transfer to full PhD status by no later than Month 24 of the candidature in order to progress on the programme.

Years Three and Four

The candidate will continue research under the direction of their supervisor(s).

Impact Project

From Month 30 of the candidature, PGRs will carry out a six month impact project where they apply research in an industrial environment. PGRs undertaking industrial one-to-one projects will spend this placement with their industrial sponsor, whereas PGRs completing pre-competitive research will choose from a list of industrial placement offers. The industrial impact projects will be defined in a facilitated workshop, with PGRs present as key participants.

Learning Outcomes / Transferable Key Skills / Learning Context /Assessment for PhD

1. Learning Outcomes

On completion of the research programme PGRs should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review;
- to present and defend original research outcomes which extend the forefront ofa discipline or relevant area of professional/clinical practice;
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills;
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate;
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these;
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline;
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme:

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry;
- evaluating their own achievement and that of others;
- self-direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;

3. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to:

- develop to a high level interests and informed opinions;
- develop to a high level their design and management of their learning activities;
- develop to a high level their communication of their conclusions;
- make an original contribution to the field

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis[5] and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional / clinical practice normally leading to published work;
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice;
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice;
- drawing on a range of perspectives on the area of study;
- evaluating and criticising received opinion;
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data;
- the written style and overall presentation of the thesis

Doctor of Philosophy - Nuclear Energy - GREEN (Growing skills for Reliable Economic Energy from Nuclear) 2021/22

Programme of study for Doctor of Philosophy - Nuclear Energy - GREEN (Growing skills for Reliable Economic Energy from Nuclear)

Entry Requirements: 1st, 2.1, MEng or Distinction, Merit, MSc in a relevant science or engineering discipline.

Taught Components Year 1

Year One (a total of 105 credits)

- Compulsory group project:
  CAPE5995M CDT Short Research Project (60 credits)

- Compulsory training and skills module:
  JUMNNG001 Introduction to the Chemistry and Physics of the Nuclear Fuel Cycle (15 credits)
  JUMNNG002 Materials Science in the Nuclear Fuel Cycle (15 credits)
  JUMNNG003 Environmental Radiochemistry and the Science of Radioactive Waste Disposal (15 credits)

- The candidate will also commence research under the direction of their supervisor(s)

Year Two (a total of 15 credits)

- Compulsory training and skills module:

  JUMNNG004 Site Visits, Winter School and Skills Training (15 credits)

PGRs will be required to pass at least 90 taught credits in order to progress on the programme.

Research Component Year 1

PGRs will begin their main PhD research in year one. In order to progress PGRS must satisfy the CDT Academic Progression Committee by demonstrating aptitude for doctoral level research, along with successful completion of the taught components of the programme.

Research Component Year 2

PGRs must submit their transfer report by no later than 18 months from the start of the candidature and will be required to successfully transfer to full PhD status by no later than Month 24 in order to progress on the programme.

Research Component Years Three and Four

The PGR will continue research under the direction of their supervisor(s).

Learning Outcomes / Transferable Key Skills / Learning Context /Assessment for PhD

1. Learning Outcomes

On completion of the research programme PGRs should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review;
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice;
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills;
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate;
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these;
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline;
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme:

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry;
- evaluating their own achievement and that of others;
- self-direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;

3. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to:

- develop to a high level interests and informed opinions;
- develop to a high level their design and management of their learning activities;
- develop to a high level their communication of their conclusions;
- make an original contribution to the field

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional / clinical practice normally leading to published work;
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice;
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice;
- drawing on a range of perspectives on the area of study;
- evaluating and criticising received opinion;
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data;
- the written style and overall presentation of the thesis

Doctor of Philosophy – Next Generation Nuclear 2021/22

Programme of study for Doctor of Philosophy – Next Generation Nuclear

This programme is no longer recruiting from 2019/20

Entry Requirements: 1st, 2.1, MEng or Distinction, Merit, MSc in a relevant science or engineering discipline.

Taught Components Year 1

Year One (a total of 105 credits)

- Compulsory group project:
  CAPE5995M CDT Short Research Project (60 credits)

- Compulsory training and skills module:
  JUMNNG001 Introduction to the Chemistry and Physics of the Nuclear Fuel Cycle (15 credits)
  JUMNNG002 Materials Science in the Nuclear Fuel Cycle (15 credits)
  JUMNNG003 Environmental Radiochemistry and the Science of Radioactive Waste Disposal (15 credits)

- The candidate will also commence research under the direction of their supervisor(s)

Year Two (a total of 15 credits)

- Compulsory training and skills module:

  JUMNNG004 Site Visits, Winter School and Skills Training (15 credits)

PGRs will be required to pass at least 90 taught credits in order to progress on the programme.

Research Component Year 1

PGRs will begin their main PhD research in year one. In order to progress PGRS must satisfy the CDT Academic Progression Committee by demonstrating aptitude for doctoral level research, along with successful completion of the taught components of the programme.

Research Component Year 2

PGRs must submit their transfer report by no later than 18 months from the start of the candidature and will be required to successfully transfer to full PhD status by no later than Month 24 in order to progress on the programme.

Research Component Years Three and Four

The PGR will continue research under the direction of their supervisor(s).

Learning Outcomes / Transferable Key Skills / Learning Context /Assessment for PhD

1. Learning Outcomes

On completion of the research programme PGRs should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review;
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice;
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills;
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate;
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these;
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline;
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme:

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry;
- evaluating their own achievement and that of others;
- self-direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;

3. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to:

- develop to a high level interests and informed opinions;
- develop to a high level their design and management of their learning activities;
- develop to a high level their communication of their conclusions;
- make an original contribution to the field

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional / clinical practice normally leading to published work;
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice;
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice;
- drawing on a range of perspectives on the area of study;
- evaluating and criticising received opinion;
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data;
- the written style and overall presentation of the thesis

Programme of study for Doctor of Philosophy – Physics Studies 2021/22

Entry Requirements

At least a 2:1 honours degree, or equivalent qualification, in a subject relevant to their proposed field of research. The standard minimum University English language requirement must be attained, i.e. IELTS 6.0 overall with not less than 5.5 in any skill area (Reading: Writing; Listening and Speaking).

Taught Components Year 1

Year One (a total of 120 credits, of which a minimum of 90 credits must be level M, in taught modular courses will be taken)

- **Compulsory training and skills modules (90 credits)**

PHYS5030M PhD-Plus Research Project (90 credits)

- **Optional Modules (30 credits)**

Postgraduate researchers (PGRs) must take an additional 30 credits of optional modules from the list below or from other modules relevant to the research being undertaken and recommended by the supervision team.

These will not be restricted to the School of Physics and Astronomy, but must be Science, Technology, Engineering and Mathematics (STEM) related subjects and are subject to consideration and approval of the supervision team, programme manager and confirmation from the School. Modules must be selected by no later than Week 4 after the start of study.

Level 3
PHYS3777 Advanced Experimental Techniques and Analysis (30 credits)

Level 5
PHYS5016M Soft Matter Physics: Liquid Crystals (15 credits)
PHYS5017M Many Body Quantum Physics (15 credits)
PHYS5100M Winds, Bubbles and Explosions (15 credits)
PHYS5116M Bionanophyics 2: Advanced Bionanophyics Research (15 credits)
PHYS5300M Superconductivity (15 credits)
PHYS5342M Soft Matter Physics: Polymer, Colloids and Glasses (15 credits)
PHYS5360M Quantum Transport in Nanostructures (15 credits)
PHYS5380M Quantum Field Theory (15 credits)
PHYS5390M General Relativity (15 credits)
PHYS5410M Quantum Information Science & Technology (15 credits)
PHYS5431M Current Research Topics in Physics (15 credits)
PHYS5800M Quantum Optics (15 credits)

PGRs will be required to pass at least 90 taught credits in Year One in order to progress on the programme. Those who do not complete the above taught requirements within Year One of study will not be able to proceed to the degree of PhD, but may be eligible instead for the award of a Postgraduate Certificate or Postgraduate Diploma in Physics Studies.

PGRs can also audit modules in the STEM-related subjects on an ad-hoc basis, subject to the approval of the supervision team, programme manager and confirmation from the School. These modules will not be assessed and will not form part of the Postgraduate Certificate or Diploma.

In addition to the taught modules the candidate will commence research under the direction of their supervision team

Year 2

In addition to the Year One progression requirement, PGRs will be required to successfully transfer to full PhD status by no later than Month 24 in order to progress on the programme.

Years Three and Four

The candidate will continue research under the direction of their supervision team.

Learning Outcomes / Transferable Key Skills / Learning Context /Assessment for Postgraduate Certificate / Diploma

1. **Learning outcomes**

On completion of the programme students should have provided evidence of being able to:

- demonstrate in-depth specialist knowledge of techniques relevant to the discipline or to demonstrate an advanced understanding of concepts, information and techniques informed by knowledge across, or in aspects at, the forefront of the discipline;
- exhibit competence in the exercise of generic and subject-specific intellectual abilities;
- demonstrate an advanced understanding of techniques applicable to their own research area of specific interest within the broader discipline;
- proactively to formulate ideas and hypotheses and to evaluate these;
- evaluate current issues and research in the discipline.

2. **Transferable (Key) Skills**

Postgraduate Diploma & Postgraduate Certificate students will have had the opportunity to acquire the following abilities as defined in the modules specified for the programme:

- the skills necessary to undertake a higher research degree and/or for employment in a higher capacity in industry or area of professional practice;
- evaluating their own achievement and that of others;
- self-direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;
- critically to engage in the development of professional/disciplinary boundaries and norms.

3. **Assessment**

Achievement for the Postgraduate Diploma & Postgraduate Certificate will be assessed by a variety of methods in accordance with the learning outcomes of the programme and will involve the achievement of the students in:

- demonstrating the ability to apply breadth and/or depth of knowledge to a complex specialist area;
- drawing on a range of perspectives on an area of study;
- evaluating received opinion;
- making sound judgements whilst understanding the limitations on judgements made in the absence of complete data.

Learning Outcomes / Transferable Key Skills / Learning Context /Assessment for Doctor of Philosophy

1. **Learning Outcomes**

On completion of the research programme students should have shown evidence of being able:

- To enhance language skills in the context of a STEM research environment, relevant to communicating science (written and oral)
- To enhance the foundation knowledge relevant to the research project through formal taught units.
- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review;
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice;
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills;
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate;
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these;
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline;
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

2. **Transferable (Key) Skills**

Students will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry;
- evaluating their own achievement and that of others;
- self-direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;

3. **Learning Context**

This will include the critical analysis of, and decision-making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for students to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions;
- make an original contribution to the field

Students will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. **Assessment**

Achievement will be assessed by the examination of the candidate's thesis and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work:
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice;
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice;
- drawing on a range of perspectives on the area of study;
- evaluating and criticising received opinion;
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis

Programme of study for Doctor of Philosophy – Soft Matter and Functional Interfaces
This programme is no longer recruiting from 2019-20

Year One

The candidate will commence research under the direction of their supervision team and expected to meet with their supervisors at least 10 times per year.

Months One to Five
Case studies at the University of Durham

Month Five to Six
Case study at the University of Leeds

Month Six to Seven
Case study at the University of Edinburgh

Month Seven to Eight
Advanced industrial case study at the University of Durham

Month Nine
Fully registered at University of Leeds
Completion of training plan

Month Eleven
SOFI-CDT mini-MBA (2 week summer school - University of Durham)

Month Twelve
First year progress report

Year 2

The candidate will continue research under the direction of their supervision team and expected to meet with their supervisors at least 10 times per year.

Month Seventeen
Submission of the transfer report

Month Twenty Three
SOFI-CDT mini-MBA (2 week summer school - University of Durham)

Month Twenty Four
Second year progress report

Candidates will be required to successfully transfer to full PhD status by no later than Month 24 in order to progress on the programme.

Year Three

The candidate will continue research under the direction of their supervision team and expected to meet with their supervisors at least 10 times per year.

Month Thirty Six
Third year progress report

Year Four

The candidate will continue research under the direction of their supervision team and expected to meet with their supervisors at least 10 times per year.

DOCTOR OF PHILOSOPHY – Soft Matter and Functional Interfaces

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for PhD

1. Learning Outcomes

On completion of the research programme students should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review;
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice;
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills;
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate;
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these;
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline;
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

2. Transferable (Key) Skills

Students will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry;
- evaluating their own achievement and that of others;
- self-direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;

3. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques.

Opportunities will be provided for students to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions;
- make an original contribution to the field

Students will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis5 and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work;
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice;
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice;
- drawing on a range of perspectives on the area of study;

- evaluating and criticising received opinion;
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis

Programme of study for Doctor of Philosophy – Soft Matter for Formulation and Industrial Innovation (SOFI^2) 2021/22

Entry Requirements

2.1 honours degree or higher in an appropriate physical science subject, food science, mathematics or engineering. English Language IELTS (6.5 overall with no element less than 6.0)

Year One

The candidate will commence research under the direction of their supervision team and is expected to meet with their supervisors at least 10 times per year.

Month Four to Five
Advanced case studies at the University of Leeds and University of Edinburgh (3 weeks at each)

Month Five to Six
Advanced case study and transferable skills training at the University of Durham

Month Six
Fully registered at University of Leeds
Commence six month research project

The candidate will commence research under the direction of their supervision team and is expected to meet with their supervisors regularly from month six.

Month Twelve
Completion of six month research project

Year 2

Month Thirteen
Commence standard PhD
Completion of Training Plan

Month Fourteen
First Formal Progress Review and submission of SOFI report

The candidate will continue research under the direction of their supervision team and is expected to meet with their supervisors at least 10 times per year.

Month Eighteen
Submission of the transfer report

Month Nineteen
SOFI-CDT mini-MBA (2 weeks - University of Durham)

Month Twenty-Four
Second year progress report

Candidates will be required to submit for the Transfer process by month 18 and successfully transfer to full PhD status by no later than Month 20 in order to progress on the programme.

Year Three

The candidate will continue research under the direction of their supervision team and is expected to meet with their supervisors at least 10 times per year.

Month Thirty-One
SOFI-CDT mini-MBA (2 weeks - University of Durham)

Month Thirty-Six
Third year progress report

Year Four

The candidate will continue research under the direction of their supervision team and is expected to meet with their supervisors at least 10 times per year.

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for PhD

1. Learning Outcomes

On completion of the research programme students should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review;
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice;
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills;
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate;
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these;
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline;
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

2. Transferable (Key) Skills

Students will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry;
- evaluating their own achievement and that of others;
- self-direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;

3. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques.

Opportunities will be provided for students to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions;
- make an original contribution to the field

Students will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis5 and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work;
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice;
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice;
- drawing on a range of perspectives on the area of study;
- evaluating and criticising received opinion;
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis

Programme of study for Doctor of Philosophy – Anatomy 2021/22

Entry Requirements: This programme is no longer recruiting

Year One

The candidate will commence research under the direction of their supervision team and expected to meet with their supervisors at least 10 times per year.

Candidates will be expected to conduct in excess of 250 hours of anatomy demonstration.

Month One
Completion of the training plan

Month Six
6 month progress report

Month Twelve
First year progress report

Year 2

The candidate will continue research under the direction of their supervision team and expected to meet with their supervisors at least 10 times per year.

Candidates will be expected to conduct in excess of 250 hours of anatomy demonstration.

Month Sixteen
Submission of transfer report

Month Twenty Four
Second year progress report

Candidates will be required to successfully transfer to full PhD status by no later than Month 24 in order to progress on the programme. The decision to transfer will be based on the submission of appropriate material for assessment and all Postgraduate Researchers (PGRs) must undergo an oral examination by an assessment panel which must include at least two independent individuals who have not been involved in the supervisory support of the candidate. The PGR will be interviewed by the assessment panel in the form of a viva voce examination.

Year Three

The candidate will continue research under the direction of their supervision team and expected to meet with their supervisors at least 10 times per year.

Candidates will be expected to conduct in excess of 250 hours of anatomy demonstration.

Month Thirty Six
Third year progress report

Year Four

Candidates will be expected to conduct in excess of 250 hours of anatomy demonstration.

The candidate will continue research under the direction of their supervision team and expected to meet with their supervisors at least 10 times per year.

DOCTOR OF PHILOSOPHY – Anatomy

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for PhD

1. Learning Outcomes

On completion of the research programme students should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review;
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice;
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills;
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate;
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these;
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline;
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

2. Transferable (Key) Skills

Students will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry;
- evaluating their own achievement and that of others;
- self-direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;

3. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques.

Opportunities will be provided for students to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions;
- make an original contribution to the field

Students will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work;
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice;
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice;
- drawing on a range of perspectives on the area of study;

- evaluating and criticising received opinion;
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis

Programme of study for Doctor of Philosophy – Cardiovascular Disease and Diabetes 2021/22

Entry Requirements

Applicants must have, or be expected to obtain a 2.1 (or equivalent) relevant BSc degree. British Council IELTS of score 7.0 overall with no less than 6.5 in other skill areas (reading, writing, listening and speaking) This is shown on the individual project adverts.

Programme

Year One

The candidate will commence research under the direction of their supervision team and expected to meet with their supervisors at least 10 times per year. First year training to expand the knowledge, capabilities and awareness of the challenge of addressing the problems of cardiovascular disease and diabetes. This is delivered through a full complement of lectures arranged throughout the year which the students will be expected to attend.

Month 1
Completion of the training plan

Month 5
Work begins on the thesis proposal

Month 6
6 month progress report

Month 12
First year progress report

Year 2

The candidate will continue research under the direction of their supervision team and expected to meet with their supervisors at least 10 times per year.

Month 16
Submission of transfer report

Month 18
Candidates will be expected to have their Transfer by month 18

Month 24
a final decision to full PhD status no later than month 24 (if 6 month deferral needed)

Month 24
Second year progress report

Candidates will be required to successfully transfer to full PhD status by no later than Month 24 in order to progress on the programme.

Year Three

The candidate will continue research under the direction of their supervision team and expected to meet with their supervisors at least 10 times per year.

Month 36
Third year progress report

Each candidate will undertake a 3-month visit to a collaborating research laboratory outside Leeds. This will be student-led but developed in coordination with the Supervisory Team, the Mentor, and the Programme Management Team. The plan will be developed according to the timetable defined in the Foundation Year Programme. The visit is expected to occur in Year 3 but may occur in Year 2 or 4 if agreed with the Programme Management Team.

Year Four

The candidate will continue research under the direction of their supervision team and expected to meet with their supervisors at least 10 times per year.

DOCTOR OF PHILOSOPHY – Cardiovascular Disease and Diabetes

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for PhD

1. Learning Outcomes

On completion of the research programme students should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review;
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice;
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills;
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate;
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these;
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline;
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

2. Transferable (Key) Skills

Students will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry;
- evaluating their own achievement and that of others;
- self-direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;

3. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques.

Opportunities will be provided for students to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions;
- make an original contribution to the field

Students will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis5 and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work;
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice;
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice;
- drawing on a range of perspectives on the area of study;

- evaluating and criticising received opinion;
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis

Programme of study for Doctor of Philosophy – Cardiovascular and Metabolic Disease 2021/22

Entry Requirements

A minimum of a 2:1 honours degree, or equivalent qualification, in biological/physical sciences/medicine or subjects allied to medicine relevant to their proposed field of research.

British Council IELTS 7.0 overall with not less than 6.5 in other skill areas (Reading, Writing, Listening and Speaking). Qualification must be less than 2 years old at the start of the programme.

Year 1 (Taught Components – 120 credits)

Compulsory (90 credits)

MEDP5321M Research Methods (15 credits)
MEDS5020M Paper Criticism in Medicine (15 credits)
CARD5001M Research investigation 1 (30 credits)
CARD5002M Research investigation 2 (30 credits)

Optional (30 credits)

MEDP5311M Digital Radiography and X-ray Computed Tomography (15 credits)
MEDP5312M Magnetic Resonance Imaging (15 credits)
MEDP5314M Ultrasound Imaging (15 credits)
MEDP5317M Radionuclide Imaging (15 credits)
MEDP5318M Medical Image Analysis (15 credits)
EPIB5022M Core Epidemiology (15 credits)
EPIB5023M Introduction to Modelling (15 credits)
EPIB5024M Statistical Inference (15 credits)
EPIB5032M Introduction to Genetic Epidemiology (15 credits)
MEDM5101M Research Informatics and Dissemination (15 credits)
MEDM5111M Human Molecular Genetics (15 credits)
MEDM5131M Animal Models of Disease (15 credits)
MEDM5121M Immunity and Disease (15 credits)

The Postgraduate Researcher (PGR) will also commence research under the direction of their supervision team.

Other optional modules may be selected, subject to consideration and approval of the Programme Manager. PGRs are advised to discuss this with their supervision team. Other optional modules must be chosen through discussion and in agreement with the host and programme lead to compliment the research project area of each individual candidate and should be selected to increase the breadth and depth of knowledge.

Optional modules can be either undergraduate or postgraduate as per Ordinance XI but all PGRs must undertake a minimum of 90 credits of modules at M level.

PGRs must pass all 120 credits in order to progress on the programme. PGRs who do not complete the taught requirements will not be able to proceed to the degree of PhD, but may be eligible instead for the award of Postgraduate Diploma in Cardiovascular and Metabolic Disease.

Year 2

PGRs are required to successfully transfer to full PhD status by no later than Month 24 of the candidature in order to progress on the programme.

Years Three and Four

The candidate will continue research under the direction of their supervision team.

Learning Outcomes / Transferable Key Skills / Learning Context /Assessment for Postgraduate Diploma

1. **Learning Outcomes**

On completion of the taught component of the programme PGRs should have shown evidence of being able

- to demonstrate in-depth, extended or specialist knowledge of techniques relevant to the discipline or to demonstrate an advanced understanding of concepts, information and techniques informed by knowledge at the forefront of their chosen area of research;
- to demonstrate an advanced understanding of techniques applicable to their own area of research, aligned to cardiovascular and metabolic disease;
- to proactively formulate ideas and hypotheses and develop, implement and execute plans by which to evaluate these;
- to evaluate critically current issues and research in their proposed area of study and aligned to cardiovascular and metabolic disease
- Demonstrate in-depth, extended or specialist knowledge of techniques relevant to the discipline or to demonstrate an advanced understanding of concepts, information and techniques informed by knowledge at the forefront of their chosen area of research, aligned to cardiovascular and metabolic disease
- Demonstrate an advanced understanding of techniques applicable to their own area of research
- Proactively formulate ideas and hypotheses and develop, implement and execute plans by which to evaluate these
- Evaluate critically current issues and research in their proposed area of study

2. **Transferable Key Skills**

PGRs will have had the opportunity to acquire the following abilities as defined in the modules specified for the programme:

- the skills necessary to undertake a higher research degree;
- evaluating their own achievement and that of others;
- self-direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;
- critically to engage in the development of professional/disciplinary boundaries and norms.

