

Programme of study for Doctor of Philosophy – Medicine, Health and Human Disease 2023/24

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 Learning (APL) can be requested for taught modules during the first year of the programme.

The programme

This programme offers two different 'pathways', *Medical Research* and *Cardiovascular and Metabolic Disease*. All candidates take the same compulsory module. The pathways are defined by the choice of optional modules.

Year One

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

Month One

Completion of the training plan by the end of month 3

Month Six

First Formal Progress Report

Candidates will take 120 credits of taught modules as follows

(1) All candidates must take the following compulsory module:

MEDS5020M Paper Criticism (15 credits)

(2) Candidates must also take 75 credits made up of *one* research methods module and *two* related project modules as follows.

Candidates on the *Medical Research* pathway will take:

MEDM5161M Methods in Biomedical Research (15 credits)

MEDR5410M Research Project 1 (30 credits)

MEDR5420M Research Project 2 (30 credits)

Candidates on the *Cardiovascular and Metabolic Disease* pathway will take:

either

MEDM5161M Methods in Biomedical Research (15 credits)

or

MEDP5321M Research Methods (15 credits)

together with

CARD 5001M Research Investigation 1 (30 credits)

CARD 5002M Research Investigation 2 (30 credits)

(3) Candidates must also take an 30 credits of specialist modules from one of the following lists, to be agreed with the Programme Manager. 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 set out in [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 *Medical Research* or *Cardiovascular and Metabolic Disease* dependent upon the pathway taken.

Medical Research pathway:

- MEDM5221M Cancer Biology and Molecular Oncology (15 credits)
- MEDM5211M Stem Cell Biology: A Genomics and Systems Biology Approach to Haematopoiesis (15 credits)
- MEDM5131M Animal Models of Disease (15 credits)
- MEDM5121M Immunity and Disease (15 credits)
- BIOL5178M High throughput Technologies (15 credits)
- MEDM5111M Human Molecular genetics (15 credits)
- MEDM5151M Big Data for Rare and Common Disorders (15 credits)
- EPIB5032M Introduction to Genetic Epidemiology (15 credits)
- EPIB5040M Introduction to Health Data Science (15 credits)
- MEDM5141M The Molecular Biology of Cancer (15 credits)
- MEDM5231M Cancer Drug Development (15 credits)

Cardiovascular and Metabolic Disease pathway:

- 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)

Year 2

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 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 is expected to meet with their supervisors at least 10 times per year.

Month Thirty Six
Annual Progress Review

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.

Month Forty Eight
Annual Progress Review (unless thesis submitted)

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 thesis¹ 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