Graduate Research School - PhD Programme
The PhD programme is a structured programme of education that is research-based and includes activities that support the acquisition of a range of relevant specialist and transferrable skills.

At TU Dublin the PhD programme has smart specialisation in:

- Environment, Energy and Health
- Information, Communications and Media Technologies
- New Materials and Devices
- Society, Culture & Enterprise

As a doctoral / PhD student you will complete your specialised research project in interdisciplinary research environments and simultaneously develop a range of discipline specific and transferrable skills and competencies utilizable by industry and the professions. All doctoral / PhD students complete transferrable skills modules during the 4 year programme including Communication Skills, Ethics & Social Understanding, Personal Effectiveness, Team-working & Leadership, Entrepreneurship & Innovation and Professional & Career Management. All doctoral / PhD students also complete discipline specific modules which are tailored to their individual research projects.

**How to Apply**

All interested applicants are invited to complete an Application Form online at [www.dit.ie/phd](http://www.dit.ie/phd).
Doctoral / PhD Students working in the thematic, Environment, Energy and Health, develop evidence-based interventions addressing environmental health problems with a strong focus on real solutions to global challenges. The specific areas of research focus include:

- Assistive Technologies
- Bio-monitoring
- Built Environment
- Energy
- Food Quality & Safety
- Lifestyle & Policy
- Horticulture

The research programme is augmented by cross-cutting activities including Policy and Technology Development. Our students collaborate with Ireland’s Health Service Executive and Dublin City Council, the University of Ulster and the Institute of Public Health in Ireland and also participate in Ireland’s National PhD platforms such as the Agri-Food Graduate Development Programme.
Doctoral / PhD Students working in the thematic, Information, Communication and Media Technologies, specialise in information and communications technology across

- Computing
- Digital Media
- Electrical Engineering
- Electronic Engineering
- Gaming Technology
- Software & Entertainment Applications
- Telecommunications
- Wireless Communication

Our students collaborate nationally and internationally and also participate in Ireland’s National PhD platforms such as the Telecommunication initiative (TGI). Technologies developed by our researchers and students are licensed through Hothouse, our award-winning technology transfer office and include ChiPs, a mobile application for learners of Chinese and TunePal, Shazam and Spotify which have been listed by the Sunday Times in the top 20 cultural apps for the iPhone.
Use any song to create your own custom jam tracks.
New Materials and Devices

Doctoral / PhD Students working in the thematic, New Materials and Devices, address research questions across the boundaries of Biology, Chemistry, Physics and Engineering with a strong focus on technologies. Our students collaborate with Ireland’s National PhD platforms such as the Integrated NanoScience Platform for Ireland. Our research in this area encompasses:

- Biospectroscopy
- Environmental Toxicology
- Holography & Interferometry
- Nanomaterials
- Nonotoxicology
- Radiation Biology
- Smart Coatings
- Therapeutics & Drug Delivery
Doctoral / PhD Students working in the thematic, Society, Culture and Enterprise, pursue research projects across the areas of business, social and public policy and creative arts and media. Our research in this area encompasses:

- Business & Society
- Consumer Studies
- Creative & Performing Arts
- Education Policy
- Enterprise & Entrepreneurship
- Justice & Human Rights
- Social Care

Our students collaborate nationally and internationally and also participate in Ireland’s National PhD platforms such as the Graduate School for Creative Arts & Media (GradCAM). GradCam is Ireland’s leading centre for doctoral research across design, visual and performing arts, media practice and historical and theoretical discourses.
**Focas Research Institute** contributes strongly to the development of self-sustaining research teams in a number of strategic areas, such as bio- and nano-technologies. It underpins postgraduate research, undergraduate project work and undergraduate and postgraduate course curriculum development. The Institute houses state of the art microscopy and spectroscopy equipment in core laboratory spaces and provides administrative and technical support to more than 180 staff and students who work in research centres.