3. **Assessment**

Achievement for the Postgraduate Diploma and Postgraduate Certificate will be assessed by a variety of methods in accordance with the learning outcomes of the programme and will involve the achievement of the PGRs in:

- demonstrating the ability to apply breadth and/or depth of knowledge to a complex specialist area, aligned to cardiovascular and metabolic disease;
- drawing on a range of perspectives on an area of study;
- evaluating and critiquing received opinion;
- making sound judgements whilst understanding the limitations on judgements made in the absence of complete data.
- Evidencing the ability to conduct independent research within their proposed area of study that is aligned to cardiovascular and metabolic disease.

Learning Outcomes / Transferable Key Skills / Learning Context /Assessment for PhD

1. Learning Outcomes

On completion of the research programme PGRs should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review;
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice;
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills;
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate;
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these;
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline;
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme:

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry;
- evaluating their own achievement and that of others;
- self-direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;

3. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to:

- develop to a high level interests and informed opinions;
- develop to a high level their design and management of their learning activities;
- develop to a high level their communication of their conclusions;
- make an original contribution to the field

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis5 and performance under oral examination. Assessment will involve the achievement of the candidate in:

DOCTOR OF PHILOSOPHY – CARDIOVASCULAR AND METABOLIC DISEASE

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional / clinical practice normally leading to published work;
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice;
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice;
- drawing on a range of perspectives on the area of study;
- evaluating and criticising received opinion;
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data;
- the written style and overall presentation of the thesis

Programme of study for Doctor of Philosophy – Cardiovascular and Metabolic Disease 2021/22

Entry Requirements – This programme is no longer recruiting. Candidates are advised to consider the 4-year *Doctor of Philosophy – Medicine, Health and Human Disease*

Year 1 (Taught Components – 120 credits)

Compulsory (90 credits)

MEDP5321M Research Methods (15 credits)
MEDS5020M Paper Criticism in Medicine (15 credits)
CARD5001M Research investigation 1 (30 credits)
CARD5002M Research investigation 2 (30 credits)

Optional (30 credits)

MEDP5311M Digital Radiography and X-ray Computed Tomography (15 credits)
MEDP5312M Magnetic Resonance Imaging (15 credits)
MEDP5314M Ultrasound Imaging (15 credits)
MEDP5317M Radionuclide Imaging (15 credits)
MEDP5318M Medical Image Analysis (15 credits)
EPIB5022M Core Epidemiology (15 credits)
EPIB5023M Introduction to Modelling (15 credits)
EPIB5024M Statistical Inference (15 credits)
EPIB5032M Introduction to Genetic Epidemiology (15 credits)
MEDM5101M Research Informatics and Dissemination (15 credits)
MEDM5111M Human Molecular Genetics (15 credits)
MEDM5131M Animal Models of Disease (15 credits)
MEDM5121M Immunity and Disease (15 credits)

The Postgraduate Researcher (PGR) will also commence research under the direction of their supervision team.

Other optional modules may be selected, subject to consideration and approval of the Programme Manager. PGRs are advised to discuss this with their supervision team. Other optional modules must be chosen through discussion and in agreement with the host and programme lead to compliment the research project area of each individual candidate and should be selected to increase the breadth and depth of knowledge.

Optional modules can be either undergraduate or postgraduate as per Ordinance XI but all PGRs must undertake a minimum of 90 credits of modules at M level.

PGRs must pass all 120 credits in order to progress on the programme. PGRs who do not complete the taught requirements will not be able to proceed to the degree of PhD, but may be eligible instead for the award of Postgraduate Diploma in Cardiovascular and Metabolic Disease.

Year 2

PGRs are required to successfully transfer to full PhD status by no later than Month 24 of the candidature in order to progress on the programme.

Years Three and Four

The candidate will continue research under the direction of their supervision team.

Learning Outcomes / Transferable Key Skills / Learning Context /Assessment for Postgraduate Diploma

1. Learning Outcomes

On completion of the taught component of the programme PGRs should have shown evidence of being able

- to demonstrate in-depth, extended or specialist knowledge of techniques relevant to the discipline or to demonstrate an advanced understanding of concepts, information and techniques informed by knowledge at the forefront of their chosen area of research;
- to demonstrate an advanced understanding of techniques applicable to their own area of research, aligned to cardiovascular and metabolic disease;
- to proactively formulate ideas and hypotheses and develop, implement and execute plans by which to evaluate these;
- to evaluate critically current issues and research in their proposed area of study and aligned to cardiovascular and metabolic disease
- Demonstrate in-depth, extended or specialist knowledge of techniques relevant to the discipline or to demonstrate an advanced understanding of concepts, information and techniques informed by knowledge at the forefront of their chosen area of research, aligned to cardiovascular and metabolic disease
- Demonstrate an advanced understanding of techniques applicable to their own area of research
- Proactively formulate ideas and hypotheses and develop, implement and execute plans by which to evaluate these
- Evaluate critically current issues and research in their proposed area of study

2. Transferable Key Skills

PGRs will have had the opportunity to acquire the following abilities as defined in the modules specified for the programme:

- the skills necessary to undertake a higher research degree;
- evaluating their own achievement and that of others;
- self-direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;
- critically to engage in the development of professional/disciplinary boundaries and norms.

3. Assessment

Achievement for the Postgraduate Diploma and Postgraduate Certificate will be assessed by a variety of methods in accordance with the learning outcomes of the programme and will involve the achievement of the PGRs in:

- demonstrating the ability to apply breadth and/or depth of knowledge to a complex specialist area, aligned to cardiovascular and metabolic disease;
- drawing on a range of perspectives on an area of study;
- evaluating and critiquing received opinion;
- making sound judgements whilst understanding the limitations on judgements made in the absence of complete data.

- Evidencing the ability to conduct independent research within their proposed area of study that is aligned to cardiovascular and metabolic disease.

Learning Outcomes / Transferable Key Skills / Learning Context /Assessment for PhD

1. Learning Outcomes

On completion of the research programme PGRs should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review;
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice;
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills;
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate;
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these;
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline;
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme:

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry;
- evaluating their own achievement and that of others;
- self-direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;

3. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to:

- develop to a high level interests and informed opinions;
- develop to a high level their design and management of their learning activities;
- develop to a high level their communication of their conclusions;
- make an original contribution to the field

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis5 and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline

or within different aspects of the area of professional / clinical practice normally leading to published work;

- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice;
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice;
- drawing on a range of perspectives on the area of study;
- evaluating and criticising received opinion;
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data;
- the written style and overall presentation of the thesis

Programme of study for Doctor of Philosophy – Molecules to Product 2021/22

School responsible for the programme: Chemical and Process Engineering

Criteria for Admission: Minimum II(i) for MEng, MChem, MPhys or II(i) with a Merit MSc equivalent from areas including but not limited to: Chemical Engineering, Chemistry, Materials Science and Engineering, Physics, Mathematics and Statistics and Food Science. Applicants with a Bachelor degree with Ist class honours with a minimum of 2 years' experience in industry will also be considered.

Year One

- The candidate will commence research under the direction of their supervision team and expected to meet with their supervisors at least 10 times per year.

- PGRs undertake the following 6 non-credit bearing courses:

  Molecules to Product – An Introduction to Cross-Scale Challenges
  Functionalisation and Performance of Products
  Bonding to Bulk Measures - Benchmark Characterisation Techniques Applicable to the Chemicals Continuum
  Process Modelling and Data Analysis
  Essential Skills for Success
  Behavioural Aspects of Management Decision Making

- Annual Conference, ORBIT Training

- Month 4: Completion of the training plan

- Month 6: First Formal Progress Report

- Month 10: Submission of Transfer Report

Candidates will be required to undergo the formal assessment procedure for transfer to PhD status before the end of the second year of study.

Year 2

- The candidate will continue research under the direction of their supervision team and expected to meet with their supervisors at least 10 times per year.

- PGRs undertake the following 3 non-credit bearing courses:

  Holistic Process Design
  Applied Decision Making
  Advanced Technical Skills Development

- Minimum 3 months Industrial Placement or equivalent internship (or in year 3)

- Month 22: Draft Chapter/Journal Publication

Year Three

- The candidate will continue research under the direction of their supervision team and expected to meet with their supervisors at least 10 times per year.

- PGRs undertake the following 2 non-credit bearing courses:

  Innovation and Enterprise
  Advanced Technical Skills Development

- Impact coaching through OD&PL, Annual Conference, Public Engagement and Outreach Activities
- Month 34: Draft Chapter/Journal Publication
- Minimum 3 months Industrial Placement or equivalent internship (or in year 2)

Year Four

- The candidate will continue research under the direction of their supervision team and expected to meet with their supervisors at least 10 times per year.
- Impact Workshop hosted by Centre for Process Innovation (CPI), Annual Conference, Public Engagement and Outreach Activities
- Month 48: Thesis submission or plan for submission within the 5 year deadline

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for PhD

1. Learning Outcomes

On completion of the research programme PGRs should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry
- evaluating their own achievement and that of others
- self-direction and effective decision making in complex and unpredictable situations
- independent learning and the ability to work in a way which ensures continuing professional development

3. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions
- make an original contribution to the field

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis[1] and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice
- drawing on a range of perspectives on the area of study
- evaluating and criticising received opinion
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis

[1] or alternative form of thesis

Programme of study for Doctor of Philosophy – Aerosol Science 2021/22

School: Chemical and Process Engineering

Entry Requirements: Applicants will normally be required to have obtained a relevant degree *at least* equivalent to a UK upper second class (2:1) honours degree. International PGRs will normally be required to have achieved at least 6.0 on IELTS (with no component below 5.5) or an equivalent English language qualification.

There is normally one entry point for the integrated degrees of PhD and Master in September/October of each academic session.

Year One

- Month 1: Completion of the training plan
- Taught assessed modules: 120 taught credits at the University of Bristol and 60 credit research project to be assessed by the University of Bristol

Core Aerosol Science I	30 credits
Core Aerosol Science II	30 credits
Aerosol Science: Research Methods	30 credits
Aerosol Science: Professionalism and Translation	30 credits
Aerosol Science: Thematic Broadening Sabbatical	60 credits

- Location of study:

Months 1 – 7: University of Bristol
Months 8 – 10: Thematic Broadening Placement
Months 11 -48: University of Leeds

Successful completion of the taught elements of the programme is required in year one is required in order for PGRs to progress on the programme.

Year Two

- The candidate will carry out research under the direction of their supervision team and expected to meet with their supervisors at least 10 times per year.
- Month 18: First Formal Progress Report
- Month 24: Candidates will be required to undergo the formal assessment procedure for transfer to PhD status before the end of the second year of study.
- 2 weeks of summer school
- Industrial Placement (or in year 3)

Year Three

- The candidate will carry out research under the direction of their supervision team and expected to meet with their supervisors at least 10 times per year.
- Month 36: Annual Progress Review
- 2 weeks of summer school
- Industrial Placement (or in year 3)

Year Four

- The candidate will carry out research under the direction of their supervision team and expected to meet with their supervisors at least 10 times per year.
- Month 48: Annual Progress Review (unless thesis submitted)
- 2 weeks of summer school
- Industrial Placement (or in year 3)

Exit Award

An MRes in Aerosol Science may be awarded by the University of Bristol to candidates exiting the programme who have successfully completed the taught modular requirements for award in year one of study.

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for PhD

Learning Outcomes

On completion of the research programme PGRs should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

1. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry
- evaluating their own achievement and that of others
- self-direction and effective decision making in complex and unpredictable situations
- independent learning and the ability to work in a way which ensures continuing professional development

2. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions
- make an original contribution to the field

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

3. Assessment

Achievement will be assessed by the examination of the candidate's thesis[1] and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice
- drawing on a range of perspectives on the area of study
- evaluating and criticising received opinion
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis

[1] or alternative form of thesis

Programme of study for Doctor of Philosophy – Medicine, Health and Human Disease 2021/22

Entry Requirements: A minimum of a II(i) honours degree, or equivalent qualification, in biological/physical sciences/medicine or subjects allied to medicine relevant to the proposed field of research.

IELTS 7.0 overall with not less than 6.5 in other skill areas (Reading, Writing, Listening and Speaking).

Applications for **Accredited Prior Learnin**g (APL) can be requested for taught modules during the first year of the programme.

Year One

The candidate will commence research in the School of Medicine under the direction of their supervision team and expected to meet with their supervisors at least 10 times per year.

Month One
Completion of the training plan

- Compulsory training and skills modules:
  Research Methods (MEDP5321M) (15 credits)
  Paper Criticism (MEDS520M) (15 credits)

- Additional 30 credits to be taken in specialist modules (to be agreed with the Programme Leader)

- A further 60 credits consisting of either two 30 credit mini research investigations of 12 weeks duration or one 60 credit research project over 24 weeks (eg routine data analysis or a systemic review)

Month Six
6 month progress report

Month Twelve
First year progress report

Year 2

The candidate will continue research under the direction of their supervision team and expected to meet with their supervisors at least 10 times per year.

Month 22
Submission of transfer report

Candidates will be required to undergo the formal assessment procedure for transfer to PhD status before the end of the second year of study.

Year Three

The candidate will continue research under the direction of their supervision team and expected to meet with their supervisors at least 10 times per year.

Month Thirty Six
Third year progress report

Year Four

The candidate will continue research under the direction of their supervision team and expected to meet with their supervisors at least 10 times per year.

Month Forty Eight
Fourth year progress report (unless thesis submitted)

Exit Award

A PG Diploma in Medical Research may be awarded to candidates exiting the programme who have successfully completed the taught modular requirements for the award in year one of study.

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for PhD

1. Learning Outcomes

On completion of the research programme PGRs should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review;
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice;
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills;
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate;
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these;
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline;
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry;
- evaluating their own achievement and that of others;
- self-direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;

3. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques.

Opportunities will be provided for students to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions;
- make an original contribution to the field

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis[1] and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work;
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice;
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice;
- drawing on a range of perspectives on the area of study;
- evaluating and criticising received opinion;
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis

[1] Or alternative form of thesis

Programme of study for Doctor of Philosophy – Water and Waste Infrastructure and Services Engineering for Resilience (Water WISER) 2021/22

School: Civil Engineering

Entry Requirements: 1st class (Hons) degree in relevant subject area e.g. engineering, social sciences, health sciences, economics etc. Where candidates have other relevant qualifications or experience candidates with a II(i) will also be considered.

Part-time candidates will normally be expected to commence the programme at the same time as the full-time cohort.

Year One

- An outline training plan will be developed by the end of Month 1 when the PGR selects the taught elements
- Month 6 (Full-time candidates)/ Month 9 (Part-time candidates): submit a draft research plan and supervisory teams appointed
- Month 12 (Full-time candidates)/ Month 18 (Part-time candidates): submit final draft PhD proposal for approval by the CDT management team (including the training plan)
- A minimum of four (60 Credits) specialised subject modules must be taken over Year One and Two (Part-time candidates must select a minimum of 30 credits in Year One) selected from the following list:

  NUFF5065M Key Issues in International Health
  CIVE5050M Management of WASH Projects
  CIVE5055M Engineering for Public Health
  CIVE5311 Wastewater and Faecal Sludge Management
  CIVE5680M Environmental Microbiology
  CIVE5370 Indoor and Urban Air Quality
  CIVE5535 Advanced Wastewater Treatment
  CIVE5990 Project and Asset Management
  CIVE5321M Water Supply
  CIVE5316M Water Resources Management
  CIVE5575M Groundwater Pollution and Contaminated Land
  CIVE5557M Solid Waste Management
  CIVE5985M Circular Economy and Resource Recovery from Waste
  CIVE5596M Engineering in Emergencies
  SOEE5095M Environmental Economics and Policy
  TRAN5750M Transport in Development
  GEOG5060M GIS and Environment
  GEOG5530M River basin management for water quality
  GEOG5710M Digital Image Processing for Environmental Remote Sensing
  GEOG5790M Programming for Geographical Information Analysis; Advanced Skills
  GEOG5830M Environmental Assessment
  SOEE5483M Critical Perspectives in Environment and Development
  SOEE5550M Climate Change; Impacts and Adaptation
  SOEE5970M Terrestrial Biosphere in Earth System
  NUFF5635M Epidemiology and Biostatistics for Health Systems Strengthening

  other options may be included if approved by the Programme Leader. The structured training programme must be discussed and agreed with the CDT management team via the Programme Leader.

- a compulsory non-credit-bearing research skills training course called Water WISER Research Skills

- compulsory training events; annual team building, challenge week conference and two professional networking events

- Part time candidates will be required to attend all the cohort activities during Year 1 (around 15 days), along with the full time cohort.
- In subsequent years part time candidates will attend all the team building events (a total of around 10 days) and may choose, or on the advice of their supervisors, to attend the Research Skills training sessions during Year 2.

Successful completion of the taught elements of the programme is required in order for PGRs to progress on the programme.

Year Two

- Commence research under the direction of their supervisor(s)

- Candidates may opt to take additional taught subject modules[1] selected from the following list, to a minimum total of 60 credits over Year One and Year Two (additional credits can be taken if judged necessary within the training plan):

  NUFF5065M Key Issues in International Health
  CIVE5050M Management of WASH Projects
  CIVE5055M Engineering for Public Health
  CIVE5311 Wastewater and Feacal Sludge Management
  CIVE5680M Environmental Microbiology
  CIVE5370 Indoor and Urban Air Quality
  CIVE5535 Advanced Wastewater Treatment
  CIVE5990 Project and Asset Management
  CIVE5321M Water Supply
  CIVE5316M Water Resources Management
  CIVE5575M Groundwater Pollution and Contaminated Land
  CIVE5557M Solid Waste Management
  CIVE5985M Circular Economy and Resource Recovery from Waste
  CIVE5596M Engineering in Emergencies
  SOEE5095M Environmental Economics and Policy
  TRAN5750M Transport in Development
  GEOG5060M GIS and Environment
  GEOG5530M River basin management for water quality
  GEOG5710M Digital Image Processing for Environmental Remote Sensing
  GEOG5790M Programming for Geographical Information Analysis; Advanced Skills
  GEOG5830M Environmental Assessment
  SOEE5483M Critical Perspectives in Environment and Development
  SOEE5550M Climate Change; Impacts and Adaptation
  SOEE5970M Terrestrial Biosphere in Earth System
  NUFF5635M Epidemiology and Biostatistics for Health Systems Strengthening

  other options may be included if approved by the Programme Leader. The structured training programme must be discussed and agreed with the CDT management team via the Programme Leader.

- complete compulsory training events; annual team building, challenge week, conference and two professional networking events.

- Month 16 (Full-time candidates)/ Month 24 (Part-time candidates): First Formal Progress Report

- Undergo the transfer assessment process at the end of year 2 (month 24) (Full-time candidates).

[1] Subject to available capacity on the module and agreement of the module manager

Candidates will be required to pass 60 taught credits and successfully transfer to full PhD status in order to progress on the programme.

Year Three

- The PGR will continue research under the direction of their supervisor.
- Month 36 (Full-time candidates): Annual Progress Review
- Month 36 (Part-time candidates): Undergo the transfer assessment process.

Year Four

- The PGR will continue research under the direction of their supervisor.
- Month 48: Annual Progress Review (unless thesis submitted)

Year Five (Part-time candidates)

- The PGR will continue research under the direction of their supervisor.
- Month 60: Annual Progress Review

Year Six (Part-time candidates)

- The PGR will continue research under the direction of their supervisor.
- Month 72: Annual Progress Review (unless thesis submitted)

Year Seven (Part-time candidates)

- Overtime year if required.
- The Final Submission Deadline for the Thesis is the end of Month 84

Exit Award

PGRs who fail to progress but who have acquired the required number of taught module credits may be entitled to exit with the award of a PG Cert (60 credits) [or PG Dip if sufficient credit has been awarded].

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for PhD

1. Learning Outcomes

On completion of the research programme PGRs should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate

- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

In addition the students will be expected to demonstrate competency and knowledge of all of the core engineering specialisations and a deep knowledge and understanding of at least one of these; competency and knowledge of at least 3 technical and research skills areas; and mastery of the range of professional skills as set out in the Table below.

	Technology	Planning	Institutions	Finance
Challenge areas/Core Engineering Specialisations (Year 1 MSc modules and supplemental training in years 2 to 4)	Water treatment processes Wastewater treatment processes Feacal sludge treatment processes and management Solid waste management Sanitation service delivery Water service delivery Behaviour change, marketing and demand creation	Integrated water resources management; River basin management Pollution control City wide sanitation planning Integrated Urban planning Water smart cities	Institutional and policy development Capability enhancement Utility management Equity and empowerment Land tenure, housing and education	Public finance Project finance Contract design and management Public Private Partnerships Tariff design Tax and transfer management
Technical skills (Year 1 MSc modules and supplemental training in years 2 to 4)	Human centred design Architectural design Civil and structural engineering Process engineering Behavioural science Computational fluid dynamics	Decision support science Risk management Project management Asset management Optioneering	Institutional analysis Policy analysis Service delivery assessment	Cost benefit analysis Carbon accounting Engineering economics

<table>
<tr><td rowspan="2">Research skills (Year 1 Research skills module and supplemental training)</td><td>Design
Modelling
GIS and remote sensing
Water quality, microbiology, sampling</td><td>Economics
Social science
Political economics</td></tr>
<tr><td colspan="2">Citizen science and big data
Mixed methods research and dissemination skills
Computational methods</td></tr>
<tr><td>Professional & personal skills (Yrs 1-4 Training)</td><td colspan="2">Problem solving, communication, data driven decision making, collaboration, partnerships, co-production, planning, use of ICT, data collection, data analysis, mentoring, conflict resolution, ethics in research and practice, research commercialisation and securitisation, entrepreneurship, marketing</td></tr>
</table>

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry
- evaluating their own achievement and that of others
- self-direction and effective decision making in complex and unpredictable situations
- independent learning and the ability to work in a way which ensures continuing professional development

3. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions
- make an original contribution to the field

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis[2] and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice

[2] or alternative form of thesis

- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice
- drawing on a range of perspectives on the area of study
- evaluating and criticising received opinion
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis

Programme of study for Doctor of Philosophy – Water and Waste Infrastructure and Services Engineering for Resilience (Water WISER); Part-time variant 2021/22

School: Civil Engineering

Entry Requirements: 1st class (Hons) degree in relevant subject area e.g. engineering, social sciences, health sciences, economics etc. Where candidates have other relevant qualifications or experience candidates with a II(i) will also be considered.

