



OĒ Gaillimh
NUI Galway

FOCUSSED LEARNING. ENDLESS POSSIBILITIES.

SPECIALIST DIPLOMA IN AUTOMATION & CONTROL



- + Part-time
- + Flexible
- + Online
- + Connected
- + Career
- + Opportunity

REASONS TO STUDY THIS COURSE:

- This course is suitable for those who want to upskill in the areas of engineering materials, manufacturing processes and electronic manufacturing technologies.
- It addresses the critical shortage in skills in the areas of automation and machine control, supply chain management and manufacturing processes.
- It was developed in consultation with industries who continue to have input into both development and delivery.

COURSE FACTS

ECTS: 30

NFQ Level: 8

Duration:

1 year, part-time

Mode of study:

Online Learning

Fees: See course website

www.nuigalway.ie/adult-learning/courses/science-&-technology/

Start date: September

CONTACT

Course Administrator

+ 353 (0)91 494060

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APPLY ONLINE:

www.nuigalway.ie/adultlearning/how-to-apply

Specialist Diploma in AUTOMATION & CONTROL

YOUR PART-TIME COURSE:

This course aims to develop knowledge around the issues and opportunities associated with automation and control technology and to improve skills in the areas of engineering materials including metals, ceramics, polymers and composite materials; manufacturing processes, both traditional and recently developed; and electronic manufacturing technologies. Students gain an understanding of industrial control systems, robotics and automated production lines.

YOUR MODULES:

This Specialist Diploma consists of four inter-related taught modules and a project, giving a total of 30 ECTS. The four taught modules are:

- Machine Design
- Automation 1
- Manufacturing Technology
- Automation 2
- Project.

The project topic is chosen by the participant in consultation with their supervisor and will be company based where possible.

ENTRY REQUIREMENTS:

Applicants should have completed a Diploma at NFQ Level 7 of 90 ECTS minimum, in a Science, Engineering or Technical area, or otherwise prove that they satisfy the prerequisites of each of the modules as listed in the course outline section. An International English Language Testing System (IELTS)/ TOEFL certificate is required if English is not your first language to indicate your competency in written and spoken English.

DELIVERY & ASSESSMENT:

The course is delivered using an online learning approach with Saturday workshops (approximately 10 hours per module). The delivery model also includes self-directed learning elements. Students complete a project over the academic year which requires them to apply their knowledge to real world scenarios.

CAREER OPPORTUNITIES & FURTHER STUDY:

Graduates find employment in well-established industries which are embedded in the local economy, providing a basis for sustainable long-term employment and career advancement. Graduates can opt to progress to the BSc in Science & Technology Studies (NFQ level 8) with credit for their studies.





MODULES

MACHINE DESIGN

This module introduces students to the theory behind simple and compound machines, reliability of a system, gearing and gear ratio theory, spring decision and design criteria. Machine Design also introduces the students to some 3D printing for assembly. This helps introduce and develop the students' 3D modelling skills.

AUTOMATION 1

Learners are introduced to automation and automated systems. Items such as sensors, motors, pneumatics, Programmable Logic Controller (PLC) programming and robotics are discussed. Material handling and storage are also considered. Automation is used extensively in industry and the module addresses how these systems are used in industry. For example, quality control, increased throughput and increasing competitive advantage.

AUTOMATION 2

The Automation 2 module introduces material transport systems, outlines the use of storage systems, presents an overview of automated manufacturing, examines automated assembly systems, investigates the use of flexible manufacturing systems, focuses on the use made of inspection technologies and considers how product design is generally carried out in modern production environments by means of computer-aided design and computer-aided manufacturing systems, operating in combination.

MANUFACTURING TECHNOLOGY

The Manufacturing Technology module introduces engineering materials including metals, ceramics, polymers and composite materials, manufacturing processes, both traditional and recently developed and electronic manufacturing technologies.

AUTOMATION AND CONTROL PROJECT

In this project the learner will complete a literature review on a topic that is relevant to both the course and to their own work where possible. The learner will develop a project plan and execute a practical research project using well established research methodology methods. Students will be allocated an academic supervisor who will work with them to offer guidance and ensure the successful completion of the project. This module will enable the learner to develop their project management skills, team-working and communication skills.

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National University of Ireland, Galway
Ollscoil na hÉireann, Gaillimh