Programme Information

Professional Diploma in Cognitive Robotics

NFQ Level 9
One Year part time
Blended Learning

Professional Diploma in Cognitive Robotics

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Quick View:

Semester 1	Semester 2	Start Date	Application Deadline	Induction	Weekly Timetable	Fee		Deposit*
Sept. – Dec.	Jan. - May	TBD	10 Aug 22	One/two days 1 week prior to start date	Online 4hrs plus 4hrs Lab Practice and tutorials. 9 hrs self-study/projects.	**EU** €3,500 **Non-EU** €4,750	= =	**EU** = €250 **Non-EU** = €600

*The deposit is required once an offer is issued to secure a place.

Course Introduction:

Cognitive Robotics will introduce you to the foundational principles of robotic systems and the Machine Learning fundamentals that underpin those systems. You will rapidly advance your knowledge of the state of the art in robot control, locomotion, perception and intervention. You will learn about robotic platforms, vehicles & sensors, robot control strategies, robot vision & perception, sensor fusion, robot manipulation as well as human machine interfaces and coordinated strategies for complex robotic challenges that necessitate a 'system of systems' approach to design.

Learning Outcomes:

On successful completion of this programme, the graduate will be able to:
- Design, develop and apply robotics techniques, platforms and services to products and processes within industry
- Utilise robotic control algorithms and robotic perception systems in the development of new products and processes
- Utilise knowledge base to understand a robotic system problem and determine the appropriate pathway to develop a solution

Entry Requirements:

Applicants are normally expected to hold a primary honours degree in a cognate (related) discipline, (minimum H2.2), or equivalent and have at least 5 years of relevant industrial experience.

Alternative Entry Route:

In accordance with the University's policy on the Recognition of Prior Learning, candidates who do not meet the minimum entry criteria may be considered. These candidates will be required to submit a portfolio to demonstrate their technical and/or management experience. Alternative Entry Route applicants will be required to undertake an interview and satisfy the course admission team that they have the experience, motivation and ability to complete and benefit from this course

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How will students be assessed?

Assessment consists of continuous online quizzes to assess the students' progress throughout. Group projects and E-tivities will be used to assess the student's overall comprehension of the course material. Knowledge and comprehension assessed through a written end-of-term examination

Course structure:

Type	Delivery Method	Duration	Lectures Per Week	Lab Practice Per Week	Private Study (individual & group projects)	Weekly Time Commitment
Flexible	Online*	1 Year- Over 2 Semesters	2hrs	2hrs	9hrs	15hrs

* All lectures will be recorded. Live sessions will be at a time suitable to the student group. Online content should be accessed daily. The course will be delivered online via the University of Limerick Virtual Learning Environment.

Programme Content:

Semester 1 September– December 2022	**Introduction to Scientific Computing for AI.** This module prepares students to take a range of Artificial Intelligence related modules by introducing the associated scientific computing, programming language and host platforms. **Modern Robotics**. Modern Robotics teaches the application of core linear algebra concepts in modelling and the simulation and control of modern robotics systems deployed in various environments.
Semester 2 January– May 2023	**Robotic Planning, Mapping & Manipulation.** This is an Introduction to robot manipulation systems, control approaches and task planning for mobile robots with intervention capabilities. **Robotic Sensing and Perception.** In this module you will learn about robotic sensor types and processing methods available for intelligent mobile robotic scene interpretation. Introducing students to the fundamentals of sensor fusion and use within autonomous systems.
Both Semesters:	**Future Focused Professional Portfolio 1&2:** Participants will be guided in the organisation of a series of future facing industry relevant talks on the technology and the future of markets and society more broadly. Participants will work collaboratively to identify key trends impacting their field/discipline and create and use their professional network to reach out to key thought leaders in this space. This module provides learners with an opportunity to demonstrate independent and self-determined learning through the creation of their individual portfolio. The portfolio includes a range of activities that enable the learner to demonstrate: the development of their reflective practice, evidence-based excellence in applying discipline specific knowledge in different contexts, and leading discussion on the future of their respective discipline

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Course Director Profile:

Dr. Gerard Dooly is a Co-Director of the Centre for Robotics & Intelligent Systems (CRIS) at UL and has worked in field robotics at UL for over 10 years. His research interests include real-time 3D reconstruction, optical fibre sensors, structural health monitoring, multirotor UAVs, hybrid UAVs and underwater robotics. He is focused on the design and development of robotics and is engaged in research projects across a number of European and nationally funded programmes. Some of his recent activities includes robotics for incident response, archaeological survey and Inspection services.

Dr. Gerard Dooly

How to apply:

Simply click on the link below and click "Apply". You can review the full application form without submitting and save your application as you go along.

Click here to Apply

Frequently Asked Questions

1. *What would be a good feeder course for a student to go on this programme?*

This programme may be of interest to candidates with a background in Engineering *(electronic, electrical, mechanical, computer etc.).*

2. *Who is this course for?*

The programme will be of interest to recent ICT, scientific or Engineering graduates who wish to further specialise in the field of robotics or professionally employed persons looking to upskill in robotics and robotic systems.

3. *What types of roles would candidates, considering this course, have held?*

Engineering, ICT or other related discipline

4. *What types of roles will candidates be qualified for after taking this course?*

Engineering, Robotics, Machine Vision

5. *Is there a list of companies & industries that are the ideal fit?*

Johnson& Johnson, Analog Devices, Collins Aerospace