Candidates will normally be expected to commence the programme at the same time as the full-time cohort.

Year One

- An outline training plan will be developed by the end of Month 1 when the PGR selects the taught elements
- Month 9: submit a draft research plan and supervisory teams appointed
- Month 18: submit final draft PhD proposal for approval by the CDT management team (including the training plan)
- A minimum of four (60 Credits) specialised subject modules must be taken over Year One and Two (with a minimum of 30 Credits taken in Year One) selected from the following list:

  NUFF5065M Key Issues in International Health
  CIVE5050M Management of WASH Projects
  CIVE5055M Engineering for Public Health
  CIVE5311 Wastewater and Faecal Sludge Management
  CIVE5680M Environmental Microbiology
  CIVE5370 Indoor and Urban Air Quality
  CIVE5535 Advanced Wastewater Treatment
  CIVE5990 Project and Asset Management
  CIVE5321M Water Supply
  CIVE5316M Water Resources Management
  CIVE5575M Groundwater Pollution and Contaminated Land
  CIVE5557M Solid Waste Management
  CIVE5985M Circular Economy and Resource Recovery from Waste
  CIVE5596M Engineering in Emergencies
  SOEE5095M Environmental Economics and Policy
  TRAN5750M Transport in Development
  GEOG5060M GIS and Environment
  GEOG5530M River basin management for water quality
  GEOG5710M Digital Image Processing for Environmental Remote Sensing
  GEOG5790M Programming for Geographical Information Analysis; Advanced Skills
  GEOG5830M Environmental Assessment
  SOEE5483M Critical Perspectives in Environment and Development
  SOEE5550M Climate Change; Impacts and Adaptation
  SOEE5970M Terrestrial Biosphere in Earth System
  NUFF5635M Epidemiology and Biostatistics for Health Systems Strengthening

  other options may be included if approved by the Programme Leader. The structured training programme must be discussed and agreed with the CDT management team via the Programme Leader.

- a compulsory non-credit-bearing research skills training course called Water WISER Research Skills

- compulsory training events; annual team building, challenge week conference and two professional networking events

- Part time candidate will be required to attend all the cohort activities during Year 1 (around 15 days), along with the full time cohort.

- In subsequent years part time candidates will attend all the team building events (a total of around 10 days) and may choose, or on the advice of their supervisors, to attend the Research Skills training sessions during Year 2.

Successful completion of the taught elements of the programme is required in order for PGRs to progress on the programme.

Year Two

- Commence research under the direction of their supervisor(s)

- Candidates may opt to take additional taught subject modules[1] selected from the following list, to a minimum total of 60 credits over Year One and Year Two (additional credits can be taken if judged necessary within the training plan):

  NUFF5065M Key Issues in International Health
  CIVE5050M Management of WASH Projects
  CIVE5055M Engineering for Public Health
  CIVE5311 Wastewater and Faecal Sludge Management
  CIVE5680M Environmental Microbiology
  CIVE5370 Indoor and Urban Air Quality
  CIVE5535 Advanced Wastewater Treatment
  CIVE5990 Project and Asset Management
  CIVE5321M Water Supply
  CIVE5316M Water Resources Management
  CIVE5575M Groundwater Pollution and Contaminated Land
  CIVE5557M Solid Waste Management
  CIVE5985M Circular Economy and Resource Recovery from Waste
  CIVE5596M Engineering in Emergencies
  SOEE5095M Environmental Economics and Policy
  TRAN5750M Transport in Development
  GEOG5060M GIS and Environment
  GEOG5530M River basin management for water quality
  GEOG5710M Digital Image Processing for Environmental Remote Sensing
  GEOG5790M Programming for Geographical Information Analysis; Advanced Skills
  GEOG5830M Environmental Assessment
  SOEE5483M Critical Perspectives in Environment and Development
  SOEE5550M Climate Change; Impacts and Adaptation
  SOEE5970M Terrestrial Biosphere in Earth System
  NUFF5635M Epidemiology and Biostatistics for Health Systems Strengthening

  other options may be included if approved by the Programme Leader. The structured training programme must be discussed and agreed with the CDT management team via the Programme Leader.

- complete compulsory training events; annual team building, challenge week, conference and two professional networking events (see above).

- Month 24: First Formal Progress Report

  Candidates will be required to pass 60 taught credits and successfully transfer to full PhD status in order to progress on the programme.

Year Three

[1] Subject to available capacity on the module and agreement of the module manager

- The PGR will continue research under the direction of their supervisor.
- Month 36: Undergo the transfer assessment process.

Year Four

- The PGR will continue research under the direction of their supervisor.
- Month 48: Annual Progress Review (unless thesis submitted)

Year Five

- The PGR will continue research under the direction of their supervisor.
- Month 60: Annual Progress Review

Year Six

- The PGR will continue research under the direction of their supervisor.
- Month 72: Annual Progress Review (unless thesis submitted)

Year Seven

- Overtime year if required.
- The Final Submission Deadline for the Thesis is the end of Month 84

Exit Award

PGRs who fail to progress but who have acquired the required number of taught module credits may be entitled to exit with the award of a PG Cert (60 credits) [or PG Dip if sufficient credit has been awarded].

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for PhD

1. Learning Outcomes

On completion of the research programme PGRs should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the

ethical and legal context of their research and any ethical and legal implications of their research.

In addition the students will be expected to demonstrate competency and knowledge of all of the core engineering specialisations and a deep knowledge and understanding of at least one of these; competency and knowledge of at least 3 technical and research skills areas; and mastery of the range of professional skills as set out in the Table below.

	Technology	Planning	Institutions	Finance
Challenge areas/Core Engineering Specialisations (Year 1 MSc modules and supplemental training in years 2 to 4)	Water treatment processes Wastewater treatment processes Feacal sludge treatment processes and management Solid waste management Sanitation service delivery Water service delivery Behaviour change, marketing and demand creation	Integrated water resources management; River basin management Pollution control City wide sanitation planning Integrated Urban planning Water smart cities	Institutional and policy development Capability enhancement Utility management Equity and empowerment Land tenure, housing and education	Public finance Project finance Contract design and management Public Private Partnerships Tariff design Tax and transfer management
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2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry
- evaluating their own achievement and that of others
- self-direction and effective decision making in complex and unpredictable situations
- independent learning and the ability to work in a way which ensures continuing professional development

3. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions
- make an original contribution to the field

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis[2] and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice

[2] or alternative form of thesis

- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice
- drawing on a range of perspectives on the area of study
- evaluating and criticising received opinion
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis

Programme of Study for the degree of Doctor of Education 2021/22

Entry Requirements:

1. Candidates may be accepted for study towards the degree of Doctor of Education in the School of Education. A Management Committee is responsible for the arrangements for research degree study in this school.
2. The following may be accepted as candidates for the degree of Doctor of Education:
   (i) graduates of an approved university or equivalent institution who have been awarded at an appropriate standard, a masters degree in a subject area relevant to the proposed research
   (ii) graduates of an approved university or equivalent institution with an upper second class honours degree or above in a subject area relevant to the proposed research
   (iii) persons holding such other qualifications as may be deemed by the relevant committee, to be acceptable as equivalent to or in lieu of a degree.
3. A candidate applying for acceptance for the degree under the provisions of (iii) may be required to present evidence of a satisfactory general education or, in the absence of such evidence, may be required to pass an examination to be prescribed in each case by the relevant committee before his/her acceptance.
4. PGRs who have achieved master's level accreditation for study within an approved university or equivalent institution may apply for accreditation of up to a maximum of 90 credits in taught components of their EdD programme.[1] All applications for such accredited prior learning are considered on their merits and awards of credit transfer are made at the discretion of the Management Committee, in accordance with published guidelines for the degree, and subject to approval by the relevant University committee. The following will apply:
   (a) applications should be made at the time of EdD application and, in all cases, applications must be processed by the end of the first semester
   (b) for credit to be eligible for transfer it must have been awarded within five years prior to the commencement of EdD registration;
   (c) accredited prior learning may be granted only against the taught modules within the EdD programme and may be granted only in so far as the prior learning relates to the applicant's proposed EdD programme;
   (d) accredited prior learning is not allowable, in any circumstances, against the EdD thesis or the thesis preparation components;
   (e) other arrangements deemed acceptable by the relevant University committee, in lieu of (a) – (d) above.
5. On entry to the degree candidates will declare a specialist field of study, this is a general area in which they will concentrate their studies, and from which they will develop the topic of their thesis. On entry every candidate will be appointed an individual academic supervisor charged with discussing and advising on the coherence of modular choices in relation to the intended thesis area (specialist field of study). Examples of specialist fields of study include:

   Educational administration and management

   Educational psychology
   Mathematical education
   Policy studies
   Post-compulsory and continuing education
   Lifelong learning

[1] PGRs on MA, MEd or MSc programmes in the School of Education, University of Leeds, who wish to cease their MA, MEd or MSc programmes and begin the EdD programme may apply for accreditation of up to a maximum of 120 credits in taught component.

DOCTOR OF EDUCATION

Primary education
Science education
Special education
TESOL
Teacher education and mentoring
ICT in Education
Vocational education
Education and Training 14-19
Adult and continuing education
Higher and further education

Additional fields of study will be approved from time to time.

Content of Programme of Study

Taught Modules

Candidates are required to study modules totalling 150 credits[2] (this will normally be 5 x 30 credit modules). The composition of the taught modular courses will be as follows:

EDUC 5060M Getting Started: Research Questions and Approaches in Education (15 credits);
EDUC5061M Philosophical underpinning of educational research (15 credits);
EDUC5062M Qualitative data: processes of collection, interpretation and analysis (15 credits);
EDUC5063M Introduction to quantitative data analysis (15 credits).

2 x 30 credits thesis-related specialist content modules
1 x 30 credits research method or thesis-related specialist content module

Up to three (90 credits) of the total five modules (150 credits) may be directed studies. The modules available are listed in the University's Taught Postgraduate Catalogue.

6. Part-time candidates upon successful completion of taught modules totalling 120 credits may submit a formal application to the Graduate Board for a 6 month break from their studies for the purpose of maintaining their professional career. The career break will normally be taken immediately after submission of work totalling 150 credits and never before.

Thesis preparation component and upgrade process

7. Candidates will in the first instance be accepted to the degree of Provisional EdD. Candidates are required to undertake a supervised study designed to yield the documentation necessary for consideration in the upgrade to full EdD registration process. It will include presentation of relevant literature, indication of research questions, indication of methodology and its rationale (design, including indication of proposed analysis) and a timeline.
8. The study requirements[3] for all of the taught modules must be completed before the upgrade process can take place. The upgrade point is the point at which the PGR's progress through the programme components is assessed. For a part-time candidate this will normally be by no later than 36 months of study and for a full-time candidate this will normally be by no later than 24 months of study.
9. An assessment panel will be established, in accordance with the University's Code of Practice for Research Degree Candidatures, to assess each candidate for transfer to full EdD registration. The PGR must be interviewed by the assessment panel and this assessment should take the form of a viva voce examination. The panel will assess, as part of the upgrade process, the thesis preparation component and an overall

[2] In the absence of Accredited Prior Learning (APL)

[3] Study requirements" refers to attendance at classes, tutorials, etc. rather than to assignment completion or grading, since waiting for the latter could seriously delay the upgrading point.

assessment of either satisfactory or unsatisfactory will be made.

10. A candidate who is initially unsuccessful in the upgrade process may be given, at the discretion of the transfer panel, one further opportunity for review normally within a period of three months (six months at the maximum). Notes for Guidance on the preparation of a further submission will be given to the candidate by the transfer panel.

11. The thesis preparation component will not be graded on a mark scale and will thus not contribute to the profile of assessed module grades. However, a candidate must successfully complete the transfer review process before being permitted to continue with their studies. Following a successful transfer review a recommendation will be sent forward for consideration by the relevant University committee that a candidate be transferred to full EdD status, together with the name(s) of the supervisor(s) and proposed thesis title. The work contained within the thesis preparation component may subsequently be revised to form part of the thesis.

Examination and Assessment

Research Project

12. Candidates are required to submit a thesis for examination of up to 55,000 words in length in the area of their specialist field of study and satisfy the examiners as specified in Ordinance X and its associated Regulations.

13. Except with the special permission of the relevant committee, every candidate is required to submit his/her thesis for examination for the degree of Doctor of Education by no later than:

    (i) the end of the fourth year after his/her entry upon the approved course of full-time study and research; or

    (ii) the end of the seventh year after his/her entry upon the approved course of part-time study and research.

14. Where the progress and quality of the candidate's research justify it, the relevant committee is empowered to reduce the required minimum period of study, as specified in Article 5 of Ordinance X provided that no candidate shall submit for examination before the completion of:

    (i) a total of two calendar years of full-time study; or

    (ii) a total of three calendar years of part-time study.

15. Following examination, the examiners will be asked to make one of the following recommendations.

    (a) Pass.

    (b) Pass (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): these corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that minor errors or minor deficiencies are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received.

    (c) Referral (see 17 below).

    (d) Fail: the candidate has no further opportunity for submission.

16. If the thesis is not considered to be of sufficiently high standard to recommend the award of the degree but there is evidence of the potential of a successful EdD submission, then on the recommendation of the examiners the candidate will be granted permission to resubmit the work in a revised form for the degree of EdD within a period of eighteen months, on one occasion only and on payment of an additional fee.

17. The recommendation of the examiners is subject to confirmation by the Graduate Board's Examinations Group which will consider the examiners' report.

18. Learning Outcomes for the degree of Doctor of Education are published in a later section.

Course Failure

19. Candidates will normally be deemed to have failed the course and be asked to withdraw from the programme if:

    (i) they fail to meet the requirements for modular study namely: marks at or above 60% in 60% of their credits and no mark below 50% in the remaining 40% of their credits;
    (ii) they fail to satisfy the transfer assessment panel;
    (iii) they fail to satisfy the examiners in the research thesis.

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for the degree of EdD

1. Learning Outcomes

Learning Outcomes for taught components**;** PGRs will be able to

- demonstrate in-depth, specialist knowledge and mastery of techniques relevant to the discipline and/or to demonstrate a sophisticated understanding of concepts, information and techniques at the forefront of the discipline;
- exhibit mastery in the exercise of generic and subject-specific intellectual abilities;
- demonstrate a comprehensive understanding of techniques applicable to their own research or advanced scholarship;
- take a proactive and self-reflective role in the working and develop professional relationships with others;
- proactively formulate ideas and hypotheses and develop, implement and execute plans by which to develop these;
- critically and creatively evaluate current issues, research and advanced scholarship in the discipline.

Learning Outcomes for research components**;** PGRs will be able to

- discover, interpret and communicate new knowledge through original research of publishable quality which would satisfy peer review and/or contribute to scholarship within a professional context;
- independently and proactively formulate ideas and design, develop, implement and execute plans by which to evaluate these;
- demonstrate systematic and extensive knowledge of the subject and expertise in generic and subject/professional skills;
- critically and creatively evaluate current issues, research and advanced scholarship in the relevant field of education;
- demonstrate a comprehensive understanding of techniques applicable to own research and engage with the relevant ethical or legal issues in the specialist educational field;
- present and defend research outcomes which extend the forefront of the discipline and/or relevant area of professional practice;
- take a proactive and self reflective role in working and develop professional relationships with others where appropriate;

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional practice or industry;
- evaluating their own achievement and that of others;
- self-direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional

development;

3. Learning Context

The learning context will include the critical analysis of, and decision making in, complex and unpredictable professional situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRsto:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions;
- make an original contribution to the field

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis and performance under oral examination. During the course of the programme there will also be assessment of achievement by a variety of methods in accordance with the learning outcomes of any taught modules specified for the programme. Final assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional practice normally leading to published work;
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice;
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional practice;
- drawing on a range of perspectives on the area of study;
- evaluating and criticising received opinion;
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis.

Programme of Study for the degree of Doctor of Clinical Education 2021/22

School: School of Medicine - Institute of Medical Education

Entry Requirements: The programme is on a part-time basis only. The programme will normally commence in September.

- graduates of a masters degree in a subject area relevant to the proposed research
- graduates with an upper second class honours degree or above in a subject area relevant to the proposed research
- Where the applicant's first language is not English, an International English Language Testing System (IELTS) overall score of 6.5 with no less than 6.0 in each component skill.

This programme is normally only open to professionals working in health care, such as medicine, pharmacy, nursing and midwifery, and the full range of allied health professions (with an entry on the appropriate register) or healthcare-related areas in practice or education, who have a minimum experience of two years full-time (or equivalent part-time) in practice and involvement in education and training as part of their current role.

Recognition of Advanced Standing (RAS)
Candidates who have achieved master's level accreditation for study within an approved university or equivalent institution may apply for accreditation (Recognition of Advanced Standing (RAS)) of up to a maximum of 90 credits in taught components of the programme.
All applications for such accredited prior learning are considered on their merits and awards of credit transfer are made at the discretion of the School. The following will apply:

- applications should be made at the time of application
- applications must be processed by the end of the first semester
- for credit to be eligible for transfer it must have been awarded within five years prior to the start of study
- accredited prior learning may be granted only against the taught modules within the programme and may be granted only if the prior learning relates to programme
- accredited prior learning is not allowable, in any circumstances, against the thesis or the thesis preparation components

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Content of Programme of Study

The programme is on a part-time basis only. The standard period of study is 5 years.

On entry to the degree candidates will declare a specialist field of study, in which they will concentrate their studies, and from which they will develop the topic of their thesis. All candidates are appointed a supervision team charged with discussing and advising on the coherence of modular choices in relation to the intended thesis area (specialist field of study).

Taught Modules

Candidates are required to study modules totalling 150 credits[1] :

Year 1 (60 credits)
Compulsory modules
MEDS5106M Learning and Teaching in the Clinical Context (30 credits)
MEDS5107M Assessment and Evaluation in the Clinical Context (30 credits)

Year 2 (60 credits)
Compulsory modules
MEDS5108M Innovation and Change in Clinical Education (30 credits)
MEDS5109M Researching Clinical Education (30 credits)

[1] In the absence of Accredited Prior Learning (APL)

Year 3 (30 credits)
Optional modules
Directed Study (30 credits)
Research Practice (30 credits)

Progress and monitoring

Transfer

Candidates will in the first instance be accepted provisionally to the degree of Doctor of Clinical Education. After the initial period of provisional registration, candidates are subject to the process whereby they are formally assessed and, if successful in the assessment, are transferred to the specific degree category of Doctor of Clinical Education.

Candidates are required to undertake supervised study designed to yield the documentation necessary for consideration as part of the transfer process. It will include presentation of relevant literature, indication of research questions, indication of methodology and its rationale (design, including indication of proposed analysis) and a timeline for completion. The candidate is then interviewed by a transfer assessment panel in the form of a viva voce examination.

Transfer must take place no later than 36 months of study and is dependent upon the candidate having passed all taught modules that have been delivered and examined up to the point of transfer. Candidates must successfully complete the transfer review process in order to continue with their studies. The decision to transfer will be based on the submission of appropriate material for assessment and all Postgraduate Researchers (PGRs) must undergo an oral examination by an assessment panel which must include at least two independent individuals who have not been involved in the supervisory support of the candidate. The PGR will be interviewed by the assessment panel in the form of a viva voce examination.

Candidates prepare a collection of documents for transfer:

(i) A report of progress to date (maximum 1,500 words), which should include:

- A synopsis of work carried out, including modules studied and research preparation and investigation conducted
- A review of learning from the modular study
- A critical appraisal of the ways in which the modules studied have contributed to the developing research proposal
- A copy of all module feedback sheets and a list of module marks should be attached.

(ii) A research proposal (6000 words maximum, excluding draft ethics submission), to include:

- Introduction. The rationale for the research and the context of the data collection.
- Literature review
- Methodology including theoretical framework, research questions and methodology (rationale and data collection and analysis procedures).
- Draft ethics submission
- Expected results (short)
- Timeline

Examination and Assessment

Candidates are required to submit a thesis for examination of up to 55,000 words in length in the area of their specialist field of study and satisfy the examiners as specified in Ordinance X and its associated Regulations.

Candidates must to submit their thesis for examination for the degree of Doctor of Clinical Education by no later than 84 months (7 years) of study.

Where the progress and quality of the candidate's research justify it (including those with RAS) a candidate may apply for a reduction of study in order to submit at an earlier stage (no earlier than the end of 36 months of part-

time study).

Following examination, the examiners will be asked to make one of the following recommendations

a) Pass
b) Pass (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): these corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or minor deficiencies are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received.
c) Referral
d) Fail: the candidate has no further opportunity for submission.

If the thesis is not considered to be of sufficiently high standard to recommend the award of the degree but there is evidence of the potential of a successful submission, then on the recommendation of the examiners the candidate will be granted permission to resubmit the work in a revised form for the degree of Doctor of Clinical Education within a period of eighteen months, on one occasion only and on payment of an additional fee.

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for the degree of Doctor of Clinical Education

Learning Outcomes

- Discover, interpret and communicate new knowledge through original research of publishable quality which would satisfy peer review and/or contribute to scholarship within a professional context;
- Independently and proactively formulate ideas and design, develop, implement and execute plans by which to evaluate these;
- Demonstrate a comprehensive understanding of techniques applicable to own research and engage with the relevant ethical or legal issues in the specialist educational field;
- Present and defend research outcomes which extend the forefront of the discipline and/or relevant area of professional practice;
- Take a proactive and self-reflective role in working and develop professional relationships with others where appropriate;
- Demonstrate systematic and extensive knowledge of the subject and expertise in generic and subject / professional skills;
- Critically and creatively evaluate current issues, research and advanced scholarship in the relevant field of education;

Transferable (Key) Skills

Candidates for the Doctor of Education (Clinical Education) will have had the opportunity to acquire the following abilities as defined in the modules specified for the programme:

- the skills necessary to undertake a higher research degree and/or for employment in a higher capacity in industry or area of professional practice;
- evaluating their own achievement and that of others;
- self-direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;
- critically to engage in the development of professional/disciplinary boundaries and norms.

