

Programme of Study for the degree of Doctor of Philosophy (Biological Sciences 4-year) 2024/25

1. Candidates may undertake study for the degree of PhD in the Faculty of Biological Sciences, under the supervision of a member of staff who satisfies the eligibility requirements specified by the relevant committee. A temporary supervisor will be appointed at the commencement of the programme of study (normally the Programme Directory). The supervisory team will be appointed when the research project is confirmed.
2. The requirements for the degree, including periods of study and examination requirements are set out in Ordinance X and its associated regulations. The standard period of study is 4 years, and the Thesis Submission Deadline is 48 months.
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.
4. Candidates may normally undertake study on a Full-time basis only. Study by Split-site or Distance Learning modes is not available for this Programme.

Programme Outline, Progress and Monitoring

5. The aim of the programme is to train PGRs in state of the art biomedical research in structural cell biology – i.e. to understand the structure and function of biological macromolecules in situ (within cells and/or tissue). The programme structure is designed to attract the most able PGRs and support them in learning novel techniques quickly, whilst giving them sufficient time to tackle a challenging research question via a 3.5 year main thesis project.

Year 1 (outline)

Training:

- Induction training:
FBS Induction and Welcome events, health and safety, Ethics, Academic Integrity Tutorial and Test and online tutorials in research integrity and research ethics.
- Programme specific technique training.
Hands on practical classes in light and electron microscopy training, molecular tools for labelling, proteomics, in cell NMR.
- Transferable skills
Oral presentation, data visualisation, data analysis & fitting, scientific writing
- Life skills
Resilience training, life skills

Laboratory Projects:

- Two 8-10 week, PGR-selected rotation projects in a laboratory from the supervisor pool

Progress monitoring:

- Poster presentation for each rotation, the second at an annual scientific advisory board event
- Within 3 months - completion of training plan. This will be completed between the PGR and the Director initially and will be reviewed with the supervisory team at 6 months and reviewed throughout the research degree in line with the University policy.
- PGRs will be expected to submit a report at the end of each rotation which will be reviewed by the Director and supervisors of that rotation.
- Within 5 months, start to work on thesis project proposal, with feedback given at a project proposal meeting at 6 months
- By 10 months submit First Formal Progress Review

- The progress report is completed on GRAD and PGRs are asked to submit an incorporating Trends Style Review or Grant Proposal. These documents will be discussed at an assessment meeting with an independent assessor.
- The PGRs will not be allocated a supervisor until month 6. They will be required to submit 5 supervision meeting records in the first six months. The first of these will be with the programme Director or nominee (from the academic management team). They will also have two meetings with the supervisors of each of their rotation projects. A further 5 (minimum) supervision meetings with the supervisor team will be held. A minimum of 10 supervision meetings will therefore be held in year 1. Records of all meetings should be logged on GRAD.

Laboratory Project:

- Start of laboratory project after approximately 6 months

Year 2 (outline)

Laboratory Project

Training:

- Ongoing as agreed with the training plan.
- Bespoke entrepreneurship training – alternate years
- Bespoke public engagement training – alternate years
- Contribute to supervision of Cheney summer studentships – research placements for A level students or UG students from disadvantaged backgrounds

Progress Monitoring:

- PGRs will be expected to transfer to full PhD status no later than 18 months. PGRs will be contacted at 14 months and asked to submit their transfer report by 16 months.
- Flash talk and poster presentation at an annual scientific advisory board event
- Supervision meetings – PGRs are expected to meet with their supervisors at least 10 times per year and records of these meetings should be logged on GRAD.
- Annual Progress Review at end of year 2 – PGR submit progress report on GRAD and thesis plan and paper draft.

Year 3 (outline)

Laboratory Project

Training:

- Ongoing as agreed with the training plan.
- Bespoke entrepreneurship training – alternate years
- Bespoke public engagement training – alternate years
- Contribute to supervision of Cheney summer studentships – research placements for A level students or UG students from disadvantaged backgrounds

Progress Monitoring:

- Annual Progress Review at end of year 3 – PGR will submit a progress report on GRAD a paper draft and agree a plan for the writing up and completion of the thesis to enable submission by the end of year 4.
- Flash talk and poster presentation at an annual scientific advisory board event
- Supervision meetings – PGRs are expected to meet with their supervisors at least 10 times per year and records of these meetings should be logged on GRAD.

Year 4 (outline)

Laboratory Project

Training:

- Ongoing as agreed with the training plan.
- Future leaders training – bespoke depending on career plans

Progress Monitoring:

- Annual Progress Review at end of year 4 (if not submitted thesis). PGR submit progress report on GRAD and thesis plan and paper draft.
- Flash talk and poster presentation at an annual scientific advisory board event
- Supervision meetings – PGRs are expected to meet with their supervisors at least 10 times per year and records of these meetings should be logged on GRAD.
- Thesis write-up within 4-year funded period.

6. 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 and, if successful in the assessment, are transferred to the specific degree category of PhD or MPhil.
7. Full-time candidates must undergo assessment by no later than 18 months of study. To allow flexibility to explore the most appropriate format, as needed for academic or other reasons, there are three possible models for a research degree transfer:
 - Fully in person (all parties together on campus for a face-to-face viva)
 - Fully remote (all parties complete the viva via Microsoft Teams or Zoom)
 - Hybrid (some parties are in person whilst others are online).
8. 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.
9. 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.
10. 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>
11. In exceptional circumstances, candidates for the degree of PhD may request to be considered for transfer to registration for the degree of MPhil, subject to approval by the parent school and the relevant committee.
12. In exceptional circumstances, candidates may request to be considered for transfer to registration for the degree of Masters by Research, subject to approval by the parent school and the relevant committee

Examination and Assessment

13. Candidates must present a thesis¹ (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 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
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
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 MPhil²: 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 MPhil² (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 (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.
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.
20. The Learning Outcomes for the degree of Doctor of Philosophy are published below.

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

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 thesis³ 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