



NUI Galway
OÉ Gaillimh

MSc Biomedical Science

NUI Galway has established a national and international reputation in the field of Biomedical Science. Students on the MSc in Biomedical Science benefit from access to some of Ireland's leading researchers in this area, and from the University's location within one of the top five global hubs for biomedical science and technology.

The programme complements and builds on existing undergraduate courses in Biotechnology, Biomedical Science, Biomedical Engineering at NUI Galway, as well as other honours degrees in the various Science disciplines. The objective of the course is to introduce students to an interdisciplinary approach to research, which utilises technologies and skills from a wide spectrum of scientific, engineering and clinical disciplines to address fundamental questions originating in biology and medicine.

Key Features

- Clear, concise understanding of the principles of the biomedical science field
- Excellent practical experience in a leading research laboratory
- Excellent employment and career opportunities in biomedical sciences industries, laboratory services, and academic research settings

Employment & career opportunities

Graduates of the MSc in Biomedical Science have gone on to work within the medical technology and pharmaceutical industries, hospitals and academia. Galway is a global hub for the medical device industry so NUI Galway graduates are well-placed to avail of employment opportunities with a wide range of multi-national and indigenous medical technologies organisations. Recent graduates have found employment with a range of companies, including Boston Scientific, Regeneron, Abbott, Allergan, and Pfizer.

Course Director: Prof Terry Smith

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<http://www.nuigalway.ie/courses/taught-postgraduate-courses/biomedical-science.html>

Eligibility, Application & Selection Process

Course level: Level 9

Duration: 1 year, full-time

Entry requirements:

- Candidates must hold at least a Second Class Honours Level 8 (or equivalent international qualification) primary degree in Science or Engineering. Candidates with a suitable primary degree without honours and three years relevant and appropriate practical experience may also be considered.
- Applicants whose first language is not English must provide evidence of English language proficiency of IELTS 6 (no band less than 5.5 in each element) or equivalent.

Places available: 20

Fees: Current fees are €6,815 (EU) €13,750 (non-EU), and are likely to remain at this level.

Applying:

- Applications are made online via the Postgraduate Applications Centre (www.pac.ie/nuigalway).
- The following documentation must be supplied:
 - A Curriculum Vitae (CV)
 - A personal statement of approximately 600 words explaining why the applicant wishes to undertake the MSc Biomedical Science programme and how the programme fits into their career objectives
 - Evidence of English language competency is required for applicants whose native language is not English
 - A copy of your Birth certificate and/or passport.
 - Academic transcripts

PAC Code: GYS03

Closing date: Closing date for receipt of completed applications and all supplementary documents is June 5th.

Candidate selection: Selection of candidates is based on examination record, previous relevant experience, personal statement and performance at interview. Short-listed candidates are invited for interview in June/July.



Student Testimonial

Jennifer Stratton

MSc Biomedical Science graduate currently employed as research associate with Shannon Applied Biotechnology Centre (ABC), IT Tralee.

"The MSc in Biomedical Science is an exciting and dynamic course. The integrated modules are diverse and of practical use. The modular layout of the course allowed me to choose a direction that I had the most interest in, which made it thoroughly enjoyable. Tissue Engineering, Pharmacology, Molecular Medicine and Biomaterials Science in particular, provided a deeper understanding of the new generation of techniques and therapeutics being implemented by researchers and doctors.

We often received presentations from various companies and representatives from relevant industries, which also helps to bridge the gap from academia to industry. I gained a lot from each distinct school we were a part of, as a multi-disciplinary programme. The support staff surrounding this course were incredibly helpful, approachable and engaging, as were each of the lecturers. I made some great friends over the course of the year and made connections that would otherwise not have been possible. I would definitely choose it all over again."

Programme Outline

Semester 1 Modules:

Materials Science & Biomaterials

This module addresses the fundamental properties and applications of synthetic and natural biomaterials used in contact with biological systems.

Introduction to Business

This module focuses on the fundamental concepts of marketing, management and accountancy and their application in Irish and international business situations. Teams of students develop a business plan for a start-up biomedical science enterprise.

Tissue Engineering

This module integrates the principles and methods of engineering and life sciences towards the fundamental understanding of structure-function relationships in normal and pathological mammalian tissues.

Cell & Molecular Biology: Advanced Technologies

This module outlines the fundamentals of cell and molecular biology.

Radiation & Medical Physics

The module reviews the basic nuclear physics alluding to radiation applications in industry and its biological interactions.

Fundamental Concepts in Pharmacology

This module introduces students to fundamental pharmacological concepts of pharmacodynamics and pharmacokinetics of drug interactions in the body.

Human Body Structure

This module develops knowledge of human anatomy in the context of biomedical science.

Semester 2 Modules:

Regulatory Compliance in Healthcare Manufacturing

This module focuses on the validatory requirements within the bio-, pharmaceutical and chemical industries.

Molecular Medicine

This module outlines the molecular mechanisms underlying diseases including cancer, diabetes, immuno-deficient and neurodegenerative disorders.

Applied Biomedical Sciences

Over the course of semesters 1 and 2, experts will teach methodologies fundamental to biomedical science. Topics may include cell culture, cell and molecular biology, scanning electron microscopy, mass spectrometry. Industry experts and visits outline recent advancements in biomedical applications and applications.

Literature Analysis & Presentation Skills in Biomedical Science

This module teaches the student how to critically analyse scientific literature, and to present their analysis clearly and concisely. Students will also learn how to conduct literature searches, and how to write a technical report or literature review about biomedical science and research topics.

Advanced Tissue Engineering

This module allows for increased involvement in the field through project work and the planning and completion of laboratory experiments.

Protein Technology

Topics include industrial scale-up of protein production, proteomics and glycobiology.

Semester 3

Research Project

A 4-month laboratory project with an academic research team on a subject related to biomedical science.

*Please note that the curriculum information is subject to change from year to year.