Assessment

Achievement for the Doctor of Education (Clinical Education) will be assessed by a variety of methods in accordance with the learning outcomes of the programme and will involve the achievement of candidates in

- Evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline of clinical and health professions education and /or professional learning or within different aspects of the area of professional practice normally leading to published work;
- Drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries

into clinical and health professions education and practice;

- Demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within clinical and health professions education and practice;
- Drawing on a range of perspectives on the area of study;
- Evaluating and criticising received opinion;
- Making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- The written style and overall presentation of the thesis

Doctor of Medicine 2021/22

Programme of study for the degree of Doctor of Medicine

Entry Requirements:

1. Subject to requirements and the approval of the admission panel for the degree of Doctor of Medicine, the following may be accepted as candidates for the degree of Doctor of Medicine within one of the Medical Institutes in the Faculty of Medicine and Health.
   (a) Bachelors of Medicine and Surgery of the University of not less than two years standing prior to acceptance as candidates for the degree;
   (b) Graduates of other UK or EU universities holding an appointment or an honorary appointment within a medical or dental institute of the University, or a National Health Service clinical appointment at the level of Registrar or above, who have held a qualification registrable with the UK General Medical Council for at least two years prior to acceptance as candidates for the degree;
   (c) Overseas applicants, who have had not less than a two year period of clinical training subsequent to the award of a medical degree, and qualifications that confer eligibility for full or provisional registration with the UK General Medical Council, may be considered for admission as candidates for the degree of Doctor of Medicine.
2. Candidates for the degree of MD should normally undertake their postgraduate study in a Medical Institute of the University of Leeds or its associated hospitals, whilst holding a full-time, part-time or honorary University appointment. Obtaining any full or provisional registration with the General Medical Council required for the work will be the responsibility of the candidate, who may be offered a place on the degree programme subject to the submission of the standard University application form for postgraduate study, together with the following supporting documentation:
   (a) The title of the proposed thesis;
   (b) A short outline description (maximum 2 pages of A4) of the research project to be undertaken, indicating the research question or hypothesis to be addressed, the scope of the work and the methods to be used, and agreed with a qualifying supervisor with a University or honorary University contract;
   (c) Details of where the research will be undertaken and how it will be funded;
   (d) How the research time required for the proposed work will be compatible with clinical work commitments (if applicable);
   (e) A full and up-to-date curriculum vitae;
   (f) Evidence of proficiency in English Language to the required level specified for this degree programme.
3. Candidates may also be eligible for acceptance if they have satisfactorily completed a period of at least one year of approved research as a research student of the University. Such applications will be given individual consideration.

Supervision

4. At least two supervisors will be appointed for each PGR at the commencement of the candidature.
5. The arrangements for formal reports on progress by the supervisors are described in the University Code of Practice for Research Degree Candidatures which is published in the PGR Handbook.

DOCTOR OF MEDICINE

Programme Progress and Monitoring

6. Candidates will be accepted initially as provisional MD candidates. By the end of the first year of study, full-time candidates are required to prepare a report and undergo a transfer viva to assess their progress before proceeding to Year 2 and transfer to the specific degree category of MD. In the case of part-time candidates the transfer assessment process will normally take place within the first eighteen months of study. The decision to transfer will be based on the submission of appropriate material for assessment and all Postgraduate Researchers (PGRs) must undergo an oral examination by an assessment panel which must include at least two independent individuals who have not been involved in the supervisory support of the candidate. The PGR will be interviewed by the assessment panel in the form of a viva voce examination.
7. The following options are open to the Assessment Panel:
   (i) to recommend transfer to MD registration;
   (ii) to require that the report is revised for reassessment within a period of time of between 3 and 6 months;
   (iii) to require that the candidature is terminated.
8. In exceptional circumstances, candidates for the degree of MD may be considered for transfer to candidature for the degree of PhD, subject to approval by the relevant committee.

Examination and Assessment

9. Candidates are required to submit at least two copies of a thesis (80,000 words maximum), which shall be specially written for the purpose, must be written in English and must contain a critical account of original studies carried out personally by the candidate, and satisfy the Examiners as set out in Ordinance X and its associated Regulations.
10. Except with the special permission of the relevant committee, every candidate is required to submit their thesis for examination for the degree of Doctor of Medicine by no later than:
    (i) the end of the fifth year after entry upon the approved course of part-time study and research; or
    (ii) the end of the third year after entry upon the approved course of full-time study and research.
11. Where the progress and quality of the candidate's research justify it, the relevant committee is empowered to reduce the normal minimum period of study, as specified in Article 5 of Ordinance X, provided that no candidate shall submit for examination before the completion of:
    (i) a total of one calendar year of full-time study;
    (ii) a total of two calendar years of part-time study.
12. Following examination, the examiners will be asked to make one of the following recommendations:
    (a) Pass
    (b) Pass (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): these corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or minor deficiencies are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received.
    (c) Referral
    (d) Fail: The candidate has no further opportunity for submission.
13. If the thesis is not considered to be of sufficiently high standard to recommend that the degree be awarded but there is evidence of the potential of a successful MD submission, then on the recommendation of the examiners the candidate will be granted permission to re-submit the work in a revised form within a period of eighteen months on one occasion only and on the payment of an additional fee.

14. The recommendation of the examiners is subject to confirmation by the Graduate Board's Examinations Group which will consider the examiners' report.

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for the degree of MD

1. Learning Outcomes

On completion of the research programme PGRs should have shown evidence of being able:

- to demonstrate extensive knowledge of the subject area and expertise in generic, subject specific and professional skills;
- to evaluate critically current issues in research and advanced scholarship in the discipline of medicine;
- to formulate ideas and hypotheses independently, and to design, develop, implement and execute plans by which to evaluate these;
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate;
- to demonstrate diligence in professional working practice through a thorough understanding of the ethical, legal, health and safety issues pertaining to the research, including adherence to data protection.
- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable or potentially publishable quality, which satisfies peer review;
- to present and defend research outcomes that extend the forefront of a discipline of medicine by oral and written methods;
- to evaluate critically the implications of their research outcomes in the relevant area of professional/clinical practice;

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice;
- evaluating their own achievement and that of others;
- self-direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;

3. Learning Context

The learning context will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions;
- make an original contribution to the field

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work;
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice;
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice;
- drawing on a range of perspectives on the area of study;
- evaluating and criticising received opinion;
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis.

DOCTOR OF CLINICAL PSYCHOLOGY

Programme of study for the degree of Doctor of Clinical Psychology 2021/22

The programme commences in October

Entry Requirements:

1. The following may be accepted as a candidate for the degree of Doctor of Clinical Psychology:

   Graduates of an approved university or holders of a recognised degree awarded as a result of study at an approved institution other than a university, or holders of any other qualification approved for this purpose by the Senate, provided that the programme of study in the subject for which the qualification has been awarded has extended over not less than three years full-time study or equivalent part-time study and is acceptable to the Senate as being an adequate preparation for the research proposed, and which is recognised by the British Psychological Society as meeting the necessary qualifications for the Graduate Basis for Chartered Membership of the British Psychological Society.

2. The programme commences in October and is designed for approved graduates with a good honours degree in Psychology, either as a single subject or as a principal subject in a combined studies programme. Candidates are also required to hold for the duration of the programme a contract with the Leeds Teaching Hospitals NHS Trust. The scheme is offered by the School of Medicine, Institute of Health Sciences, Division of Psychological and Social Medicine. Initial enquiries concerning applications for admission should be made to the National Clearing House for Clinical Psychology Courses, University of Leeds.

Programme:

3. Candidates will in the first instance be accepted as a Provisional candidate for the degree of DClinPsychol.

4. Candidates pursuing the programme of study are required to observe relevant procedures in relation to ethical issues.

5. Candidates accepted will proceed by attending a programme of advanced study which will include:

   (a) Formal instruction in the following subjects: approximately 700 hours teaching
   - Foundations of Practice I
   - Foundations of Practice II
   - Foundations of Practice III
   - Introduction to Personal Development
   - Continuing Personal Development
   - Consolidating Personal Development
   - Professional Issues I
   - Professional Issues II
   - Professional Issues III
   - Introduction to research methods
   - Advanced research methods: design and analysis
   - Thesis: writing up and viva preparation

   (b) Five clinical placements; supervised and assessed experience of the application of psychological techniques of investigation and treatment.

   (c) Three pieces of research: a systematic case study; a service evaluation project; and a psychological investigation of clinical relevance presented in the form of a thesis.

Examinations and Assessments

6. Year *1*

During the first year of the programme progress will be assessed by:

One essay of no more than 5,000 words each. The subject of the essay will be:

The evidence base for clinical practice (to be submitted by the end of semester 2)

A presentation and a written report of a problem based learning exercise which assesses professional issues (To be submitted by the end of July in the first year of the programme).

A presentation and a written report of a problem based learning exercise (To be submitted by the end of July in the first year of the programme).

Two periods of supervised clinical practice.

A systematic case study (5,000 words maximum) (to be submitted by the end of October in the second year of the Programme, the work having been completed by end of the second clinical placement).

During the first year of the programme candidates are required to submit a research proposal for their research thesis in September which is reviewed by a research panel by the end of September, and formative feedback given.

7. *Year 2*

In the second year progress will be assessed by:

Two periods of supervised clinical practice.

A case presentation to staff and students relating to clinical work undertaken on placement by the trainee.

A report of a Service Evaluation Project (5,000 words maximum) (to be submitted by the end of November in the third year of the programme with the work having been completed by the end of the second period of supervised clinical practice in Year 2).

During the second year of the programme candidates are required to submit a report on their progress in their research thesis (thesis transfer document). The thesis transfer documentation is to be submitted by early March and will comprise:

a) A literature review (5000 words maximum) pertinent to the chosen topic of study that critically defines the topic area and the rationale for the study
b) A critical review of the methodology to be used in the research (3000 words maximum) to include a justification for selecting the method and specification of the proposed data analysis
c) A progress report (2000 words maximum) to include a commentary on progress with respect to the application to ethics committees, recruitment to the study, a timetable for the project, and an audit of the PGR's skills and needs.

This will normally be assessed by the end of April by means of an oral examination (transfer viva).

8. *Year 3*

In the third year of the programme PGRs will submit:

One assessed essay (5,000 words maximum) which may be in the form of an advanced case study by the end of the second semester on the subject:

An area of advanced clinical practice in clinical psychology, highlighting theory-practice links

One period of supervised clinical practice.

A thesis on an empirical investigation of a substantive problem in the field of clinical psychology (40,000 words maximum).

Progression and Programme Failure

9. PGRs whose assessed essays, evaluation of the problem based learning exercise, systematic case study and service evaluation project fail to satisfy the examiners at the first attempt may normally be permitted to resubmit the assessment for further examination on one occasion only within 3 months of the date on which they were informed of the failure. PGRs who fail the case presentation in year 2 will be given one further opportunity to present.

10. PGRs are required to satisfy the examiners in five periods of supervised clinical placements. The periods of supervised clinical placements will be assessed by ratings and reports from the clinical supervisor submitted at the end of each period of supervised practice. Reports of clinical competence will be considered by the Board of Examiners.

11. PGRs whose performance on a supervised clinical placement fails to satisfy the examiners at the first attempt are not permitted to repeat the period of supervised clinical placement. PGRs will be required to demonstrate their ability on the competencies required on the subsequent supervised clinical placement.

12. Candidates must present a thesis (40,000 words maximum) on the subject of his/her research and satisfy the examiners as specified in Ordinance X and its associated Regulations. In exceptional circumstances candidates may, with the approval of their supervisor, include Appendices (up to 20,000 words maximum) which will not be counted towards the overall word length of the thesis.

13. Except with the special permission of the relevant committee, every candidate is required to submit his/her thesis for examination for the degree of Doctor of Clinical Psychology by no later than the end of the fourth year after his/her entry upon the approved course of full-time study and research.

14. Following examination of the thesis, the examiners will be asked to make one of the following recommendations:
    (a) Pass.
    (b) Pass (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): these corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or minor deficiencies are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received.
    (c) Referral (see 15 below)
    (d) Fail: the candidate has no further opportunity for submission.

15. If the thesis is not considered to be of sufficiently high standard, then on the recommendation of the examiners if there is evidence of the potential of a successful D.Clin.Psychol submission the candidate will be granted permission to resubmit the work in a revised form for the degree of D.Clin.Psychol within a period of eighteen months, on one occasion only and on payment of an additional fee.

16. Candidates will normally be deemed to have failed the Course and be asked to withdraw from the programme if they:
    (1) fail any two pieces of work from the following:
        Assessed essays (2)
        Evaluation of problem based learning exercise
        Systematic Case Study
        Service Evaluation Project
        Supervised clinical placements
        Year 2 case presentation;

or

    (2) fail the thesis transfer viva;

or

    (3) fail to satisfy the examiners in the Research Thesis viva. There is no opportunity for re-examination where the examiners recommend a research degree thesis is failed;

or

    (4) commit gross professional misconduct or cease to have an appropriate clinical contract with the NHS.

17. The recommendation of the examiners is subject to confirmation by the Graduate Board's Examinations Group which will consider the examiners' report normally at the next meeting.

18. The award of the Doctor of Clinical Psychology confers (i) eligibility for entry as a clinical psychologist into the register of the Health and Care Professions Council, and (ii) eligibility for Chartered Membership of the British Psychological Society.

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for the degree of DClinPsychol

1. Learning Objectives and Outcomes

The thematic learning objectives and elemental learning outcomes

Clinical Practice

The thematic **learning objectives** are to enable the PGR to:

1. Demonstrate professional attitudes and behaviour (including an awareness of power and the socio-political context) as well as a range of personal development strategies.
2. Prepare and engage with the supervisory process as both supervisee and supervisor.
3. Facilitate and maintain therapeutic engagement and working alliances with service users, carers, teams and services; including managing challenging situations.
4. Conduct assessment interviews and select, administer and interpret psychometric and idiosyncratic assessments, including risk assessment.
5. Develop, implement and communicate formulations with service users, carers, teams and services; including appropriate re-formulations.
6. Use theory-practice links to develop and implement interventions within different theoretical models adapted to individual needs.
7. Demonstrate the capacity to evaluate processes and outcomes at the organisational and systemic levels, as well as the individual level.
8. Communicate effectively with audiences who have a wide range of cognitive ability, sensory acuity and modes of communication; including giving clear and accurate written and verbal reports of work undertaken.

9. Plan formal and informal teaching sessions appropriately, facilitate the co-operative engagement of the training group and monitor effectiveness.
10. Demonstrate knowledge of the organisational setting and the need to work collaboratively with other professionals and colleagues, including demonstrating qualities of leadership.

The **learning outcomes** disaggregated from the above are as follows:

Ref. objective 1: PERSONAL AND PROFESSIONAL DEVELOPMENT
The PGR should be able to:

a) Demonstrate professional attitudes and behaviour (reliable, responsible and open to learn; exhibiting an ethical framework for all aspects of the work; ensuring informed consent underpins all contacts)
b) Manage an appropriate case and workload (demonstrates increasing autonomy in taking responsibility for this; is able to prioritise; recognises limits of own competence and requests assistance when in difficulty)
c) Recognise and understand inherent power imbalances and how these may be minimised; understand the impact of one's own value base upon clinical practice
d) Work effectively with difference, diversity and social inequalities in individuals' lives
e) Develop resilience; including a continuous commitment to develop self-knowledge and self-awareness; the capacity to recognize and act accordingly when own fitness to practice is compromised.

Ref. objective 2: SUPERVISION
The PGR should be able to:

a) Prepare and engage in the supervisory process (develop a shared understanding of the roles of both supervisor and supervisee; asking for/provision of relevant literature; giving and receiving of feedback and constructive criticism; ability to engage in collaborative discussion)
b) Demonstrate an increasing ability to discuss both content and process within clinical work
c) Utilise supervision to discuss support issues and needs with a clear awareness of the boundaries between supervision and personal therapy (i.e. that the supervisor cannot and should not act in the role of personal therapist)
d) Develop the skills to provide supervision at an appropriate level within own sphere of competence (including contracting, discussion of boundaries, confidentiality and power, supervision models and feedback methods, power)

Ref. objective 3: THERAPEUTIC ENGAGEMENT AND WORKING ALLIANCES
The PGR should be able to:

a) Facilitate therapeutic engagement and a secure base, demonstrating empathy, curiosity and a respectful attitude with service users, carers, colleagues and services
b) Facilitate mutual understanding using accessible language; demonstrate knowledge and application of anti-oppressive practice
c) Show an awareness of structure, boundary and termination issues and application in practice
d) Exhibit skills in managing challenging situations with service users, carers, teams and services
e) Demonstrate an increasing understanding and ability to increase sphere of influence through engagement with different levels of organisational systems (service users, teams, external agencies)

Ref. objective 4: PSYCHOLOGICAL ASSESSMENT
The PGR should be able to:

a) Conduct assessment interviews (including taking a detailed history); select appropriate further assessment procedures where necessary (including observation, or gathering information from others)
b) Administer and interpret psychometric assessments; understand key elements of psychometric theory and appropriate utilisation of this knowledge (i.e. awareness of limitations / ethical implications) in conjunction with a good working relationship
c) Administer and interpret idiosyncratic assessments (with awareness of social context and organisational structure)

d) Conduct appropriate risk assessment and use this to guide practice

Ref. objective 5: PSYCHOLOGICAL FORMULATION

The PGR should be able to:

a) Develop collaborative psychological formulations informed by theory and evidence about relevant individual, systemic, social, political, cultural and biological factors, in a way that helps service users better understand their experiences
b) Construct formulations adapted to circumstance and context a) within an explicit theoretical model and b) utilising theoretical frameworks with an integrative, multi-model perspective as appropriate; reformulate as required
c) Ensure that formulations are communicated in accessible language, culturally sensitive and non-discriminatory in terms of, for example, age, gender, disability and sexuality
d) Lead on the implementation of formulation in services and utilizing formulation to enhance teamwork, multi-professional communication and psychological-mindedness in services.

Ref. objective 6: PSYCHOLOGICAL INTERVENTIONS

The PGR should be able to:

a) Demonstrate knowledge of the empirical basis of treatments/interventions and practice guidance frameworks such as NICE and SIGN; critically appraise relevant literature, including an understanding of social approaches to intervention (e.g. community, critical, social constructionist perspectives)
b) Make theory - practice links; demonstrate the ability to utilise multi-model interventions, adapting interventions to individual needs
c) Conduct interventions a) related to secondary prevention and the promotion of health and well-being; b) in a way which promotes recovery of personal and social functioning as informed by service user values and goals.
d) Have an awareness of the biopsychosocial model and the impact and relevance of psychopharmacological and other multidisciplinary interventions
e) Intervene systemically with carers and professionals e.g. implementation of care plans
f) Demonstrate an awareness of the limitations of psychological interventions, assess when further intervention may not be appropriate and communicate this sensitively

Ref. objective 7: EVALUATION AND RESEARCH

The PGR should be able to:

a) Utilise and interpret appropriate individual measures to evaluate outcome (e.g. sessional and outcome measures)
b) Utilise, comply and contribute to departmental evaluation and auditing procedures
c) Demonstrate the capacity to evaluate processes and outcomes at the organisational and systemic levels, as well as the individual level
d) Demonstrate an awareness of outcomes frameworks in wider use within national healthcare systems and an understanding of clinical governance principles
e) Conduct research (SCS or SEP) in respectful collaboration with stakeholders and within ethical and governance frameworks (e.g. BPS, HCPC, universities)

Ref. objective 8: COMMUNICATION

The PGR should be able to:

a) Give clear and concise verbal and written reports of work undertaken in a timely manner
b) Develop their own individual style of communication and confidence in this
c) Adapt their style of communication to people with a wide range of levels of cognitive ability, sensory acuity and modes of communication
d) Understand the process of communicating effectively through interpreters and having an awareness of the limitations

e) Understand the process of providing expert psychological opinion and advice, including the preparation and presentation of evidence in formal settings.

Ref. objective 9: TEACHING AND TRAINING

The PGR should be able to:

a) Prepare and deliver teaching and training flexibly, in a way which takes into account the needs and goals of the audience (e.g. appropriate use of language, use of interactive methods, provision of handouts and facilitative training materials)
b) Monitor and evaluate effectiveness though self-appraisal and structured feedback mechanisms

Ref. objective 10: 0RGANISATIONAL AND SYSTEMIC INFLUENCE AND LEADERSHIP

The PGR should be able to:

a) Demonstrate an awareness of the legislative and national planning contexts for service delivery and clinical practice and an understanding of the organisation in which the placement is based
b) Work with service users and carers to facilitate their involvement in service planning and delivery
c) Indirectly influence service delivery through working effectively and collaboratively in multidisciplinary and cross-professional teams and consultancy
d) Demonstrate leadership qualities e.g. being aware of and working with interpersonal processes, proactivity, influencing the psychological mindedness of teams and organisations, contributing to and fostering collaborative working practices within teams
e) Recognise malpractice or unethical practice in systems and organisations and know how to respond to this; be familiar with 'whistleblowing' policies and issues.

Personal and Professional Development

The thematic **learning objectives** for this theme are grouped. They are to enable the PGR to:

Power and socio-political context issues

1. Understand the importance and relevance of issues to do with power and social inequalities, on both a personal and professional level
2. Work effectively with difference and diversity

Personal development

3. Show an active continuous commitment to develop self-knowledge and self-awareness

Professional attitudes and behaviour

4. Show a consistently open attitude towards all aspects of learning and development
5. fulfil the employer's expectations regarding professional behaviour, including active engagement in all supervisory arrangements
6. demonstrate an ethical framework for all aspects of work, including a working knowledge of relevant practice guidelines, policies and legislation
7. work collaboratively and constructively with other professionals, colleagues and users of services
8. behave respectfully to others at all times
9. prepare for professional employment, having clear aims and objectives for continued professional development

Professional autonomy and professional limits

10. manage a workload, including multi-tasking, and show a clear recognition of the limits of individual competence.

