



**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:** 18

**Fees:** Current fees are €6,815 (EU) €13,750 (non-EU), and are likely to remain at this level for 2016-2017.

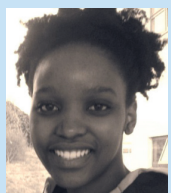
### Applying:

- Applications are made online via the Postgraduate Applications Centre ([www.pac.ie/nuigalway](http://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

### Nala Shologu

MSc Biomedical Science graduate currently pursuing a PhD in the Discipline of Anaesthesia and Lung Biology Group, NUI Galway.

*"I found the Biomedical Science course particularly interesting and exciting because it demonstrated how research and scientific technological developments can impact on biological systems, disease diagnostics and novel therapeutics. Integrated modules such as tissue engineering and biomaterial science provided immense insight into the use of gene therapy, stem cells and materials engineering approaches to critical problems in modern medicine. I really liked the flexibility of the modular structure as it allowed me to specialise in the areas of investigative biomedical science that interested me. In addition to building fond memories with my classmate, I was privileged in having the opportunity to build contacts with other passionate scientist from various backgrounds."*

## Programme Outline & Structure

90 ECTS  
Taught  
Masters

60 ECTS  
Taught  
Modules

30 ECTS  
Biomedical Science  
Research Project

### Core Modules:

#### Research Project

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

#### 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.

#### Materials, Science & Biomaterials

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

#### 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.

#### 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.

#### Scientific Writing

This module aims to provide students with an in-depth understanding of the process of scientific publication (writing, reviewing articles and responding to journal editors).

#### Cell & Molecular Biology: Advanced Technologies (Core for non-biologists, Optional for biologists)

This module outlines the fundamentals of cell and molecular biology.

#### Radiation & Medical Physics

#### (Core for biologists, Optional for non-biologists)

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

### Optional Modules:

#### 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.

#### Introduction to Bioinformatics

This module provides biology students with good foundation knowledge of bioinformatics and enables them to perform basic bioinformatic tasks. Ultimately students will develop an appreciation how bioinformatic tools are fundamental to modern medicine.

#### Protein Technology

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

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