

## **Programme of study for Doctor of Philosophy – Cardiovascular and Metabolic Disease 2023/24**

**Entry Requirements – This programme will no longer recruit after October 2022. 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 thesis<sup>5</sup> 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;

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- 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