School of Physical Sciences| Structured Doctoral Pathways 2024-25

Overview

The School of Physical Sciences' structured doctoral pathway will lead to a PhD in one of the areas of research expertise within the School. The School's structured PhD programme is designed to align with the strategic direction of the University in terms of education, research excellence and translational focus. The programme provides core discipline-specific modules in advanced topics of modern physics centered on core areas of research in the School – including nanoscale physics (semiconductors, optical sensors, lithography and quantum technology), biomedical physics, plasma physics and astrophysics and physics/ STEM education research. For each of these modules, fundamental theory is taught along with relevant research methods and techniques. In addition, the programme also offers a range of modules which focus on students acquiring a broad range of generic and transferable skills – as desired in a modern professional environment. The programme offers flexibility so that each student can select the suite of modules most appropriate for their own specific needs and ambitions.

Selection and Registration

The School of Physical Sciences' assessment continues to be based solely on the student's original research work presented as a written thesis. To facilitate the greatest degree of flexibility for graduate students, a Physics structured master's pathway is also provided. The MSc programme is based on students obtaining 180 credits for the research thesis and 20 credits from appropriate modules – typically 10 credits from "Core Discipline/Specific Skills" modules and 10 credits from "Generic/Transferable Skills" modules.

The PhD programme is based on students obtaining 270 credits for the research thesis plus between 35 and 55 credits from appropriate GTE modules – typically 20 credits from "Core Discipline/Specific Skills" modules and between 15 to 35 credits from "Generic/Transferable Skills" modules.

It is School policy that all students who are assigned to teaching-related responsibilities must complete PS6071 and PS6072 Laboratory tutoring, two 5-credit modules to be taken over at least two years. To best serve the needs of each student, modules can also be taken from the current GTE offering across the faculties in DCU, on both PhD and MSc pathways. Guidelines are issued to students, along with advice from their supervisory panel, to enable them to make suitable choices.

Once approval from the supervisor has been granted, students should register for their approved Faculty GTE modules during the online registration process. However, if you wish to take a non-FSH GTE module you MUST first email the module coordinator listed to check that you are eligible to register for this module, then email science@dcu.ie providing:

- confirmation and proof of approval from module coordinator
- module code and title
- student id number

- qualification code

Progression

The individually-tailored structured pathway for each student should be discussed and agreed in the first instance with their supervisor and progress recorded on the annual PGR2 form.

Induction and Training

Students are encouraged to take advantage of the Graduate Studies Office (GSO) Training Suite for additional training opportunities and opportunities offered by the School as appropriate. All students are required to attend the orientation and induction sessions organized by GSO during year one. GSO communicates details of their training schedule to each student at the beginning of each semester. First-year students are also required to take the Online Research Integrity Training module during year one of their studies. Students are encouraged to take additional training opportunities offered by the School and GSO as appropriate throughout their PhD.

Core Discipline Specific Modules | Years One to Three

- PS6071: Year One Laboratory Tutoring – 5 ECTS
- PS6072: Year Two Laboratory Tutoring – 5 ECTS
- PS522: Microfluidics II – 5 ECTS
- PS523: Applied Spectroscopy II – 5 ECTS
- PS525: Nanotechnology & Surface Analysis – 5 ECTS
- PS520: Computational Physics II – 5 ECTS
- PS524: Plasma Sciences and Technology II – 5 ECTS
- PS528: Advanced Astrophysics I – 5 ECTS
- PS529: Advanced Astrophysics II – 5 ECTS

Core Transferable Skills Modules | Years One to Three

Teaching and Learning Skills

- TP602: Research Ethics – 5 ECTS
- LC600: English for Academic Purposes – 5 ECTS
- NS5055: Qualitative Research Summer School – 5 ECTS
- MT610: Qualitative Research Methods – 5 ECTS

Doctoral Pathway select at least 15 ECTS | Master Pathway select at least 10 ECTS

Non-accredited Training Workshops and Masterclasses

- Graduate Studies Office Orientation Programme
- Research Integrity Online Training Module (Physical and Natural Sciences Stream)
- Postgraduate Tutor and Demonstrating Programme

Graduate Studies Office Training Suite

Approval Date: 01/01/2024