The **learning outcomes** disaggregated from the above are as follows:

Ref. objective group 1: Power and socio-political context issues

The PGR should be able to:

a) recognise and understand the effects of power imbalances, and how they can minimised
b) critique a range of theoretical models and related practices for the ways in which power imbalances and social inequalities are maintained and reproduced
c) understand the roots of oppression and its role in the aetiology of psychological disturbance, and the consequential need to develop anti-oppressive
d) recognise and work with difference and diversity, and commit to developing cultural (in the broadest sense, including e.g. issues to do with class, gender, dis/ability, ethnicity, sexuality) competency in all aspects of professional life
e) apply knowledge and understanding in all these areas in an increasingly sophisticated manner, and in increasingly complex situations

Ref. objective group 2: Personal development

The PGR should be able to:

a) experiment with a variety of personal development strategies, and explore new ways of interacting with others
b) engage with the personal and professional development curriculum and goals, maintaining an open attitude
c) build and develop strategies to manage the emotional and physical impact of the work, and seek out help and support when required
d) invite critical comment and respond in a constructive manner
e) monitor their own fitness to practice, recognise when this is compromised and take steps to manage this risk as appropriate

Ref. objective group 3: Professional attitudes and behaviour

The PGR should be able to:

a) demonstrate a continuing openness and keenness to learn, to seek knowledge and develop new skills
b) demonstrate active participation in all supervisory relationships and arrangements, including negotiation, preparation, utilisation and recording of sessions
c) manage own learning needs and develop strategies for meeting them
d) demonstrate reliability, conscientiousness, and an ability to meet deadlines
e) apply expertise in judging the consequences, for self and others, of maintaining / relaxing boundaries in all professional relationships
f) approach conflict situations with thoughtfulness, and from a constructive stance
g) consistently consider ethical issues and apply these considerations in complex clinical contexts (e.g. the process of informed consent)
h) understand and put into practice the boundaries and limitations of confidentiality
i) demonstrate knowledge of professional practice guidelines
j) understand the importance and have knowledge of relevant local and national policies, procedures, guidelines and legislation, and their relevance to professional practice
k) work collaboratively and constructively with other psychologists, other professionals, and users of services, respecting diverse viewpoints
l) show a respectful and valuing attitude to all others
m) demonstrate knowledge and understanding of employment practices and related issues in host organisation (e.g. time keeping, record keeping, meeting deadlines, managing leave, health and safety and good working relationships)
n) demonstrate appropriate preparation for job interviews
o) demonstrate a purposeful plan for continued professional development, including the transition from trainee to qualified clinical psychologist

Ref. objective group 4: Professional autonomy and professional limits

The PGR should be able to:

a) negotiate for and manage an appropriate case and workload at different stages of training, and prioritise the caseload effectively
b) recognise the extent and limitations of personal and professional competence and seek out timely and appropriate consultation and assistance when required
c) develop the ability to multi-task
d) understand the transferable skills developed during training and how these can be of values to employers, colleagues and service users.

Research

The thematic **learning objectives** are to enable the PGR to:

1. identify and devise an original research question set in the context of existing research and theoretical models, and current priorities and opportunities
2. identify, access, collect, record, manage, analyse and synthesise information, using an appropriate research method and solving problems that arise during the process
3. be aware of the strengths and limitations of different research designs, and be able to critically appraise their own findings and those of others
4. present and defend ideas and outcomes, using appropriate media
5. demonstrate an understanding of the ways in which research may be communicated to enhance the impact on practice and support the learning and teaching of others
6. understand and comply with relevant legal, ethical, health and safety issues
7. comprehend the distinctions between methods appropriate to theoretical and service research, and the political, social and cultural context within which these fall
8. demonstrate the skills needed to interact / collaborate with participants, colleagues and organisations during the research process
9. appreciate the utility of research in developing clinical practice, and the factors that influence change in individuals and organisations
10. manage a research project using the necessary equipment and techniques, to meet specified outcomes within the time allocated.

The **learning outcomes** disaggregated from the above are as follows:

Ref. objective 1 the PGR should be able to:
a) identify an original topic for research and /or original problem to be tackled
b) formulate the topic or problem into a research question(s) that may be answered
c) devise a research method appropriate for answering the research question
d) carry out a research project to completion
e) set research in the context of previous research and knowledge, and current priorities and opportunities
f) relate one's own findings to existing research and model development
g) develop theoretical concepts.

Ref. objective 2 the PGR should be able to:
a) identify and access appropriate library and/or archive-based information
b) collect, record and manage information and/or findings
c) analyse and synthesise information and/or findings
d) recognise and demonstrate originality and independent thinking
e) demonstrate practical and analytical skills
f) demonstrate problem-solving skills.

Ref. objective 3 the PGR should be able to:

a) be aware of the strengths and limitations of different research designs including quantitative and qualitative approaches
b) critically evaluate one's own findings and those of others.

Ref. objective 4 the PGR should be able to:
a) present and defend ideas and outcomes of research using appropriate media such as oral presentations, posters, published documents, conference contributions, progress reports etc.
b) present research outcomes in the form of a thesis and defend them at viva.

Ref. objective 5 the PGR should be able to:
a) understand the ways in which research may be communicated to enhance the impact on practice
b) support the learning and research of others.

Ref. objective 6 the PGR should be able to:
a) understand relevant ethical and legal issues and the importance of maintaining the well-being of research participants
b) appreciate and comply with the systems for ensuring ethical research practice e.g. local research ethics committees and research governance
c) understand and act upon relevant health and safety issues e.g. personal safety when data collecting
d) demonstrate responsible working practice.

Ref. objective 7 the PGR should be able to:
a) appreciate the distinctions between theoretical and service research, audit and case studies, and the methods appropriate for each
b) demonstrate an understanding of the political, social and cultural context of research.

Ref. objective 8 the PGR should be able to:
a) interact appropriately with participants, colleagues and organisations during the research process
b) collaborate successfully with other researchers from the same or different organisations.

Ref. objective 9 the PGR should be able to:
a) appreciate the clinical implications of one's own and other's research
b) understand the role of research in changing practice and the other factors influencing change in individuals and organisations
c) appreciate the utility and limitations of research evidence for clinical practice.

Ref. objective 10 the PGR should be able to:
a) plan and organise a programme of research so as to submit his/her thesis within the standard period of study
b) show flexibility and adaptability in managing a research project
c) appreciate and manage relationships with supervisors, team members and others
d) use IT packages and techniques to carry out relevant tasks
e) manage own learning by e.g. identifying personal strengths and training needs, setting objectives, drawing upon/using sources of support, attending relevant training events and recording and reflecting on progress.

2. Assessment

Achievement will be assessed by the examination of the candidate's thesis by an internal and external examiner appointed for that purpose, and performance under oral examination. It will also include the assessment of achievement by a variety of methods in accordance with the learning outcomes of the taught and clinical components specified for the programme. Assessment of the thesis will involve the achievement of the candidate in:

DOCTOR OF CLINICAL PSYCHOLOGY

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work;
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice;
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice;
- drawing on a range of perspectives on the area of study;
- evaluating and criticising received opinion;
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis.

Doctor of Paediatric Dentistry 2020/21 – Pending changes for 2021/22

Programme of Study for the degree of Doctor of Paediatric Dentistry

The Doctor of Paediatric Dentistry is offered on a full-time and part-time basis. The programme will normally commence in September or October.

The standard period of study for the full-time programme: 3 years

The standard period of study for part-time programme: 5 years

The maximum period before submission of the thesis is 4 years for the full-time and 7 years for the part-time programme.

Entry Requirements:

1. The following may be accepted as candidates for the degree of Doctor of Paediatric Dentistry:

   Graduates of an approved university or equivalent institution who have been awarded at the appropriate standard an Honours degree of Bachelor in Dentistry (BChD/MChD or BDS equivalent).

   Applicants should also have postgraduate experience equivalent to two years full-time clinical practice.

   Graduates seeking a Certificate of Completion of Specialist Training (CCST), in order to be eligible to register on the General Dental Council's (GDC) Specialist Lists, must be accepted onto the programme as a Specialist Registrar (SpR) with an NTN (National Training Number). Providing all necessary requirements are met, such individuals are then eligible to undertake training for the relevant Royal College Memberships.

2. Where the applicant's first language is not English, applicants for admission to the programme leading to the award of the degree of Doctor of Paediatric Dentistry must, before they can be admitted to the University, provide evidence that they have obtained an **IELTS band score 7.0** (with not less than 6.5 in Listening, Reading, Speaking and Writing skills)

Programme

3. Candidates will in the first instance be accepted as provisional DPaedDent candidates.

4. On entry to the programme every candidate will be assigned a research supervisor (normally 2) and a clinical supervisor: in most cases one of the research supervisors will also fulfil the role of the clinical supervisor.

Content of Programme of Study

5. Candidates are required to complete both research and taught components totalling 240 credits over the duration of the period of study.

   The pattern of study for full-time candidates will be as follows:

Years 1-3

- DSUR5065M Research Project (40 credits)

Years 1-2

- DSUR5061M Introduction to Research Methodology and Ethics (10 credits)
- DSUR5059M Core Epidemiology (10 credits)
- DSUR5104M Statistical Methods (10 credits)
- DSUR5068M Medical Emergencies (10 credits)
- DSUR5069M Dental Radiology (10 credits)
- DSUR5125M Paediatric Dentistry 1 (468 clinical hours) (60 credits)
- DSUR5063M Service-related research (10 credits)
- DSUR5055M Transferable Skills 1 (10 credits)

Years 2-3

- DSUR5126M Paediatric Dentistry 2 (648 clinical hours) (50 credits)
- DSUR5064M Clinical case study research (10 credits)

- DSUR5056M Transferable skills II (10 credits)

For part-time candidates the number of taught credits taken will vary from year to year.

Progression

6. Candidates will be initially accepted as provisional DPaedDent candidates. By the end of the first 18 months for full-time study and 30 months for part-time study, candidates are required to prepare a report and undergo an assessment for transfer to the specific doctoral degree category of DPaedDent. An assessment panel will be established, in accordance with the University's Code of Practice for Research Degree Candidatures and Faculty Protocol for the implementation of the University Code, to assess each candidate for transfer to full DPaedDent registration. The decision to transfer will be based on the submission of appropriate material for assessment and all Postgraduate Researchers (PGRs) must undergo viva voce examination by an assessment panel which must include at least two independent individuals who have not been involved in the supervisory support of the candidate. The PGR will be interviewed by the assessment panel in the form of a viva voce examination.

   A successful transfer is dependent upon the candidate having passed (i.e. achieved a mark of 50% or above) all taught modules which have been delivered and examined up to the point of transfer.

7. A candidate who is initially unsuccessful in the transfer assessment may be given, at the discretion of the assessment panel, one further opportunity for review normally within a period of three months (six months at the maximum)) for full-time candidates and within six months (eight months at the maximum) for part-time candidates.

8. A candidate who is not recommended for transfer to full doctoral registration may be given the opportunity to complete the academic year and submit a dissertation that would form part of the requirements for the award of a Masters degree (see 18 (iii)).

Examination and Assessment

Research Project

9. The normal expectation is that candidates will successfully complete modules, accruing no less than 240 credits for the taught component, by the end of Year 3 for full-time study (or by the end of Year 5 for part-time study) and submit their theses for examination, at the latest, by the end of Year 4 for full-time study (or by the end of Year 7 for part-time study.

10. Candidates are required to submit a thesis for examination of up to 50,000 words in length in the area of their specialist field of study and satisfy the examiners as specified in Ordinance X and its associated Regulations.

11. Except with the special permission of the relevant committee, every candidate is required to submit their thesis for examination for the degree of Doctor of Paediatric Dentistry by no later than:

    (i) the end of the fourth year after their entry upon the approved course of full-time study and research; or

    (ii) the end of the seventh year after their entry upon the approved course of part-time study and research.

12. Where the progress and quality of the candidate's research justify it, the relevant committee is empowered to reduce the required minimum period of study, as specified in Article 5 of Ordinance X provided that no candidate shall submit for examination before the completion of:

    (i) a total of two calendar years of full-time study; or

    (ii) a total of three calendar years of part-time study.

13. Following examination, the examiners will be asked to make one of the following recommendations:

    (a) Pass.

    (b) Pass (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): these corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or 'minor

deficiencies' are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received.

(c) Referral (see 14 below).

(d) Fail: the candidate has no further opportunity for submission.

14. If the thesis is not considered to be of sufficiently high standard to recommend the award of the degree but there is evidence of the potential of a successful DPaedDent submission, then on the recommendation of the examiners the candidate will be granted permission to resubmit the work in a revised form for the degree of DPaedDent within a period of eighteen months, on one occasion only and on payment of an additional fee.

15. The recommendation of the examiners is subject to confirmation by the Graduate Board's Examinations Group which will consider the examiners' report.

16. The Learning Outcomes for the degree of Doctor of Paediatric Dentistry are published in a later section.

Candidates Failing the Programme

17. Candidates will normally be deemed to have failed the programme and be asked to withdraw if:

(i) they fail to meet the requirements for taught modular study namely: marks at or above 50% in all of the compulsory modules and accruing no less than 240 credits for the taught component overall.

(ii) they fail to satisfy the transfer assessment panel;

or

(iii) they fail to satisfy the examiners in the research thesis.

Exit Points

18. Candidates who leave without completion of the research thesis element of the programme may, providing that they have satisfied the relevant regulations for the award of these qualifications:

(i) elect to graduate with the Postgraduate Certificate;

(ii) elect to graduate with the Postgraduate Diploma;

(iii) transfer to registration for the degree of Master of Science in Paediatric Dentistry (MSc)[1]

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for the degree of DPaedDent

1. Learning Outcomes

On completion of the programme candidates should have shown evidence of being able to:

Meet the Learning Outcomes as defined by the University of Leeds Graduate Board. Through a combination of taught components, transferable skills training and research components the student will:

- interpret and communicate knowledge through an extensive piece of original research and scholarship of publishable quality that would satisfy peer review;
- present and defend research outcomes which extend the forefront of Paediatric Dentistry; demonstrate the ability to synthesise and interpret relevant clinical information to provide possible solutions to clinical problems in Paediatric Dentistry;

[1] In the event that a transfer assessment panel does not recommend that a candidate be transferred to DPaedDent (see section 8) those candidates who have accrued sufficient credits but are not recommended for transfer to full degree registration (i.e. DPaedDent) may be permitted to complete Year 2 (full-time) or year 3 (part-time) and submit a dissertation that would form part of the requirements for the award of a Masters degree as an exit qualification after 24 months for full-time study and 36 months for part-time study.

- demonstrate in-depth, specialist knowledge and mastery of contemporary techniques relevant to Paediatric Dentistry and to demonstrate a sophisticated understanding of the concepts and information at the forefront of Paedodontics, including clinical governance: ;
- be able to undertake decision-making in complex and unpredictable situations, including diagnosis and treatment planning (together with the limitations of treatment), evaluation and prediction of outcomes and management of the child patient;
- be able to underpin clinical practice in Paedodontics with in-depth theoretical knowledge;
- take a proactive and self-reflective role in working, and develop professional relationships with others, particularly in relation to functioning within a multi-disciplinary team providing paedodontic treatment; be able to articulate complex ideas and discuss them with peers and other professionals;
- critically evaluate current issues, research and advanced scholarship in Paedodontics and the wider dental field;
- understand relevant ethical and legal issues and be able to apply them in their research;
- understand relevant health and safety issues;
- demonstrate responsible working practice.

2. Transferable (Key) Skills

Candidates will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry;
- evaluating their own achievement and that of others;
- self-direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;

3. Learning Context

The learning context will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. This will include clinical skills development. Opportunities will be provided for candidates to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions;
- make an original contribution to the field

Candidates will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis and performance under oral examination. During the course of the programme there will also be assessment of achievement by a variety of methods in accordance with the learning outcomes of any taught modules specified for the programme. Final assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work;
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice;
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice;

- drawing on a range of perspectives on the area of study;
- evaluating and criticising received opinion;
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis.

Doctor of Paediatric Dentistry 2021/22

Programme of Study for the degree of Doctor of Paediatric Dentistry

The Doctor of Paediatric Dentistry is offered on a full-time basis only.

The standard period of study is 3 years. The maximum period before submission of the thesis is 4.

The programme will normally commence in September or October.

Admission

1. The following may be accepted as candidates for the degree of Doctor of Paediatric Dentistry:

   Graduates of an approved university or equivalent institution who have been awarded at the appropriate standard an Honours degree of Bachelor in Dentistry (BChD/MChD or BDS equivalent).

   Applicants should also have postgraduate experience equivalent to two years full-time clinical practice.

   Graduates seeking a Certificate of Completion of Specialist Training (CCST), in order to be eligible to register on the General Dental Council's (GDC) Specialist Lists, must be accepted onto the programme as a Specialist Registrar (SpR) with an NTN (National Training Number). Providing all necessary requirements are met, such individuals are then eligible to undertake training for the relevant Royal College Memberships.

2. Where the applicant's first language is not English, applicants for admission to the programme leading to the award of the degree of Doctor of Paediatric Dentistry must, before they can be admitted to the University, provide evidence that they have obtained an IELTS band score 7.0 (with not less than 6.5 in Listening, Reading, Speaking and Writing skills);
3. Candidates will in the first instance be accepted as provisional DPaedDent candidates.
4. On entry to the programme every candidate will be assigned a research supervisor (normally 2) and a clinical supervisor: in most cases one of the research supervisors will also fulfil the role of the clinical supervisor.

Content of Programme of Study

5. Candidates are required to complete both research and taught components totalling 240 credits over the duration of the period of study.

   The pattern of study for full-time candidates will be as follows:

Year 1

- DSUR5022M Research Methods Ethics and Statistics (30 credits)
- DSUR5055M Transferable Skills 1 (10 credits)
- DSUR5114M Dental Radiology (10 credits)
- DSUR5099M Medical Emergencies (10 credits)
- DSUR5125M Paediatric Dentistry 1 (468 clinical hours) (60 credits)

Year 2

- DSUR5056M Transferable skills II (10 credits)
- DSUR5126M Paediatric Dentistry 2 (648 clinical hours) (50 credits)

Year 3

- DSUR5127M Paediatric Dentistry 3 (540 clinical hours) (40 credits)
- DSUR5128M Paediatric Dentistry Clinical Cases (20 credits)

Progression

6. Candidates will be initially accepted as provisional DPaedDent candidates. By the end of the first 18 months candidates are required to prepare a report and undergo an assessment for transfer to the specific doctoral degree category of DPaedDent. An assessment panel will be established, in accordance with the University's Code of Practice for Research Degree Candidatures and Faculty Protocol for the implementation of the University Code, to assess each candidate for transfer to full DPaedDent registration. The decision to transfer

will be based on the submission of appropriate material for assessment and all Postgraduate Researchers (PGRs) must undergo viva voce examination by an assessment panel which must include at least two independent individuals who have not been involved in the supervisory support of the candidate. The PGR will be interviewed by the assessment panel in the form of a viva voce examination.

A successful transfer is dependent upon the candidate having passed (i.e. achieved a mark of 50% or above) all taught modules which have been delivered and examined up to the point of transfer.

7. A candidate who is initially unsuccessful in the transfer assessment may be given, at the discretion of the assessment panel, one further opportunity for review normally within a period of three months (six months at the maximum).
8. A candidate who is not recommended for transfer to full doctoral registration may be given the opportunity to complete the academic year and submit a dissertation that would form part of the requirements for the award of a Masters degree (see 18 (iii)).

Examination and Assessment

Research Project

9. The normal expectation is that candidates will successfully complete modules, accruing no less than 240 credits for the taught component, by the end of Year 3 and submit their theses for examination, at the latest, by the end of Year 4 for full-time study.
10. Candidates are required to submit a thesis for examination of up to 50,000 words in length in the area of their specialist field of study and satisfy the examiners as specified in Ordinance X and its associated Regulations.
11. Except with the special permission of the relevant committee, every candidate is required to submit their thesis for examination for the degree of Doctor of Paediatric Dentistry by no later than the end of the fourth year after their entry upon the approved course of full-time study and research.
12. Where the progress and quality of the candidate's research justify it, the relevant committee is empowered to reduce the required minimum period of study, as specified in Article 5 of Ordinance X provided that no candidate shall submit for examination before the completion of a total of two calendar years of full-time study;
13. Following examination, the examiners will be asked to make one of the following recommendations:
    (a) Pass.
    (b) Pass (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): these corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or 'minor deficiencies' are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received.
    (c) Referral (see 14 below).
    (d) Fail: the candidate has no further opportunity for submission.
14. If the thesis is not considered to be of sufficiently high standard to recommend the award of the degree but there is evidence of the potential of a successful DPaedDent submission, then on the recommendation of the examiners the candidate will be granted permission to resubmit the work in a revised form for the degree of DPaedDent within a period of eighteen months, on one occasion only and on payment of an additional fee.
15. The recommendation of the examiners is subject to confirmation by the Graduate Board's Examinations Group which will consider the examiners' report.
16. The Learning Outcomes for the degree of Doctor of Paediatric Dentistry are published in a later section.

Candidates Failing the Programme

17. Candidates will normally be deemed to have failed the programme and be asked to withdraw if:

(i) they fail to meet the requirements for taught modular study namely: marks at or above 50% in all of the compulsory modules and accruing no less than 240 credits for the taught component overall.

(ii) they fail to satisfy the transfer assessment panel;

or

(iii) they fail to satisfy the examiners in the research thesis.

Exit Points

18. Candidates who leave without completion of the research thesis element of the programme may, providing that they have satisfied the relevant regulations for the award of these qualifications:

(i) elect to graduate with the Postgraduate Certificate;

(ii) elect to graduate with the Postgraduate Diploma;

(iii) transfer to registration for the degree of Master of Science in Paediatric Dentistry (MSc)[1]

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for the degree of DPaedDent

1. Learning Outcomes

On completion of the programme candidates should have shown evidence of being able to:

Meet the Learning Outcomes as defined by the University of Leeds Graduate Board. Through a combination of taught components, transferable skills training and research components the student will:

- interpret and communicate knowledge through an extensive piece of original research and scholarship of publishable quality that would satisfy peer review;
- present and defend research outcomes which extend the forefront of Paediatric Dentistry; demonstrate the ability to synthesise and interpret relevant clinical information to provide possible solutions to clinical problems in Paediatric Dentistry;
- demonstrate in-depth, specialist knowledge and mastery of contemporary techniques relevant to Paediatric Dentistry and to demonstrate a sophisticated understanding of the concepts and information at the forefront of Paedodontics, including clinical governance: ;
- be able to undertake decision-making in complex and unpredictable situations, including diagnosis and treatment planning (together with the limitations of treatment), evaluation and prediction of outcomes and management of the child patient;
- be able to underpin clinical practice in Paedodontics with in-depth theoretical knowledge;
- take a proactive and self-reflective role in working, and develop professional relationships with others, particularly in relation to functioning within a multi-disciplinary team providing paedodontic treatment; be able to articulate complex ideas and discuss them with peers and other professionals;
- critically evaluate current issues, research and advanced scholarship in Paedodontics and the wider dental field;
- understand relevant ethical and legal issues and be able to apply them in their research;
- understand relevant health and safety issues;
- demonstrate responsible working practice.

[1] In the event that a transfer assessment panel does not recommend that a candidate be transferred to DPaedDent (see section 8) those candidates who have accrued sufficient credits but are not recommended for transfer to full degree registration (i.e. DPaedDent) may be permitted to complete Year 2 (full-time) and submit a dissertation that would form part of the requirements for the award of a Masters degree as an exit qualification after 24 months.

2. Transferable (Key) Skills

Candidates will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry;
- evaluating their own achievement and that of others;
- self-direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;

3. Learning Context

The learning context will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. This will include clinical skills development. Opportunities will be provided for candidates to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions;
- make an original contribution to the field

Candidates will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis and performance under oral examination. During the course of the programme there will also be assessment of achievement by a variety of methods in accordance with the learning outcomes of any taught modules specified for the programme. Final assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work;
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice;
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice;
- drawing on a range of perspectives on the area of study;
- evaluating and criticising received opinion;
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis.

