Academic Coordinator: Eilish McLoughlin

Overview

The School of Physical Science’s Physics 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 directions 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 - which includes 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.

Programme Structure

Upon completion of the Physics programme, the student’s original research work presented as a written thesis, is the sole means of assessment for the award of PhD. To facilitate the greatest degree of flexibility for graduate students, a Physics Structured Masters pathway is also provided.

The PhD programme is based on students obtaining 270 credits for the research thesis plus between 35 and 55 credits from appropriate PGR modules - at least 20 credits from “Core - discipline specific modules” and up to 15 credits from "Recommended elective Generic/Transferable skills modules" and 20 credits from "Other elective generic and Transferable Skills".

The MSc programme is based on students obtaining 180 credits for the research thesis plus between 20 and 30 credits from appropriate modules - at least 10 credits from "Core - Discipline Specific Modules", and up to 10 credits from "Recommended elective Generic/Transferable skills modules" and 10 credits from "Other elective generic and Transferable Skills”.

It is also school policy, that all students who are assigned to teaching-related responsibilities must complete GS607FSH ‘Laboratory tutoring’, a 10 credit module to be taken over at least two years. In order to best serve the needs of each individual 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 a properly advised choice.

Students wishing to register for PGR modules should access the Faculty's GTE programme through their portal pages. All other registration issues/queries should be directed to the Registry.
20 (10) credits for PhD/MSc pathway

- **GS607PS:** Laboratory Tutoring (10 ECTS) ★
- **PS518:** Synthesis & Characterisation of Materials (5 ECTS)
- **PS520:** Computational Physics (5 ECTS)
- **PS522:** Microfluidics II (5 ECTS)
- **PS523:** Applied Spectroscopy II (5 ECTS)
- **PS524:** Plasma Science and Technology II (5 ECTS)
- **PS531:** Non-linear dynamics and modelling for scientists II (5 ECTS) **
  ** Subject to approval

★ This module must be taken over at least two years, and should be started in year one.

15 (10) credits for PhD/MSc pathway

- **FSH502:** EXTATIC Foundation Module (5 ECTS)
- **MM532:** Computational Thermo-Fluid Dynamics (7.5 ECTS)
- **MM600:** Labview, Data Acquisition, Analysis and Control (7.5 ECTS)
- **GS604:** Research Ethics (5 ECTS)
- **LC600:** English for Academic Purposes (5 ECTS)
- **GS601:** Intellectual Property & Commercialisation (5 ECTS)
- **GS602/a:** Postgraduate Tutoring Principles & Practice (5 ECTS)
- **NS5055:** Qualitative Research Summer School (5 ECTS)
- **MT610:** Qualitative Research Methods (5 ECTS)
- **GS608CS:** Strategies for Academic Writing (5 ECTS)

Other Elective-Generic and Transferable Skills

Masters Pathway - Select up to 10 ECTS
Doctoral Pathway - Select up to 20 ECTS

Modules may be selected from above listing or from the broader Faculty of Science & Health GTE listing.

All research students are required to attend the orientation and induction programme coordinated by the GSO

Students are also encouraged to engage with centrally offered workshops & seminars which align with their development needs at a given time.