[www.dit.ie/focas](http://www.dit.ie/focas)

**The Environmental Sustainability and Health Institute (ESHI)** is a dedicated research institute for inter-disciplinary environmental health sciences research. It integrates scientific and technical expertise with planning, policy and regulatory capability and relevant industry partners to bridge the science-policy-innovation gap. The overarching mission and vision is to achieve “healthier lives for children, the elderly and vulnerable populations”. The interdisciplinary research teams pursue seven specific areas of research focus: lifestyle & policy, water quality, air quality, radiation & noise, bio-monitoring, energy and food safety & quality.

[www.dit.ie/ehsi](http://www.dit.ie/ehsi)

**The Centre of Applied Science for Health (C.A.S.H.)** incorporates a number of complementary research groups/centres including Centre for Research in Electroanalytical Techniques (CREATE), Microsensors for Clinical Research and Analysis (MiCRA), Centre of Microbial Host Interactions (CMHI), Centre for Pharmaceutical Research and Development (CPRD), Biomedical Research Group, Bioengineering Technology Centre and Nuclear Magnetic Resonance Institute (NMRics) at IT Tallaght. These groups bring expertise from several disciplines including electrochemistry; material science; pharmacology; microbiology and mechanical engineering. The focus of research at CASH is combating difficult and antimicrobial resistant pathogens, biomedical devices and translational molecular cell biology.

The Information, Communications and Entertainment (ICE) Research Institute was established as a virtual institute to bring together complementary strengths in ICT-related research in Content Enabling Digital Technologies (such as Artificial Intelligence, Data Science, Machine Learning, and Digital Humanities/Studies), Distribution and Delivery Platforms (including Next Generation Internet and Internet of Things research), and Engineering Technology. ICT and media technologies are an area of particular industry need and one which TU Dublin partners are well-placed to fulfil. The ICE Research Institute builds on partnerships in two national SFI Research Centres (ADAPT and CONNECT) and in the EI/IDA national Technology Centre, CeADAR – Centre for Applied Data Analytics.

A Research Institute for Arts Humanities and Social Sciences (AHSS) is currently in development. This seeks to support the strong and distinctive provision across TU Dublin in creative arts and media, in digital humanities, in business and social sciences. Its Graduate School of Creative Arts and Media (GradCAM) was established under PRTLI 4 as Ireland’s first centre for doctoral research education across design, visual and performing arts, media practice and their associated critical, historical and theoretical discourses. Research is characterised by a strong practitioner orientation, and fosters multidisciplinary activity and student interactions across disciplines as one of the distinctive features of the new TU.
Ireland’s worldwide reputation for high quality education is built on the solid foundation of commitment to excellence. Ireland is a beautiful island, combining contemporary modern cities with an unspoilt countryside, cityscapes steeped in history and a rich natural habitat. Renowned for friendliness, our safe English-speaking country offers the warmest of welcomes to students from all over the world.

**A friendly, safe country** - And it is not just us saying it! Ireland was voted by Lonely Planet as the world’s friendliest country in 2008 and 2010 and was ranked 12th in the 2009 Global Peace Index. Our hospitable nature coupled with an unrivalled sense of fun ensures living in Ireland is an unforgettable experience. The island’s varied environment is ideal for many outdoor pursuits such as climbing, water sports and all kinds of ball and team sports. It’s easy to explore Europe from an Irish base with low-cost, frequent flights making trips affordable.

**English-speaking country** - Ireland is an English-speaking country with close cultural, economic and educational links to the rest of the English-speaking world, especially the UK — our next door neighbour — and the USA. With 36% of the population under the age of 25, Ireland is one of the most exciting places in the English-speaking world to be a student.

**Internationally recognised qualifications and extensive choice** - Irish higher education institutions and qualifications are recognised world-wide for excellence, delivering world-class innovative learning in many disciplines. Students can choose from an extensive range of courses to meet their needs in highly respected business schools, centres of scientific and technology excellence as well as renowned language, humanities and arts faculties.
Supportive learning environment - Dedicated international offices work closely with academic, administrative and specialist staff to fully support students throughout their time in Ireland. Through these support structures, students receive direct access to information, facilities, services and staff.