Master of Philosophy 2021/22

Programme of Study for the degree of Master of Philosophy

1. Candidates may undertake study for the degree of MPhil in any Faculty of the University or accredited Institution, under supervision arrangements specified in Ordinance X and its associated Regulations.
2. The other requirements for the degree, including periods of study and examination requirements are set out in Ordinance X and its associated regulations.

Admission of candidates in the Faculties of Arts, Humanities and Communication, Business, Education, Social Sciences and Law:

Graduates of an approved university or institution, or persons whose qualifications by study in an approved institution have been accepted by the Senate as equivalent to or in lieu of a degree, may be accepted as candidates for the degree of Master of Philosophy provided that, with the approval of the relevant committee,

(a) applicants who wish to proceed to the degree in a subject not studied as a substantial part of their first degree level work may be required, before an acceptance as candidates, to reach a satisfactory standard in a preliminary examination on that subject, and

(b) applicants who have not reached the honours standard in a first degree examination may be required, not less than one year after the date of their acceptance, to pass a qualifying examination in a subject prescribed by the relevant committee.

Admission of candidates in the Faculties of Biological Sciences, Environment, Mathematics and Physical Sciences, Engineering and Medicine and Health:

The following may be accepted as candidates for the degree of Master of Philosophy:

(a) graduates of an approved university,

(b) persons who have been awarded an approved diploma in applied science of this University in a subject regarded by the relevant committee as an appropriate preparation for the proposed research,

(c) persons whose qualifications by study in an approved institution have been accepted by the relevant committee as equivalent to or in lieu of a degree.

Progress and Monitoring

3. Candidates accepted directly to the degree of Master of Philosophy are not required to undergo formal assessment for transfer to a definite degree category. The arrangements for formal reports on progress by the supervisor(s) are described in the University Code of Practice for Research Degree Candidatures which is published in the Postgraduate Researcher (PGR) Handbook.

Supervision

4. A supervisor(s) will be appointed for each PGR at the commencement of the candidature.

Examination and Assessment

5. Candidates must present a thesis[1] (60,000 words maximum) on the subject of their research and satisfy the examiners as specified in Ordinance X and its associated Regulations.
6. Except with the special permission of the relevant committee, every candidate is required to submit their thesis for examination for the degree of Master of Philosophy by no later than:

   (i) the end of the third year after their entry upon the approved course of full-time study and research; or

   (ii) the end of the sixth year after their entry upon the approved course of part-time study and research.

[1] Except where an alternative method of submission is stipulated in the regulations for Ordinance X. In Schools where an alternative form of submission is permitted, specific regulations for the binding and presentation of the work are published.

7. Where the progress and quality of the candidate's research justify it, the relevant committee is empowered to reduce the required minimum period of study, as specified in Article 5 of Ordinance X provided that no candidate shall submit for examination before the completion of:
   (i) a total of one calendar year of full-time study;
   (ii) a total of two calendar years of part-time study.
8. Following examination, the examiners will be asked to make one of the following recommendations
   (a) Pass with distinction
   (b) Pass
   (c) Pass (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): these corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or 'minor deficiencies' are corrected by the candidate. A degree may not be awarded until confirmation is received that the corrections have been completed.
   (d) Referral
   (e) Fail: the candidate has no further opportunity for submission for the degree.
9. If the thesis is not considered to be of sufficiently high standard to recommend the award of the degree but there is evidence of the potential of a successful MPhil submission, then on the recommendation of the examiners the candidate will be granted permission to resubmit the work in a revised form for the degree of Master of Philosophy within a period of fifteen months, on one occasion only and on payment of an additional fee.
10. The recommendation of the examiners is subject to confirmation by the Graduate Board's Examinations Group which will consider the examiners' report.

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for the degree of MPhil

1. Learning Outcomes

On completion of the research programme PGRs should have shown evidence of being able:

- to interpret and communicate knowledge in their discipline through originality in their application of knowledge and a practical understanding of established techniques of research at a level suitable for publication in reputable journals/publications as appropriate to the field of research;
- to present and defend research outcomes much of which is at, or informed by, the forefront of a discipline or area of professional/clinical practice;
- to demonstrate an independent and comprehensive contribution to knowledge in the subject area and expertise in generic and subject/professional skills;
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate;
- to formulate ideas and hypotheses proactively and to design, develop, implement and execute plans by which to evaluate these;
- to critically evaluate current issues, research and advanced scholarship in the discipline;
- to demonstrate knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

2. Transferable (key) skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary to undertake research at a higher level, for a future career as a researcher and/or for employment in a higher capacity in industry or area of professional/clinical practice;

- evaluating their own achievement and that of others;
- self-direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development.

3. Learning Context

For *MPhil* PGRs the learning context will include the critical analysis of, and decision making in, complex and unpredictable situations. The structure of the programme will provide research training, breadth and/or depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to develop:

- interests and informed opinions
- their involvement in the design and management of their learning activities
- their communication of their conclusions;
- their ability to undertake critical analysis

PGRs will be expected to progress to fully autonomous study and work.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis[2] and performance under oral examination and will involve the achievement of the candidate in:

- evidencing an ability to conduct independent broad and/or in-depth enquiry within different aspects of the discipline which leads to the production of material at a level suitable for publication;
- drawing on, and selecting appropriately from, a range of research techniques and methodologies in their enquiries into the discipline;
- demonstrating the ability to apply breadth and/or depth of knowledge to a complex specialist area;
- drawing on a range of perspectives on an area of study;
- evaluating and criticising received opinion;
- making reasoned judgements whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis.

[2] or alternative form of thesis

Master by Research 2021/22

Programme of study for the degree of Master by Research

1. Candidates may undertake study for the degree of Master by Research in one of the following categories:

Master of Arts by Research	MA
Master of Education by Research	MEd
Master of Science by Research	MSc
Master of Science (Engineering) by Research	MSc(Eng)

2. Submission of theses for the degrees of MA, MEd, MSc and MSc(Eng) by research should normally take place within 12 months of full-time or 24 months of part-time study.
3. Due to the particular nature of the MA, MEd, MSc and MSc(Eng) by research and the requirements for completion within the specified time periods applicants for admission should normally have at least an upper second class honours degree or previous research experience.
4. The research project for candidates for the degrees of MA, MEd, MSc and MSc(Eng) by research must be clearly designed and planned at the time of application to enable submission within the limited time available. The proposed project must be submitted for approval by the relevant committee prior to acceptance of any applicant.

Progress and Monitoring

5. Candidates accepted directly to the degrees of MA, MEd, MSc and MSc(Eng) are not required to undergo formal assessment for transfer to a definite degree category. However, there should be regular reports by the supervisor on the PGR's progress. As a minimum, there should be a report at the mid-point of the first year and, in the case of part-time candidates, the end of the first year and at least annually thereafter.
6. Candidates accepted directly to one of the Masters degrees by research, except those registered in the Faculty of Arts, are not normally permitted to transfer registration to either the degree of PhD or MPhil.

Supervision

7. A supervisor(s) will be appointed for each PGR at the commencement of the candidature.

Examination and Assessment

8. Candidates for one of the Masters degrees by research must present a thesis (30,000 words maximum) on the subject of his/her research which must contain matter at a level suitable for publication and must satisfy the examiners as specified in Ordinance X and its associated Regulations.

9. In the case of the degrees of Master of Education, Master of Science and Master of Science (Engineering) the language of the thesis shall be English. In the case of the degree of Master of Arts, in the area of modern languages, the language of the thesis shall normally be English, although, if the particular subject so demands, the relevant committee may be prepared to give permission at the time of the applicant's acceptance as a candidate for the MA degree by research for a thesis to be submitted in a language other than English.
10. Candidates for the degrees of MA, MEd, MSc and MSc(Eng) by supervised research will not be permitted to submit their thesis for examination before completion of either one calendar year of full-time study or two calendar years of part-time study.
11. For the degrees of MA, MEd, MSc and MSc(Eng) the last date for the submission of the thesis shall normally be at the end of the prescribed period of research. In exceptional circumstances this may be extended by not

more than three months by prior permission of the relevant committee.

12. Following examination, the examiners will be asked to make one of the following recommendations
    (a) Pass with distinction
    (b) Pass
    (c) Pass (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): these corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or 'minor deficiencies' are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received
    (d) Referral (see 13 below)
    (e) Fail: the candidate has no further opportunity for submission for the degree.
13. If the thesis is not considered to be of sufficiently high standard to recommend the award of the degree but there is evidence of the potential of a successful Mastership by research submission, then on the recommendation of the examiners the candidate will be granted permission to resubmit the work in a revised form for the degree of Master by research within a period of nine months, on one occasion only and on payment of an additional fee.

14. The recommendation of the examiners is subject to confirmation by the Graduate Board's Examinations Group which will consider the examiners' report.

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for the degree of Master by Research

1. Learning Outcomes

On completion of the programme PGRs should have shown evidence of being able:

- to interpret and communicate knowledge in their discipline through originality in their application of knowledge and a practical understanding of established techniques of research at a level suitable for publication in reputable journals/publications as appropriate to the field of research;
- to present and defend research outcomes much of which is at, or informed by, the forefront of a discipline or area of professional/clinical practice;
- to demonstrate a detailed knowledge of the subject area and expertise in generic and subject/professional skills;
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate;
- formulate ideas and hypotheses proactively and to develop, implement and execute plans by which to evaluate these;
- to critically evaluate current issues, research and advanced scholarship in the discipline;
- to demonstrate knowledge of and be able to assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

2. Transferable (key) skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary to undertake research at a higher level, for a future career as a researcher and/or for employment in a higher capacity in industry or area of professional/clinical practice;
- evaluating their own achievement and that of others;
- self-direction and effective decision making in complex and unpredictable situations;

- independent learning and the ability to work in a way which ensures continuing professional development.

3. Learning Context

For Master (MA, MEd, MSc and MSc[Eng]) by Research) the learning context will include the analysis of, and decision making in, complex and unpredictable situations. The structure of the programme will provide research training, depth of study and opportunities for drawing upon appropriate resources and techniques. In the case of MDS this may also include clinical skills development. Opportunities will be provided for PGRs to develop:

- interests and informed opinions
- their involvement in the design and management of their learning activities
- their communication of their conclusions;
- PGRs will be expected to progress to fully autonomous study and work.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis and performance under oral examination. It will involve the achievement of the candidate in:

- evidencing an ability to conduct independent in-depth enquiry within a significant aspect or different aspects of the discipline or area of clinical/professional practice which leads to the production of material at a level suitable for publication;

- drawing on, and selecting appropriately from, a range of research techniques and methodologies in their enquiries into the discipline or area of clinical/professional practice;
- demonstrating the ability to apply breadth and/or depth of knowledge to a complex specialist area;
- drawing on a range of perspectives on an area of study;
- evaluating and criticising received opinion;
- making reasoned judgements whilst understanding the limitations on judgements made in the absence of complete data;
- the written style and overall presentation of the thesis

Programme of study for Doctor of Philosophy – CDT Satellite Data in Environmental Science **(Full Time mode only)** 2021/22

Faculty responsible for the programme: Environment. This CDT is a partnership with the University of Edinburgh

Criteria for Admission

Minimum Bachelor Degree with First Class or Upper Second Class Honours (I or II(i)) in a relevant subject, or equivalent.

IELTS: 6.0 overall with at least 5.5 in all components. TOEFL IBT: 87 (minimum score of 20 in listening & reading, 21 in writing and 22 in speaking)

Year One

- The candidate will commence research under the direction of their supervision team will have at least 10 formal supervision meetings a year.

  In addition the PGR will participate in:

  12 weeks of training offered in two 6-weeks blocks: Block One at Edinburgh University and Block Two at University of Leeds

  A Field Trip that will also include a week of specialist training

  Annual SENSE Industry Symposium

- The following formal monitoring and progression points will take place in year 1 :

  Month 3: Completion of the training plan

  Month 6: First Formal Progress Report

  Month 12: Completion of Transfer Process

Candidates will be required to undergo the formal assessment procedure for transfer to PhD status before the end of the first year of study. The decision to transfer will be based on the submission of appropriate material for assessment and all Postgraduate Researchers (PGRs) must undergo an oral examination by an assessment panel which must include at least two independent individuals who have not been involved in the supervisory support of the candidate. The PGR will be interviewed by the assessment panel in the form of a viva voce examination.

Year 2

The candidate will commence research under the direction of their supervision team will have at least 10 formal supervision meetings a year.

- PGRs undertake 1 week of residential courses on discipline-specific training run by a partner organisations in the CDT. They will also participate in further professional development training including :
  - Science Communication
  - Big Data
  - The Annual SENSE Industry Symposium

- The following monitoring will take place in year 2:
  By month 24: Annual Progress Review

Year Three

- The candidate will commence research under the direction of their supervision team will have at least 10 formal supervision meetings a year.
    - 1 week residential course and other non-residential professional development training
    - Minimum 3 months Industrial Placement at the end of Year 3
    - Annual SENSE Industry Symposium
- The following monitoring will take place in year 3:
  By month 36: Annual Progress Review and plan for submission within the 4 year deadline

Year Four

- The candidate will commence research under the direction of their supervision team will have at least 10 formal supervision meetings a year.
    - Annual SENSE Industry Symposium, Public Engagement and Outreach Activities
    - Month 48: Thesis submission

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for PhD

1. Learning Outcomes

On completion of the research programme PGRs should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry

- evaluating their own achievement and that of others
- self-direction and effective decision making in complex and unpredictable situations
- independent learning and the ability to work in a way which ensures continuing professional development

3. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions
- make an original contribution to the field

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis[1] and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice
- drawing on a range of perspectives on the area of study
- evaluating and criticising received opinion
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis

[1] or alternative form of thesis

DOCTOR OF PHILOSOPHY – **CDT Satellite Data in Environmental Science**

Programme of study for Doctor of Philosophy – CDT Satellite Data in Environmental Science **(Full Time mode only)** 2021/22

Faculty responsible for the programme

Faculty of Environment. This CDT is delivered in partnership with the University of Edinburgh.

Programme length

The Standard Period of Study for the programme is 45 months and the Thesis Submission Deadline is 48 months.

Criteria for Admission

Minimum Bachelor Degree with First Class or Upper Second Class Honours (I or II(i)) in a relevant subject, or equivalent.

IELTS: 6.0 overall with at least 5.5 in all components. TOEFL IBT: 87 (minimum score of 20 in listening & reading, 21 in writing and 22 in speaking)

Year One

- The candidate will commence research under the direction of their supervision team will have at least 10 formal supervision meetings a year.

  In addition the PGR will participate in:

  12 weeks of training offered in two 6-weeks blocks: Block One at Edinburgh University and Block Two at University of Leeds

  A Field Trip that will also include a week of specialist training

  Annual SENSE Industry Symposium

- The following formal monitoring and progression points will take place in year 1:

  Month 3: Completion of the training plan

  Month 6: First Formal Progress Report

  Month 12: Completion of Transfer Process

Candidates will be required to undergo the formal assessment procedure for transfer to PhD status before the end of the first year of study. The decision to transfer will be based on the submission of appropriate material for assessment and all Postgraduate Researchers (PGRs) must undergo an oral examination by an assessment panel which must include at least two independent individuals who have not been involved in the supervisory support of the candidate. The PGR will be interviewed by the assessment panel in the form of a viva voce examination.

Year 2

The candidate will commence research under the direction of their supervision team will have at least 10 formal supervision meetings a year.

- PGRs undertake 1 week of residential courses on discipline-specific training run by partner organisations in the CDT. They will also participate in further professional development training including:
    - Science Communication
    - Big Data
    - The Annual SENSE Industry Symposium
- The following monitoring will take place in year 2:
  By month 24: Annual Progress Review

Year Three

- The candidate will commence research under the direction of their supervision team will have at least 10 formal supervision meetings a year.
    - 1-week residential course and other non-residential professional development training
    - Minimum 3 months Industrial Placement at the end of Year 3
    - Annual SENSE Industry Symposium
- The following monitoring will take place in year 3:
  By month 36: Annual Progress Review and plan for submission within the 4-year deadline

Year Four

- The candidate will commence research under the direction of their supervision team will have at least 10 formal supervision meetings a year.
    - Annual SENSE Industry Symposium, Public Engagement and Outreach Activities
    - Month 48: Thesis submission

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for PhD

1. Learning Outcomes

On completion of the research programme PGRs should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline

- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry
- evaluating their own achievement and that of others
- self-direction and effective decision making in complex and unpredictable situations
- independent learning and the ability to work in a way which ensures continuing professional development

3. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions
- make an original contribution to the field

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis[1] and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice
- drawing on a range of perspectives on the area of study
- evaluating and criticising received opinion
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis

[1] or alternative form of thesis

DOCTOR OF PHILOSOPHY – **CDT Satellite Data in Environmental Science**

Programme of Study for the degree of Doctor of Philosophy 2021/22 Dual Award

Leeds University –University of Copenhagen (2020-2023 only: this programme is no longer recruiting)

Horizon 2020: INSECTDOCTOR

Entry Requirements

A minimum of a II(i) honours degree, or equivalent qualification

Applicants will normally be required to have obtained a relevant degree of at least equivalent to a UK upper second class honours degree as well as at least 6.5 on IELTS (with no component below 6.0) or an equivalent English language qualification.

1. Candidates may undertake study for the Dual PhD degree under the supervision of a joint supervisory team from the University of Leeds and University of Copenhagen. Supervisors who satisfy the eligibility requirements specified by the relevant committee will be appointed at the commencement of the programme of study. This programme is a collaborative dual PhD offered by the Faculty of Biological Sciences.

2. The requirements for the degree, including periods of study and examination requirements are set out in Ordinance X and its associated regulations[1].

3. All candidates for the degree of PhD are expected to undertake appropriate generic training. Candidates may be required to undertake some elements of advanced study and complete written examinations satisfactorily before proceeding to the submission of a thesis.

Dual PhD Candidatures

Full-time

The period of study will extend over a standard period of three years and the method of study will be full-time. The Maximum Time Limit for submission of the thesis is four years. The postgraduate researcher will spend a minimum of 1 year at the University of Leeds as part of this arrangement with the University of Copenhagen.

Progress and Monitoring

4. Candidates will in the first instance be accepted either as a provisional candidate for the degree of PhD. After the initial period of provisional registration, candidates are subject to the process whereby they are formally assessed[2] and, if successful in the assessment, are transferred to the specific degree category of PhD or MPhil.

5. Full-time candidates must undergo assessment by no later than 12 months of study.

6. The decision to transfer will be based on the submission of appropriate material for assessment and all Postgraduate Researchers (PGRs) must undergo an oral examination by an assessment panel which must include at least two independent individuals who have not been involved in the supervisory support of the

[1] The normal standard period of study for a full-time PhD is 3 calendar years, except for certain schemes including some within the Faculty of Biological Sciences and within Centres for Doctoral Training where the normal period of full-time study is 4 calendar years. Special arrangements may also apply to the split-site programmes and to programmes leading to joint awards with other institutions.

[2] For those programmes which have a standard period of study of four years full-time and the assessment for transfer to a specific degree category of either PhD or MPhil normally takes place towards the end of the second year.

candidate. The PGR will be interviewed by the assessment panel in the form of a viva voce examination.

7. A case for an extension to the period of provisional registration would have to be made on academic grounds to the relevant committee. In such cases any period of extension will be no more than six months.

8. The arrangements for formal reports on progress by the supervisor(s) are described in the University Code of Practice for Research Degree Candidatures which is published in the Postgraduate Researcher Handbook which is available at: http://ses.leeds.ac.uk/researchdegreepolicies

Examination and Assessment

9. Candidates must present a thesis[3] (100,000 words maximum) on the subject of their research and satisfy the examiners as specified in Ordinance X and its associated Regulations. The viva will be conducted in English.

10. Except with the special permission[4] of the relevant committee, every candidate is required to submit their thesis for examination for the degree of Doctor of Philosophy by no later than the end of the fourth year after their entry upon an approved course of full-time study.

11. As permitted in Ordinance X (Article 8), when the progress and quality of the candidate's research justify it, the relevant committee is empowered to reduce the required minimum period of study provided that no candidate shall submit for examination of the thesis before the completion of:
    - a total of two calendar years of full-time study
    - a total of three calendar years of part-time study

12. Following examination, the examiners will be asked to make one of the following recommendations
    a) Pass
    b) Pass (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): these corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or minor deficiencies are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received.
    c) Referral (see 16 below)
    d) Recommend award of MPhil[5]: for those candidates who fail to achieve the standard for the award of a PhD but who nevertheless satisfy the criteria for the award of the degree of MPhil.
    e) Recommend award of MPhil[5] (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): These corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or 'minor deficiencies' are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received
    f) Referral for MPhil[1] (see 16 below)
    g) Fail: the candidate has no further opportunity for submission.

13. If the thesis is not considered to be of sufficiently high standard to recommend the award of the degree of Doctor of Philosophy but there is evidence of the potential of a successful PhD or MPhil submission, then on the recommendation of the examiners either:
    a) The candidate will be granted permission to resubmit the work in a revised form for the degree of PhD within a period of eighteen months, on one occasion only and on payment of an additional fee.
    b) The candidate will be granted permission to resubmit the work in a revised form for the degree of MPhil within a period of twelve months, on one occasion only and on payment of an additional fee.

[3] Except where an alternative method of submission is stipulated in the Regulations for Ordinance X. In Schools where an alternative form of submission is permitted, specific regulations for the binding and presentation of the work are published.
[4] The 4 year Biological Sciences PhD has a maximum period of study of 48 months
[5] In these circumstances the degree of MPhil may not be awarded with distinction

14. Any candidate whose thesis has been referred for the degree of PhD may, subject to approval by the Head of their School, exercise the option of resubmitting a revised thesis for consideration for the award of the degree of Master of Philosophy.

15. The recommendation of the examiners is subject to confirmation by the Graduate Board's Examinations Group which will consider the examiners' report. In the case of joint awards with another institution the recommendation of the Examiners is also subject to confirmation by the other institution.

16. The Learning Outcomes for the degree of Doctor of Philosophy are published below.

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for PhD

1. Learning Outcomes

On completion of the research programme PGRs should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry
- evaluating their own achievement and that of others
- self-direction and effective decision making in complex and unpredictable situations
- independent learning and the ability to work in a way which ensures continuing professional development

3. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions
- make an original contribution to the field

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis[6] and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice
- drawing on a range of perspectives on the area of study
- evaluating and criticising received opinion
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis

[6] or alternative form of thesis

Programme of Study for the degree of Doctor of Philosophy 2021/22 Dual Award

(Leeds University –University of Coimbra (2020-2023 only: this programme is no longer recruiting)

Horizon 2020: GREENTRIBOS

Entry Requirements

A minimum of a II(i) honours degree, or equivalent qualification

Applicants will normally be required to have obtained a relevant degree of at least equivalent to a UK upper second class honours degree as well as at least 6.5 on IELTS (with no component below 6.0) or an equivalent English language qualification.

