NUI Galway
OÉ Gaillimh

FOCUSSED LEARNING. ENDLESS POSSIBILITIES.

SPECIALIST DIPLOMA IN MEDICAL DEVICE SCIENCE

CELEBRATING 50 YEARS

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

REASONS TO STUDY THIS COURSE:

- The medical devices sector is flourishing, nationally and globally, and offers sustainable career opportunity and advancement.
- Students will develop specialist knowledge of the medical devices sector and technical knowledge and skills in design, development and manufacture of medical devices.
- You will understand the science and engineering behind medical devices, and study human anatomy, physiology and disease states which can be monitored or improved by medical devices.
- You will also appreciate best practice, industry standards, policies and regulations within the medical device sector.

COURSE FACTS

ECTS: 30

NFQ Level: 8

Duration:
1 year, part-time

Mode of study:
Blended Learning

Fees:
EU: €1,960 **Non-EU:** €2,460

Start date: September

CONTACT

Course Administrator
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APPLY ONLINE:
www.nuigalway.ie/adultlearning/how-to-apply

Specialist Diploma in

MEDICAL DEVICE SCIENCE

YOUR PART-TIME COURSE:

This one-year, part-time specialist diploma aims to develop specialist knowledge of the medical devices sector and to develop relevant technical and soft skills. The qualification is a minor award at degree level. This course is of benefit to people who require upskilling for career advancement within the medical devices sector, or for those looking for focused re-skilling with a view to a career change. On completion of the course, participants will have highly marketable, up-to-date knowledge and skills relevant to the medical devices sector. Students practice, and are assessed on, a range of technical and transferable skills relevant to meeting future skills needs in the workforce.

YOUR MODULES:

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

- Human Anatomy & Physiology
- Biocompatibility & Device Design
- Mechanics of Solids
- Medical Device Science.
- Product & Process Development
- Regulatory Compliance

ENTRY REQUIREMENTS:

Applicants should have completed the Diploma in Science & Technology Studies or a related level 7 course. An International English Language Testing System (IELTS) or TOEFL certificate is required if English is not your first language.

DELIVERY & ASSESSMENT:

The course is delivered using a blended learning approach with Saturday workshops (approximately 10 hours per module). The delivery model also includes self-directed learning elements. Innovative and authentic assessment methods are used throughout the course which will enable learners to demonstrate capabilities and competencies as well as academic knowledge.

CAREER OPPORTUNITIES & FURTHER STUDY:

Graduates of this course already working in the industry will be well placed to move into management roles. Graduates from a science or engineering background can transfer existing skills and develop specialist knowledge in order to move into the medical devices sector. Graduates can opt to progress to the BSc in Science & Technology Studies (NFQ level 8) with credit for their studies.

MODULES

HUMAN ANATOMY & PHYSIOLOGY

This module introduces the student to the structure of a body system and then discusses its function or operation. This module will give the student an understanding of the human body, focusing in particular on its form (Anatomy) and function (Physiology). Anatomy is the science of body structures and their relationship to each other. Physiology is the study of the function of each of these anatomical structures, in essence how each body part works. This module integrates the anatomy and physiology of cells, tissues, organs, the systems of the human body and the mechanisms of homeostasis. The human body is examined on many levels (molecular, cellular, tissue, organ, system and organism).

MECHANICS OF SOLIDS

This module in Mechanics of Solids gives the students the opportunity to learn a basic engineering subject and, at the same time, develop their analytical and problem-solving abilities. Considerable emphasis is placed on how to analyse the behaviour of mechanical and structural systems under external loading. Most of the examples and problems require the students to do some original, critical thinking.

MEDICAL DEVICE SCIENCE

In this module learners will evaluate the practical application of materials, mechanics and stress analysis theory in the design of medical devices. The module addresses the clinical need, function and design requirements of the most widely used orthopaedic and vascular medical devices. Learners examine the effects of mechanical loading (static, fatigue, wear) and environment on medical devices.

BIOCOMPATIBILITY & DEVICE DESIGN

This module offers a comprehensive review of all the major biomaterials. It provides a general introduction to the different classes of materials that are used in biomedical applications. It identifies ideal biomaterials for different applications, and characterises biomaterials in terms of their structural, physical and biological attributes.

PRODUCT & PROCESS DEVELOPMENT

The aim of this module is to give students a broad overview of some of the methods and techniques that are used to develop new products. In addition, it will assist in developing a number of Professional Transferable Skills (PTS), such as critical thinking, problem solving, and written communication.

REGULATORY COMPLIANCE

This module presents an overview of the regulations governing the development, manufacture and marketing of drugs and medical devices, inclusive of in vitro diagnostic devices. It provides an overview appreciation of the regulatory framework pertaining to the pharmaceutical and medical device industries. The module will equip participants with the concepts necessary to enable them work effectively with regulatory affairs personnel, and will act as a reference guide to help participants identify and source specific regulations.

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National University of Ireland, Galway
Ollscoil na hÉireann, Gaillimh