Innovative and creative culture - Ireland is a land rich in cultural heritage with a history of world-leading innovation. From the flamboyance of Oscar Wilde to mould-breaking James Joyce, from the pioneering quantum physics of John Bell to Nobel Laureate Ernest Walton, Ireland’s unique innovative and creative culture is an integral part of the Irish experience.

Distinguished graduates - Ireland’s graduates are innovators in their fields, leaders in their communities and ambassadors for excellence all around the world. Qualifications earned and connections made in Ireland deliver a passport to success.

Leading global companies in Ireland - Companies who require a skilled, educated and highly capable workforce to drive their success choose to locate in Ireland. Ireland has welcomed Google, Facebook, Pfizer, Apple, Intel to name just a few — all of whom chose Ireland as their European base.
Antenna & High Frequency Research Centre
The Antenna & High Frequency Research Centre specialises in the analysis, design and measurement of antennas and associated devices for wireless communications and medical applications. With decades of applied research experience it has built an international reputation for innovative futuristic concepts and solutions to contemporary industrial challenges.

w: www.ahfr.dit.ie

Applied Intelligence Research Centre
The Applied Intelligence Research Centre researches the application of computational intelligence technologies to real world problems. The core competencies of the AIRC include machine learning, language technologies, intelligent agents and data analytics.

w: www.comp.dit.ie/aigroup

Business Society & Sustainability Research Centre
The Centre is committed to critical and creative analysis and reflection on the impacts of business on the wider society and the impact of the wider society on business. Central to these impacts is the theme of sustainability understood not only in its ecological sense but also in the sense of the ability of business to maintain ethical and political legitimacy through creating value in the long-term.

w: www.dit.ie/bss

Centre for Social & Educational Research
The Centre for Social and Educational Research is a dynamic and innovative research centre which seeks to improve the quality of life of children, family and society. It aims to impact on social and educational policies and practices through the provision of accurate research data. The centre has a well-established track record of research in five classified research themes: Juvenile Crime and Youth Justice; Media Literacies; Early Childhood Education; Higher Education Policy; Social Care.

w: www.cser.ie

Centre for Research in Engineering Surface Technology
The Centre for Research in Engineering Surface Technology is the only dedicated surface coatings laboratory in Ireland. The major research activities of the group are in the areas of nanotechnology, ceramics for functional applications semiconductors, photocatalysis, self-cleaning probes and anti-bacterial functional coatings.

w: www.crestdit.com
Dublin Energy Lab
The Dublin Energy Lab is a leading energy related research and development laboratory which conducts research across a range of disciplines with key efforts organised into themes of electrical power; energy policy; solar energy; zero emissions buildings; energy demand analysis and forecasting; life cycle assessment. w: www.dit.ie/dublinenergylab/

Graduate School of Creative Arts & Media
GradCAM is a collaborative initiative of national and all-island significance which builds on the expertise of Dublin Institute of Technology, the National College of Art & Design, University of Ulster, and Institute of Art, Design and Technology, Dún Laoghaire. GradCam delivers PhD training and research in a broad spectrum of creative practice including design practice, practice across the arts, creative media content and service development, and the technical, critical, theoretical and historical underpinnings of these disciplines/practices. w: www.gradcam.ie

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Centre for Transcultural Research & Media Practice
The Centre for Transcultural Research and Media Practice offers a distinctive, interdisciplinary postgraduate and research environment, dedicated to scholarly and public understandings of migration and globalization, media and civil society activism, post-conflict/border zones and transcultural identity formations in Ireland and beyond. The Centre promotes the use of ethnographic and documentary modes of practice in social research, utilising new and established media technologies. w: www.ctmp.ie
**Photonics Research Centre**
The Photonics Research Centre undertakes research in a number of areas of photonics with a particular emphasis on optical sensing. Its primary research areas are: Fiber Optic Sensors and its Applications; Fiber Optic Systems for Sensing Applications; Smart Fiber Structures; Liquid crystal filters for sensing applications; Modelling of Optical Waveguides; Photonic Integrated Circuits.