1. Candidates may undertake study for the Dual PhD degree under the supervision of a joint supervisory team from the University of Leeds and University of Coimbra. Supervisors who satisfy the eligibility requirements specified by the relevant committee will be appointed at the commencement of the programme of study. This programme is a collaborative dual PhD offered by the Faculty of Engineering and Physical Sciences.

2. The requirements for the degree, including periods of study and examination requirements are set out in Ordinance X and its associated regulations[1].

3. All candidates for the degree of PhD are expected to undertake appropriate generic training. Candidates may be required to undertake some elements of advanced study and complete written examinations satisfactorily before proceeding to the submission of a thesis.

Dual PhD Candidatures

Full-time

The period of study will extend over a standard period of three years and the method of study will be full-time. The Maximum Time Limit for submission of the thesis is four years. The postgraduate researcher will spend between 1 and 2 years at the University of Leeds as set out in the programme of study for this arrangement.

Progress and Monitoring

4. Candidates will in the first instance be accepted either as a provisional candidate for the degree of PhD. After the initial period of provisional registration, candidates are subject to the process whereby they are formally assessed[2] and, if successful in the assessment, are transferred to the specific degree category of PhD or MPhil.

5. Full-time candidates must undergo assessment by no later than 12 months of study.

6. The decision to transfer will be based on the submission of appropriate material for assessment and all Postgraduate Researchers (PGRs) must undergo an oral examination by an assessment panel which must include at least two independent individuals who have not been involved in the supervisory support of the candidate. The PGR will be interviewed by the assessment panel in the form of a viva voce examination.

[1] The normal standard period of study for a full-time PhD is 3 calendar years, except for certain schemes including some within the Faculty of Biological Sciences and within Centres for Doctoral Training where the normal period of full-time study is 4 calendar years. Special arrangements may also apply to the split-site programmes and to programmes leading to joint awards with other institutions.

[2] For those programmes which have a standard period of study of four years full-time and the assessment for transfer to a specific degree category of either PhD or MPhil normally takes place towards the end of the second year.

7. A case for an extension to the period of provisional registration would have to be made on academic grounds to the relevant committee. In such cases any period of extension will be no more than six months.

8. The arrangements for formal reports on progress by the supervisor(s) are described in the University Code of Practice for Research Degree Candidatures which is published in the Postgraduate Researcher Handbook which is available at: http://ses.leeds.ac.uk/researchdegreepolicies

Examination and Assessment

9. Candidates must present a thesis[3] (100,000 words maximum) on the subject of their research and satisfy the examiners as specified in Ordinance X and its associated Regulations. The viva will be conducted in English.

10. Except with the special permission[4] of the relevant committee, every candidate is required to submit their thesis for examination for the degree of Doctor of Philosophy by no later than:
    - the end of the fourth year after their entry upon an approved course of full-time study

11. As permitted in Ordinance X (Article 8), when the progress and quality of the candidate's research justify it, the relevant committee is empowered to reduce the required minimum period of study provided that no candidate shall submit for examination of the thesis before the completion of:
    - a total of two calendar years of full-time study
    - a total of three calendar years of part-time study

12. Following examination, the examiners will be asked to make one of the following recommendations
    a) Pass
    b) Pass (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): these corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or minor deficiencies are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received.
    c) Referral (see 16 below)
    d) Recommend award of MPhil[5]: for those candidates who fail to achieve the standard for the award of a PhD but who nevertheless satisfy the criteria for the award of the degree of MPhil.
    e) Recommend award of MPhil[5] (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): These corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or 'minor deficiencies' are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received
    f) Referral for MPhil[1] (see 16 below)
    g) Fail: the candidate has no further opportunity for submission.

13. If the thesis is not considered to be of sufficiently high standard to recommend the award of the degree of Doctor of Philosophy but there is evidence of the potential of a successful PhD or MPhil submission, then on the recommendation of the examiners either:
    a) The candidate will be granted permission to resubmit the work in a revised form for the degree of PhD within a period of eighteen months, on one occasion only and on payment of an additional fee.
    b) The candidate will be granted permission to resubmit the work in a revised form for the degree of MPhil within a period of twelve months, on one occasion only and on payment of an additional fee.

14. Any candidate whose thesis has been referred for the degree of PhD may, subject to approval by the Head of their School, exercise the option of resubmitting a revised thesis for consideration for the award of

[3] Except where an alternative method of submission is stipulated in the Regulations for Ordinance X. In Schools where an alternative form of submission is permitted, specific regulations for the binding and presentation of the work are published.
[4] The 4 year Biological Sciences PhD has a maximum period of study of 48 months
[5] In these circumstances the degree of MPhil may not be awarded with distinction

the degree of Master of Philosophy.

15. The recommendation of the examiners is subject to confirmation by the Graduate Board's Examinations Group which will consider the examiners' report. In the case of joint awards with another institution the recommendation of the Examiners is also subject to confirmation by the other institution.

16. The Learning Outcomes for the degree of Doctor of Philosophy are published below.

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for PhD

1. Learning Outcomes

On completion of the research programme PGRs should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry
- evaluating their own achievement and that of others
- self-direction and effective decision making in complex and unpredictable situations
- independent learning and the ability to work in a way which ensures continuing professional development

3. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions
- make an original contribution to the field

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis[6] and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice
- drawing on a range of perspectives on the area of study
- evaluating and criticising received opinion
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis

[6] or alternative form of thesis

Programme of Study for the degree of Doctor of Philosophy 2021/22 Dual Award

(Leeds University –University of Ljubljana (2020-2023 only: this programme is no longer recruiting)

Horizon 2020: GREENTRIBOS

Entry Requirements

A minimum of a II(i) honours degree, or equivalent qualification

Applicants will normally be required to have obtained a relevant degree of at least equivalent to a UK upper second class honours degree as well as at least 6.5 on IELTS (with no component below 6.0) or an equivalent English language qualification.

1. Candidates may undertake study for the Dual PhD degree under the supervision of a joint supervisory team from the University of Leeds and University of Ljubljana. Supervisors who satisfy the eligibility requirements specified by the relevant committee will be appointed at the commencement of the programme of study. This programme is a collaborative dual PhD offered by the Faculty of Engineering and Physical Sciences.

2. The requirements for the degree, including periods of study and examination requirements are set out in Ordinance X and its associated regulations[1].

3. All candidates for the degree of PhD are expected to undertake appropriate generic training. Candidates may be required to undertake some elements of advanced study and complete written examinations satisfactorily before proceeding to the submission of a thesis.

Dual PhD Candidatures

Full-time

The period of study will be a period of three years and the method of study will be full-time. The Maximum Time Limit for submission of the thesis is four years. The postgraduate researcher will spend a between 1 and 2 years at the University of Leeds as set out in the programme of study for this arrangement.

Progress and Monitoring

4. Candidates will in the first instance be accepted either as a provisional candidate for the degree of PhD. After the initial period of provisional registration, candidates are subject to the process whereby they are formally assessed[2] and, if successful in the assessment, are transferred to the specific degree category of PhD or MPhil.

5. Full-time candidates must undergo assessment by no later than 12 months of study.

6. The decision to transfer will be based on the submission of appropriate material for assessment and all Postgraduate Researchers (PGRs) must undergo an oral examination by an assessment panel which must include at least two independent individuals who have not been involved in the supervisory support of the candidate. The PGR will be interviewed by the assessment panel in the form of a viva voce examination.

[1] The normal standard period of study for a full-time PhD is 3 calendar years, except for certain schemes including some within the Faculty of Biological Sciences and within Centres for Doctoral Training where the normal period of full-time study is 4 calendar years. Special arrangements may also apply to the split-site programmes and to programmes leading to joint awards with other institutions.

[2] For those programmes which have a standard period of study of four years full-time and the assessment for transfer to a specific degree category of either PhD or MPhil normally takes place towards the end of the second year.

7. A case for an extension to the period of provisional registration would have to be made on academic grounds to the relevant committee. In such cases any period of extension will be no more than six months.

8. The arrangements for formal reports on progress by the supervisor(s) are described in the University Code of Practice for Research Degree Candidatures which is published in the Postgraduate Researcher Handbook which is available at: http://ses.leeds.ac.uk/researchdegreepolicies

Examination and Assessment

9. Candidates must present a thesis[3] (100,000 words maximum) on the subject of their research and satisfy the examiners as specified in Ordinance X and its associated Regulations. The viva will be conducted in English.

10. Except with the special permission[4] of the relevant committee, every candidate is required to submit their thesis for examination for the degree of Doctor of Philosophy by no later than the end of the fourth year after their entry upon an approved course of full-time study.

11. As permitted in Ordinance X (Article 8), when the progress and quality of the candidate's research justify it, the relevant committee is empowered to reduce the required minimum period of study provided that no candidate shall submit for examination of the thesis before the completion of:
    - a total of two calendar years of full-time study
    - a total of three calendar years of part-time study

12. Following examination, the examiners will be asked to make one of the following recommendations
    a) Pass
    b) Pass (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): these corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or minor deficiencies are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received.
    c) Referral (see 16 below)
    d) Recommend award of MPhil[5]: for those candidates who fail to achieve the standard for the award of a PhD but who nevertheless satisfy the criteria for the award of the degree of MPhil.
    e) Recommend award of MPhil[5] (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): These corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or 'minor deficiencies' are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received
    f) Referral for MPhil[1] (see 16 below)
    g) Fail: the candidate has no further opportunity for submission.

13. If the thesis is not considered to be of sufficiently high standard to recommend the award of the degree of Doctor of Philosophy but there is evidence of the potential of a successful PhD or MPhil submission, then on the recommendation of the examiners either:
    a) The candidate will be granted permission to resubmit the work in a revised form for the degree of PhD within a period of eighteen months, on one occasion only and on payment of an additional fee.
    b) The candidate will be granted permission to resubmit the work in a revised form for the degree of MPhil within a period of twelve months, on one occasion only and on payment of an additional fee.

14. Any candidate whose thesis has been referred for the degree of PhD may, subject to approval by the Head of their School, exercise the option of resubmitting a revised thesis for consideration for the award of

[3] Except where an alternative method of submission is stipulated in the Regulations for Ordinance X. In Schools where an alternative form of submission is permitted, specific regulations for the binding and presentation of the work are published.
[4] The 4 year Biological Sciences PhD has a maximum period of study of 48 months
[5] In these circumstances the degree of MPhil may not be awarded with distinction

the degree of Master of Philosophy.

15. The recommendation of the examiners is subject to confirmation by the Graduate Board's Examinations Group which will consider the examiners' report. In the case of joint awards with another institution the recommendation of the Examiners is also subject to confirmation by the other institution.

16. The Learning Outcomes for the degree of Doctor of Philosophy are published below.

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for PhD

1. Learning Outcomes

On completion of the research programme PGRs should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry
- evaluating their own achievement and that of others
- self-direction and effective decision making in complex and unpredictable situations
- independent learning and the ability to work in a way which ensures continuing professional development

3. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions
- make an original contribution to the field

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis[6] and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice
- drawing on a range of perspectives on the area of study
- evaluating and criticising received opinion
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis

[6] or alternative form of thesis

Programme of Study for the degree of Doctor of Philosophy 2021/22 Dual Award

(Leeds University – Lulea Technical University (2020-2024 only: this programme is no longer recruiting)

Horizon 2020: GREENTRIBOS

Entry Requirements

A minimum of a II(i) honours degree, or equivalent qualification

Applicants will normally be required to have obtained a relevant degree of at least equivalent to a UK upper second class honours degree as well as at least 6.5 on IELTS (with no component below 6.0) or an equivalent English language qualification.

1. Candidates may undertake study for the Dual PhD degree under the supervision of a joint supervisory team from the University of Leeds and Lulea Technical University. Supervisors who satisfy the eligibility requirements specified by the relevant committee will be appointed at the commencement of the programme of study. This programme is a collaborative dual PhD offered by the Faculty of Engineering and Physical Sciences.

2. The requirements for the degree, including periods of study and examination requirements are set out in Ordinance X and its associated regulations[1].

3. All candidates for the degree of PhD are expected to undertake appropriate generic training. Candidates may be required to undertake some elements of advanced study and complete written examinations satisfactorily before proceeding to the submission of a thesis.

Dual PhD Candidatures

Full-time

The period of study will be up to a maximum of four years and the method of study will be full-time. The Maximum Time Limit for submission of the thesis is four years. The postgraduate researcher will spend between 1 and 2 years at the University of Leeds as set out in the programme of study for this arrangement.

Progress and Monitoring

4. Candidates will in the first instance be accepted either as a provisional candidate for the degree of PhD. After the initial period of provisional registration, candidates are subject to the process whereby they are formally assessed[2] and, if successful in the assessment, are transferred to the specific degree category of PhD or MPhil.

5. Full-time candidates must undergo assessment by no later than 12 months of study.

6. The decision to transfer will be based on the submission of appropriate material for assessment and all Postgraduate Researchers (PGRs) must undergo an oral examination by an assessment panel which must include at least two independent individuals who have not been involved in the supervisory support of the candidate. The PGR will be interviewed by the assessment panel in the form of a viva voce examination.

[1] The normal standard period of study for a full-time PhD is 3 calendar years, except for certain schemes including some within the Faculty of Biological Sciences and within Centres for Doctoral Training where the normal period of full-time study is 4 calendar years. Special arrangements may also apply to the split-site programmes and to programmes leading to joint awards with other institutions.

[2] For those programmes which have a standard period of study of four years full-time and the assessment for transfer to a specific degree category of either PhD or MPhil normally takes place towards the end of the second year.

7. A case for an extension to the period of provisional registration would have to be made on academic grounds to the relevant committee. In such cases any period of extension will be no more than six months.

8. The arrangements for formal reports on progress by the supervisor(s) are described in the University Code of Practice for Research Degree Candidatures which is published in the Postgraduate Researcher Handbook which is available at: http://ses.leeds.ac.uk/researchdegreepolicies

Examination and Assessment

9. Candidates must present a thesis[3] (100,000 words maximum) on the subject of their research and satisfy the examiners as specified in Ordinance X and its associated Regulations. The viva will also be conducted in English.

10. Except with the special permission[4] of the relevant committee, every candidate is required to submit their thesis for examination for the degree of Doctor of Philosophy by no later than the end of the fourth year after their entry upon an approved course of full-time study.

11. As permitted in Ordinance X (Article 8), when the progress and quality of the candidate's research justify it, the relevant committee is empowered to reduce the required minimum period of study provided that no candidate shall submit for examination of the thesis before the completion of:
    - a total of two calendar years of full-time study
    - a total of three calendar years of part-time study

12. Following examination, the examiners will be asked to make one of the following recommendations
    a) Pass
    b) Pass (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): these corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or minor deficiencies are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received.
    c) Referral (see 16 below)
    d) Recommend award of MPhil[5]: for those candidates who fail to achieve the standard for the award of a PhD but who nevertheless satisfy the criteria for the award of the degree of MPhil.
    e) Recommend award of MPhil[5] (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): These corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or 'minor deficiencies' are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received
    f) Referral for MPhil[1] (see 16 below)
    g) Fail: the candidate has no further opportunity for submission.

13. If the thesis is not considered to be of sufficiently high standard to recommend the award of the degree of Doctor of Philosophy but there is evidence of the potential of a successful PhD or MPhil submission, then on the recommendation of the examiners either:
    a) The candidate will be granted permission to resubmit the work in a revised form for the degree of PhD within a period of eighteen months, on one occasion only and on payment of an additional fee.
    b) The candidate will be granted permission to resubmit the work in a revised form for the degree of MPhil within a period of twelve months, on one occasion only and on payment of an additional fee.

14. Any candidate whose thesis has been referred for the degree of PhD may, subject to approval by the Head of their School, exercise the option of resubmitting a revised thesis for consideration for the award of

[3] Except where an alternative method of submission is stipulated in the Regulations for Ordinance X. In Schools where an alternative form of submission is permitted, specific regulations for the binding and presentation of the work are published.
[4] The 4 year Biological Sciences PhD has a maximum period of study of 48 months
[5] In these circumstances the degree of MPhil may not be awarded with distinction

the degree of Master of Philosophy.

15. The recommendation of the examiners is subject to confirmation by the Graduate Board's Examinations Group which will consider the examiners' report. In the case of joint awards with another institution the recommendation of the Examiners is also subject to confirmation by the other institution.

16. The Learning Outcomes for the degree of Doctor of Philosophy are published below.

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for PhD

1. Learning Outcomes

On completion of the research programme PGRs should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry
- evaluating their own achievement and that of others
- self-direction and effective decision making in complex and unpredictable situations
- independent learning and the ability to work in a way which ensures continuing professional development

3. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions
- make an original contribution to the field

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis[6] and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice
- drawing on a range of perspectives on the area of study
- evaluating and criticising received opinion
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis

[6] or alternative form of thesis

Programme of Study for the degree of Doctor of Philosophy 2021/22 Dual Award

(Leeds University – Nanjing University)

Entry Requirements

A minimum of a II(i) honours degree, or equivalent qualification

Applicants will normally be required to have obtained a relevant degree of at least equivalent to a UK upper second class honours degree as well as at least 6.5 on IELTS (with no component below 6.0) or an equivalent English language qualification. Candidates will have successfully completed a Preliminary Year at Nanjing University.

1. Candidates may undertake study for the Dual PhD degree under the supervision of a joint supervisory team from the University of Leeds and Nanjing University. Supervisors who satisfy the eligibility requirements specified by the relevant committee will be appointed at the commencement of the programme of study. This programme is a collaborative dual PhD offered by the Faculty of Environment.

2. The requirements for the degree, including periods of study and examination requirements are set out in Ordinance X and its associated regulations[1].

3. All candidates for the degree of PhD are expected to undertake appropriate generic training. Candidates may be required to undertake some elements of advanced study and complete written examinations satisfactorily before proceeding to the submission of a thesis.

Dual PhD Candidatures

Full-time

The period of study at Leeds will be three years and the method of study will be full-time. The Maximum Time Limit for submission of the thesis at Leeds is four years. There is a requirement for residences at the University of Leeds as follows:

Year 1: Nanjing University
Year 2: Leeds University (Transfer assessment no later than month 12)
Year 3: Leeds University
Year 4: Overtime Year

Progress and Monitoring

4. Candidates will in the first instance be accepted either as a provisional candidate for the degree of PhD. After the initial period of provisional registration, candidates are subject to the process whereby they are formally assessed[2] and, if successful in the assessment, are transferred to the specific degree category of PhD or MPhil.

5. Full-time candidates must undergo assessment by no later than 12 months of study. Candidates for this Dual PhD will undertake the University of Leeds Transfer Assessment whilst attending University of Nanjing.

6. The decision to transfer will be based on the submission of appropriate material for assessment and all Postgraduate Researchers (PGRs) must undergo an oral examination by an assessment panel which must include at least two independent individuals who have not been involved in the supervisory support of the

[1] The normal standard period of study for a full-time PhD is 3 calendar years, except for certain schemes including some within the Faculty of Biological Sciences and within Centres for Doctoral Training where the normal period of full-time study is 4 calendar years. Special arrangements may also apply to the split-site programmes and to programmes leading to joint awards with other institutions.

[2] For those programmes which have a standard period of study of four years full-time and the assessment for transfer to a specific degree category of either PhD or MPhil normally takes place towards the end of the second year.

candidate. The PGR will be interviewed by the assessment panel in the form of a viva voce examination.

7. A case for an extension to the period of provisional registration would have to be made on academic grounds to the relevant committee. In such cases any period of extension will be no more than six months.

8. The arrangements for formal reports on progress by the supervisor(s) are described in the University Code of Practice for Research Degree Candidatures which is published in the Postgraduate Researcher Handbook which is available at: http://ses.leeds.ac.uk/researchdegreepolicies

Examination and Assessment

9. Candidates must present a thesis[3] (100,000 words maximum) on the subject of their research and satisfy the examiners as specified in Ordinance X and its associated Regulations. There will also be an abstract in Chinese and the viva will be conducted in English.

10. Except with the special permission[4] of the relevant committee, every candidate is required to submit their thesis for examination for the degree of Doctor of Philosophy by no later than:
    - the end of the fifth year after their entry upon an approved course of full-time study and research where the standard period of study is four years

11. As permitted in Ordinance X (Article 8), when the progress and quality of the candidate's research justify it, the relevant committee is empowered to reduce the required minimum period of study provided that no candidate shall submit for examination of the thesis before the completion of:
    - a total of two calendar years of full-time study
    - a total of three calendar years of part-time study
    - a total of three calendar years for candidates studying under Models A and B of the split-site arrangements

12. Following examination, the examiners will be asked to make one of the following recommendations
    a) Pass
    b) Pass (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): these corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or minor deficiencies are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received.
    c) Referral (see 16 below)
    d) Recommend award of MPhil[5]: for those candidates who fail to achieve the standard for the award of a PhD but who nevertheless satisfy the criteria for the award of the degree of MPhil.
    e) Recommend award of MPhil[5] (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): These corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or 'minor deficiencies' are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received
    f) Referral for MPhil[1] (see 16 below)
    g) Fail: the candidate has no further opportunity for submission.

13. If the thesis is not considered to be of sufficiently high standard to recommend the award of the degree of Doctor of Philosophy but there is evidence of the potential of a successful PhD or MPhil submission, then on the recommendation of the examiners either:
    a) The candidate will be granted permission to resubmit the work in a revised form for the degree of PhD within a period of eighteen months, on one occasion only and on payment of an additional fee.

[3] Except where an alternative method of submission is stipulated in the Regulations for Ordinance X. In Schools where an alternative form of submission is permitted, specific regulations for the binding and presentation of the work are published.
[4] The 4 year Biological Sciences PhD has a maximum period of study of 48 months
[5] In these circumstances the degree of MPhil may not be awarded with distinction

b) The candidate will be granted permission to resubmit the work in a revised form for the degree of MPhil within a period of twelve months, on one occasion only and on payment of an additional fee.

14. Any candidate whose thesis has been referred for the degree of PhD may, subject to approval by the Head of their School, exercise the option of resubmitting a revised thesis for consideration for the award of the degree of Master of Philosophy.

15. The recommendation of the examiners is subject to confirmation by the Graduate Board's Examinations Group which will consider the examiners' report. In the case of joint awards with another institution the recommendation of the Examiners is also subject to confirmation by the other institution.

16. The Learning Outcomes for the degree of Doctor of Philosophy are published below.

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for PhD

1. Learning Outcomes

On completion of the research programme PGRs should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry
- evaluating their own achievement and that of others
- self-direction and effective decision making in complex and unpredictable situations
- independent learning and the ability to work in a way which ensures continuing professional development

3. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions
- make an original contribution to the field

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis[6] and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice
- drawing on a range of perspectives on the area of study
- evaluating and criticising received opinion
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis

[6] or alternative form of thesis

Programme of Study for the degree of Doctor of Philosophy 2021/22 Dual Award

(Leeds University – Beijing Jiaotong University)

Entry Requirements

A minimum of a II(i) honours degree, or equivalent qualification

Applicants will normally be required to have obtained a relevant degree of at least equivalent to a UK upper second class honours degree as well as at least 6.5 on IELTS (with no component below 6.0) or an equivalent English language qualification.

1. Candidates may undertake study for the Dual PhD degree under the supervision of a joint supervisory team from the University of Leeds and Beijing Jiaotong University. Supervisors who satisfies the eligibility requirements specified by the relevant committee will be appointed at the commencement of the programme of study. This programme is a collaborative dual PhD offered by the Faculty of Environment.

2. The requirements for the degree, including periods of study and examination requirements are set out in Ordinance X and its associated regulations[1].

3. All candidates for the degree of PhD are expected to undertake appropriate generic training. Candidates may be required to undertake some elements of advanced study and complete written examinations satisfactorily before proceeding to the submission of a thesis.

Dual PhD Candidatures

Full-time

The period of study at Leeds will be four years and the method of study will be full-time with the Leeds PhD commencing in Year 2. The Maximum Time Limit for submission of the thesis at Leeds is four years. There is a requirement for residences at the University of Leeds as follows:

Year 1: Beijing Jiaotong University
Year 2: Beijing Jiaotong University Months 1-6. University of Leeds Months 7-12
Year 3: University of Leeds
Year 4: Beijing Jiaotong University Months 1-6. University of Leeds Months 7-12
Year 5: Overtime Year Beijing Jiaotong University or University of Leeds

Progress and Monitoring

4. Candidates will in the first instance be accepted either as a provisional candidate for the degree of PhD. First Formal Progress will take place by month 7 in year 2 (at the University of Leeds). After the initial period of provisional registration, candidates are subject to the process whereby they are formally assessed[2] and, if successful in the assessment, are transferred to the specific degree category of PhD or MPhil.

5. Full-time candidates must undergo assessment by no later than 24 months of study. Candidates for this Dual PhD will undertake the University of Leeds Transfer Assessment whilst in attendance at the University of Leeds.

6. The decision to transfer will be based on the submission of appropriate material for assessment and all Postgraduate Researchers (PGRs) must undergo an oral examination by an assessment panel which must

[1] The normal standard period of study for a full-time PhD is 3 calendar years, except for certain schemes including some within the Faculty of Biological Sciences and within Centres for Doctoral Training where the normal period of full-time study is 4 calendar years. Special arrangements may also apply to the split-site programmes and to programmes leading to joint awards with other institutions.

[2] For those programmes which have a standard period of study of four years full-time and the assessment for transfer to a specific degree category of either PhD or MPhil normally takes place towards the end of the second year.

include at least two independent individuals who have not been involved in the supervisory support of the candidate. The PGR will be interviewed by the assessment panel in the form of a viva voce examination.

7. A case for an extension to the period of provisional registration would have to be made on academic grounds to the relevant committee. In such cases any period of extension will be no more than six months.

8. The arrangements for formal reports on progress by the supervisor(s) are described in the University Code of Practice for Research Degree Candidatures which is published in the Postgraduate Researcher Handbook which is available at: http://ses.leeds.ac.uk/researchdegreepolicies

Examination and Assessment

9. Candidates must present a thesis[3] (100,000 words maximum) on the subject of their research and satisfy the examiners as specified in Ordinance X and its associated Regulations. There will also be an abstract in Chinese and the viva will be conducted in English.

10. Except with the special permission[4] of the relevant committee, every candidate is required to submit their thesis for examination for the degree of Doctor of Philosophy by no later than:
    - the end of the fifth year after their entry upon an approved course of full-time study and research where the standard period of study is four years

11. As permitted in Ordinance X (Article 8), when the progress and quality of the candidate's research justify it, the relevant committee is empowered to reduce the required minimum period of study provided that no candidate shall submit for examination of the thesis before the completion of:
    - a total of two calendar years of full-time study
    - a total of three calendar years of part-time study
    - a total of three calendar years for candidates studying under Models A and B of the split-site arrangements

12. Following examination, the examiners will be asked to make one of the following recommendations
    a) Pass
    b) Pass (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): these corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or minor deficiencies are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received.
    c) Referral (see 16 below)
    d) Recommend award of MPhil[5]: for those candidates who fail to achieve the standard for the award of a PhD but who nevertheless satisfy the criteria for the award of the degree of MPhil.
    e) Recommend award of MPhil[5] (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): These corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or 'minor deficiencies' are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received
    f) Referral for MPhil[1] (see 16 below)
    g) Fail: the candidate has no further opportunity for submission.

13. If the thesis is not considered to be of sufficiently high standard to recommend the award of the degree of Doctor of Philosophy but there is evidence of the potential of a successful PhD or MPhil submission, then on the recommendation of the examiners either:
    a) The candidate will be granted permission to resubmit the work in a revised form for the degree of PhD within a period of eighteen months, on one occasion only and on payment of an additional fee.

[3] Except where an alternative method of submission is stipulated in the Regulations for Ordinance X. In Schools where an alternative form of submission is permitted, specific regulations for the binding and presentation of the work are published.
[4] The 4 year Biological Sciences PhD has a maximum period of study of 48 months
[5] In these circumstances the degree of MPhil may not be awarded with distinction

b) The candidate will be granted permission to resubmit the work in a revised form for the degree of MPhil within a period of twelve months, on one occasion only and on payment of an additional fee.

14. Any candidate whose thesis has been referred for the degree of PhD may, subject to approval by the Head of their School, exercise the option of resubmitting a revised thesis for consideration for the award of the degree of Master of Philosophy.

15. The recommendation of the examiners is subject to confirmation by the Graduate Board's Examinations Group which will consider the examiners' report. In the case of joint awards with another institution the recommendation of the Examiners is also subject to confirmation by the other institution.

16. The Learning Outcomes for the degree of Doctor of Philosophy are published below.

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for PhD

1. Learning Outcomes

On completion of the research programme PGRs should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry
- evaluating their own achievement and that of others
- self-direction and effective decision making in complex and unpredictable situations
- independent learning and the ability to work in a way which ensures continuing professional development

3. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions
- make an original contribution to the field

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis[6] and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice
- drawing on a range of perspectives on the area of study
- evaluating and criticising received opinion
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis

[6] or alternative form of thesis

Programme of Study for the degree of Doctor of Philosophy 2021/22 Dual Award

(Leeds University – Petroleum University of China (QingDao Campus) (UPC)

Entry Requirements

A minimum of a II(i) honours degree, or equivalent qualification

Applicants will normally be required to have obtained a relevant degree of at least equivalent to a UK upper second class honours degree as well as at least 6.5 on IELTS (with no component below 6.0) or an equivalent English language qualification.

1. Candidates may undertake study for the Dual PhD degree under the supervision of a joint supervisory team from the University of Leeds and Petroleum University of China. Supervisors who satisfy the eligibility requirements specified by the relevant committee will be appointed at the commencement of the programme of study. This programme is a collaborative dual PhD offered by the School of Mechanical Engineering.

2. The requirements for the degree, including periods of study and examination requirements are set out in Ordinance X and its associated regulations.

3. All candidates for the degree of PhD are expected to undertake appropriate generic training. Candidates may be required to undertake some elements of advanced study and complete written examinations satisfactorily before proceeding to the submission of a thesis.

Dual PhD Candidatures

Full-time

The period of study at Leeds will be three years and the method of study will be full-time. The Maximum Time Limit for submission of the thesis at Leeds is four years. There is a requirement for residences at the University of Leeds as follows:

Year 1: University of Leeds (Transfer assessment no later than month 12)
Year 2: University of Leeds
Year 3: Petroleum University of China
Year 4: Overtime Year

Progress and Monitoring

4. Candidates will in the first instance be accepted either as a provisional candidate for the degree of PhD. After the initial period of provisional registration, candidates are subject to the process whereby they are formally assessed and, if successful in the assessment, are transferred to the specific degree category of PhD or MPhil.

5. Full-time candidates must undergo assessment by no later than 12 months of study.

6. The decision to transfer will be based on the submission of appropriate material for assessment and all Postgraduate Researchers (PGRs) must undergo an oral examination by an assessment panel which must include at least two independent individuals who have not been involved in the supervisory support of the candidate. The PGR will be interviewed by the assessment panel in the form of a viva voce examination.

7. A case for an extension to the period of provisional registration would have to be made on academic grounds to the relevant committee. In such cases any period of extension will be no more than six months.

8. The arrangements for formal reports on progress by the supervisor(s) are described in the University Code of Practice for Research Degree Candidatures which is published in the Postgraduate Researcher Handbook which is available at: http://ses.leeds.ac.uk/researchdegreepolicies

Examination and Assessment

9. Candidates must present a thesis[1] (100,000 words maximum) on the subject of their research and satisfy the examiners as specified in Ordinance X and its associated Regulations. There will also be an abstract in Chinese and the viva will be conducted in English.

10. Except with the special permission of the relevant committee, every candidate is required to submit their thesis for examination for the degree of Doctor of Philosophy by no later than:
    - the end of the fourth year after their entry upon the approved course of full-time study and research which includes Model A of the split-site arrangements

11. As permitted in Ordinance X (Article 8), when the progress and quality of the candidate's research justify it, the relevant committee is empowered to reduce the required minimum period of study provided that no candidate shall submit for examination of the thesis before the completion of:
    - a total of two calendar years of full-time study
    - a total of three calendar years of part-time study
    - a total of three calendar years for candidates studying under Models A and B of the split-site arrangements

12. Following examination, the examiners will be asked to make one of the following recommendations
    a) Pass
    b) Pass (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): these corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or minor deficiencies are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received.
    c) Referral (see 16 below)
    d) Recommend award of MPhil[2]: for those candidates who fail to achieve the standard for the award of a PhD but who nevertheless satisfy the criteria for the award of the degree of MPhil.
    e) Recommend award of MPhil[2] (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): These corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or 'minor deficiencies' are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received
    f) Referral for MPhil2[2] (see 16 below)
    g) Fail: the candidate has no further opportunity for submission.

13. If the thesis is not considered to be of sufficiently high standard to recommend the award of the degree of Doctor of Philosophy but there is evidence of the potential of a successful PhD or MPhil submission, then on the recommendation of the examiners either:
    a) The candidate will be granted permission to resubmit the work in a revised form for the degree of PhD within a period of eighteen months, on one occasion only and on payment of an additional fee.
    b) The candidate will be granted permission to resubmit the work in a revised form for the degree of MPhil within a period of twelve months, on one occasion only and on payment of an additional fee.

14. Any candidate whose thesis has been referred for the degree of PhD may, subject to approval by the Head of their School, exercise the option of resubmitting a revised thesis for consideration for the award of the degree of Master of Philosophy.

15. The recommendation of the examiners is subject to confirmation by the Graduate Board's Examinations Group which will consider the examiners' report. In the case of joint awards with another institution the

[1] Except where an alternative method of submission is stipulated in the Regulations for Ordinance X. In Schools where an alternative form of submission is permitted, specific regulations for the binding and presentation of the work are published.
[2] In these circumstances the degree of MPhil may not be awarded with distinction

recommendation of the Examiners is also subject to confirmation by the other institution.

16. The Learning Outcomes for the degree of Doctor of Philosophy are published below.

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for PhD

1. Learning Outcomes

On completion of the research programme PGRs should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry
- evaluating their own achievement and that of others
- self-direction and effective decision making in complex and unpredictable situations
- independent learning and the ability to work in a way which ensures continuing professional development

3. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions
- make an original contribution to the field

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis[3] and performance under oral examination. Assessment will involve the achievement of the candidate in:

[3] or alternative form of thesis

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice
- drawing on a range of perspectives on the area of study
- evaluating and criticising received opinion
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis

Programme of Study for the degree of Doctor of Philosophy 2021/22 Dual Award

(Leeds University – Southwest Jiaotong University (SWJTU)

Entry Requirements

A minimum of a II(i) honours degree, or equivalent qualification

Applicants will normally be required to have obtained a relevant degree of at least equivalent to a UK upper second class honours degree as well as at least 6.5 on IELTS (with no component below 6.0) or an equivalent English language qualification.

1. Candidates may undertake study for the Dual PhD degree under the supervision of a joint supervisory team from the University of Leeds and Southwest Jiaotong University. Supervisors who satisfy the eligibility requirements specified by the relevant committee will be appointed at the commencement of the programme of study. This programme is a collaborative dual PhD offered by the Schools of Mechanical Engineering, Chemical and Process Engineering, Civil Engineering, Computing, and Electronic and Electrical Engineering

2. The requirements for the degree, including periods of study and examination requirements are set out in Ordinance X and its associated regulations.

3. All candidates for the degree of PhD are expected to undertake appropriate generic training. Candidates may be required to undertake some elements of advanced study and complete written examinations satisfactorily before proceeding to the submission of a thesis.

Dual PhD Candidatures

Full-time

The period of study at Leeds will be four years and the method of study will be full-time. The Maximum Time Limit for submission of the thesis at Leeds is five years. There is a requirement for residences at the University of Leeds as follows:

Year 1: Southwest Jiaotong University
Year 2: University of Leeds (Transfer assessment no later than month 18)
Year 3: University of Leeds
Year 4: Southwest Jiaotong University
Year 5: Overtime Year

Progress and Monitoring

4. Candidates will in the first instance be accepted either as a provisional candidate for the degree of PhD. After the initial period of provisional registration, candidates are subject to the process whereby they are formally assessed and, if successful in the assessment, are transferred to the specific degree category of PhD or MPhil.

5. Full-time candidates must undergo assessment by no later than 18 months of study.

6. The decision to transfer will be based on the submission of appropriate material for assessment and all Postgraduate Researchers (PGRs) must undergo an oral examination by an assessment panel which must include at least two independent individuals who have not been involved in the supervisory support of the candidate. The PGR will be interviewed by the assessment panel in the form of a viva voce examination.

7. A case for an extension to the period of provisional registration would have to be made on academic grounds to the relevant committee. In such cases any period of extension will be no more than six months.

8. The arrangements for formal reports on progress by the supervisor(s) are described in the University Code of Practice for Research Degree Candidatures which is published in the Postgraduate Researcher Handbook which is available at: http://ses.leeds.ac.uk/researchdegreepolicies

Examination and Assessment

9. Candidates must present a thesis[1] (100,000 words maximum) on the subject of their research and satisfy the examiners as specified in Ordinance X and its associated Regulations. There will also be an abstract in Chinese and the viva will be conducted in English.

10. Except with the special permission of the relevant committee, every candidate is required to submit their thesis for examination for the degree of Doctor of Philosophy by no later than:
    - the end of the fifth year after their entry upon an approved course of full-time study and research where the standard period of study is four years

11. As permitted in Ordinance X (Article 8), when the progress and quality of the candidate's research justify it, the relevant committee is empowered to reduce the required minimum period of study provided that no candidate shall submit for examination of the thesis before the completion of:
    - a total of two calendar years of full-time study
    - a total of three calendar years of part-time study
    - a total of three calendar years for candidates studying under Models A and B of the split-site arrangements

12. Following examination, the examiners will be asked to make one of the following recommendations
    a) Pass
    b) Pass (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): these corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or minor deficiencies are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received.
    c) Referral (see 16 below)
    d) Recommend award of MPhil[2]: for those candidates who fail to achieve the standard for the award of a PhD but who nevertheless satisfy the criteria for the award of the degree of MPhil.
    e) Recommend award of MPhil[2] (subject to the correction of 'editorial and presentational corrections' or 'minor deficiencies'): These corrections must be made within four or twelve weeks respectively from the date of the oral examination. The internal examiner is responsible for ensuring that 'editorial and presentational corrections' or 'minor deficiencies' are corrected by the candidate. The degree will not be awarded until confirmation that the corrections have been completed is received
    f) Referral for MPhil2[2] (see 16 below)
    g) Fail: the candidate has no further opportunity for submission.

13. If the thesis is not considered to be of sufficiently high standard to recommend the award of the degree of Doctor of Philosophy but there is evidence of the potential of a successful PhD or MPhil submission, then on the recommendation of the examiners either:
    a) The candidate will be granted permission to resubmit the work in a revised form for the degree of PhD within a period of eighteen months, on one occasion only and on payment of an additional fee.
    b) The candidate will be granted permission to resubmit the work in a revised form for the degree of MPhil within a period of twelve months, on one occasion only and on payment of an additional fee.

14. Any candidate whose thesis has been referred for the degree of PhD may, subject to approval by the Head of their School, exercise the option of resubmitting a revised thesis for consideration for the award of the degree of Master of Philosophy.

[1] Except where an alternative method of submission is stipulated in the Regulations for Ordinance X. In Schools where an alternative form of submission is permitted, specific regulations for the binding and presentation of the work are published.
[2] In these circumstances the degree of MPhil may not be awarded with distinction

15. The recommendation of the examiners is subject to confirmation by the Graduate Board's Examinations Group which will consider the examiners' report. In the case of joint awards with another institution the recommendation of the Examiners is also subject to confirmation by the other institution.

16. The Learning Outcomes for the degree of Doctor of Philosophy are published below.

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment for PhD

1. Learning Outcomes

On completion of the research programme PGRs should have shown evidence of being able:

- to discover, interpret and communicate new knowledge through original research and/or scholarship of publishable quality which satisfies peer review
- to present and defend original research outcomes which extend the forefront of a discipline or relevant area of professional/clinical practice
- to demonstrate systematic and extensive knowledge of the subject area and expertise in generic and subject/professional skills
- to take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate
- to independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these
- to critically and creatively evaluate current issues, research and advanced scholarship in the discipline
- to demonstrate systematic knowledge of and be able to critically assess, analyse and engage with the ethical and legal context of their research and any ethical and legal implications of their research.

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities through the research training and research specified for the programme

- the skills necessary for a career as a researcher and/or for employment in a senior and leading capacity in a relevant area of professional/clinical practice or industry
- evaluating their own achievement and that of others
- self-direction and effective decision making in complex and unpredictable situations
- independent learning and the ability to work in a way which ensures continuing professional development

3. Learning Context

This will include the critical analysis of, and decision making in, complex and unpredictable professional and/or clinical situations. The structure of the programme will provide research and/or professional training, breadth and depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to:

- develop to a high level interests and informed opinions
- develop to a high level their design and management of their learning activities
- develop to a high level their communication of their conclusions
- make an original contribution to the field

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement will be assessed by the examination of the candidate's thesis[3] and performance under oral examination. Assessment will involve the achievement of the candidate in:

- evidencing an ability to conduct original and independent broad and in-depth enquiry within the discipline or within different aspects of the area of professional/clinical practice normally leading to published work
- drawing on and/or developing a range of research techniques and methodologies appropriate to enquiries into the discipline/area of professional practice
- demonstrating independent critical ability in the application of breadth and depth of knowledge to complex issues within the discipline or specialist area of professional/clinical practice
- drawing on a range of perspectives on the area of study
- evaluating and criticising received opinion
- making reasoned and well-informed judgements on complex issues within the specialism whilst understanding the limitations on judgements made in the absence of complete data
- the written style and overall presentation of the thesis

[3] or alternative form of thesis

Medicine, Health and Human Disease

1. N:\Administration\Student-Admin\Research\rdscommo\Programmes\5. Four Year structured PhDs\Medicine Health & Human Diseases - 4 year PhD with PG Diploma

[Prog spec 2019 V4_.doc] 4-Year PhD Programme in Medicine, Health and Human Disease

Programme spec which includes the first 'project option':
http://www.cardiovascular.leeds.ac.uk/opportunities/academy-proposals.php

Signed Paul Marshall 2/4/19

PSAG 18/22 (B) Approval - 4-Year PhD Programme in Medicine, Health and Human Disease with Associated PGDip in Medical Research.

To enhance the existing PGR portfolio, broaden opportunities for international PGR study and increase international PGR numbers.
The scheme has been established in LICAMM (2018-19), and provides a model that may be accessed by other Institutes in the School of Medicine.

Taught assessed modules:
2 x compulsory 15 credit modules: Research Methods (MEDP5321M), Paper Criticism (MEDS5020M)
Additional 30 credits to be taken in specialist modules*
A further 60 credits consisting of either two 30 credit mini research investigations, of 12 weeks duration or one 60 credit research project over 24 weeks (e.g. routine data analysis or a systematic review).

Project options available for October 2019 entry:
http://www.cardiovascular.leeds.ac.uk/opportunities/academy-proposals.php
Additional projects will be sourced from within the different disciplines at the time they join the School of Medicine International PhD Academy.

We anticipate the broadening of the International Academy: Cardiovascular and Metabolic Disease to include Medical Research on the St James's University Campus will be attractive to international students rather than applying for individual PhD's with supervisors. Furthermore, the establishment of an International Academy: Medical Research on the St James's University Campus site will create a focal contact point for academic and peer support and advice for international students enhancing the student experience.

The PG Diploma in Medical Research is closely modelled on and will be affiliated with the already established PGDip in Cardiovascular and Metabolic Disease based in LICAMM sharing core taught modules. However, the PG Diploma in Medical Research will provide a new direction and strength on the St James's University Campus for international students by provision of a foundation year during which students will acquire academic and hands-on training to support progression to a PhD research project.

The PG Diploma forms the taught first year of the Medical Research integrated 4-year PhD based at St James's University Hospital Campus. The PG Diploma has been designed as a closed programme and progression from the PG Diploma will be onto the integrated PhD programme in Medical Research; students will be eligible for the award of PG Diploma as an exit award only.

2. **PGDip Cardiovascular and Metabolic Disease**

2017 \\ds.leeds.ac.uk\Shared\Administration\Student-Admin\Research\rdscommo\Programmes\5. Four Year structured PhDs\LICAMM

The PG Diploma sits within the Cardiovascular & Metabolic Medicine integrated 4-year PhD. The PG Diploma has been designed as a closed programme and progression from the PG Diploma will be onto the integrated PhD programme in Cardiovascular & Metabolic Medicine; students will be eligible for the award of PG Diploma as an exit award only.

3. Conclusions

- MHHD was fully approved with a fall-back PGDip in MR
- There appears to be no explicit direction to remove the CMD programme or subsume it within the MHHD progamme
- MR is a fall-back only with no direct recruitment and no candidate should be on this.