**Industrial Engineering Optics Centre**
The Industrial Engineering Optics Centre specialises in holographic and interferometric techniques and has developed novel technologies with applications in product authentication, sensing, vibration measurement and optical device fabrication.

**Radiation & Environmental Science Centre**
The centre specialises in radiation biology and environmental toxicology. Non-targeted (non-DNA) effects such as bystander effects, genomic instability and adaptive responses are the main focus. Translational research and the use of vibrational spectroscopy as a diagnostic tool for cancer and for the identification of biochemical markers are also investigated.

**Bioengineering Technology Centre**
The Bioengineering Technology Centre is currently engaged in projects in the area of Orthopaedics, Biomechanics, Design, FEA and CFD analysis and the application of Rapid Prototyping in the field of Medicine.

**Inorganic Pharma & Biomimetic Research Centre**
Researchers at the Inorganic Pharma and Biomimetic Research Centre synthetise and characterise novel materials for applications as diverse as pharmaceuticals, drug delivery, molecular recognition, biomimetic chemistry and supramolecular chemistry.

**Nanolab**
The Nanolab research centre has unparalleled expertise in state of the art nano material characterisation and the analysis of the interaction of Nanomaterials with biological systems. Its researchers explore standards and methods for the characterisation of nanomaterials including the toxicity and biocompatibility of a variety of nanomaterials such as carbonaceous, polymeric, metallic and composite nano material systems.
**Biopharma and Neutraceutical Research Centre**
The Biopharma and Neutraceutical Research team provide a coordinated research and development base for the generation of novel and improved antimicrobial agents for application in the pharmaceutical and neutraceutical industries.

[w]: www.it-tallaght.ie/research_centres_bpn

**Centre for Pharmaceutical Research and Development**
The central objectives Centre for Pharmaceutical Research and Development include the development of novel therapeutic agents with defined pharmaceutical properties and the elucidation of the biochemical processes central to control of specific diseases. The research team has contributed to several strategically important research areas including development and application of agents with antimicrobial and anti-cancer activity with a view to commercialisation and product development.

[w]: www.it-tallaght.ie/research_innovation_cprd

**Centre for Research in Electroanalytical Technologies**
The Centre for Research in Electroanalytical Technologies is currently working on research programmes including nanoassembly and nanoparticle synthesis using modern electrochemical and surface based techniques for the study of fundamental material properties, micro and nanosensor technology and electrocatalytic materials including design, isolation and purification of redox active materials.

[w]: www.it-tallaght.ie/create

**Centre for Microbial Host Interactions**
The objective of the Centre for Microbial Host Interactions is to explore the interactions between pathogenic bacteria and human cells in order to better understand how they contribute to disease and in order to develop better antimicrobial therapies. The current disease model is the bacterial colonisation of the cystic fibrosis (CF) lung.

[w]: www.it-tallaght.ie/research_innovation_cmhi
Microsensors for Clinical Research and Analysis
The core objective of Microsensors for Clinical Research and Analysis (MiCRA) is the development of next generation sensor technologies and platforms in collaboration with industrial partners. Integrated fluidics and biosensors are designed in house for human, veterinary diagnostics and environmental (e.g. air and water testing) applications.

w: www.micra.ie

National Centre for Franco-Irish Studies
The National Centre for Franco-Irish studies (NCFIS) was established in 2003 and current research deals with the treatment of the Great War in certain French novelists, with particular reference to Louis-Ferdinand Celine while a project entitled “A City Rooted out of Time” deals with poets as diverse as Charles Baudelaire, T.S. Eliot, Fernando Pessoa and Peter Stirr.

w: www.it-tallaght.ie/ncfis

Nuclear Magnetic Resonance Institute Research Centre (NMRics)
Research at the Nuclear Magnetic Resonance Institute Research Centre is focussed in a small number of closely linked strategic research areas including Supramolecular Chemistry, their design and synthesis and the related area of sensors, Pharmaceutical R&D and Biotechnology, particularly peptides.

w: www.it-tallaght.ie/nmrics