



University College Dublin  
Ireland's Global University

## MSc Biotherapeutics (1 Year Full Time)

The MSc in Biotherapeutics educates students on the practical uses of molecular advances in the discovery of protein and other biomolecular drug candidates and their development into biotherapeutics. It will provide students with a comprehensive understanding of the development of biotherapeutics, beginning with pre-clinical modelling and target identification together with antibody engineering, biochemical and biophysical characterisation, and development issues for bioprocessing. Systems biology of biotechnological processes and approaches to the analysis of proteomics-

based discovery data will be covered in detail together with mathematical modelling, bioinformatics analysis and data integration strategies. Regulatory issues and innovation and commercialisation strategies will also be covered. Mammalian cell culture and bioprocess laboratory structure will be comprehensively covered in addition to novel approaches to therapeutic development. A practical drug discovery laboratory project will form a significant component of the experience of how candidates are identified and brought through the development pipeline.

### Why study at UCD?



#### Tradition

Established 1854, with 160 years of teaching & research excellence



#### Global profile

UCD is ranked in the top 1% of higher education institutions worldwide



#### Global community

Over 6,000 international students from over 120 countries study at UCD



#### Global careers

Degrees with high employability; dedicated careers support; 1 year stay-back visa



#### Safety

Modern parkland campus with 24 hour security, minutes from Dublin city centre

### Key Fact

This programme is the culmination of close collaboration between the UCD School of Biomolecular and Biomedical Science, Systems Biology Ireland and the Biopharmaceutical industry in Ireland and across the world.

## Course Content and Structure

90 credits  
taught masters

45 credits  
taught modules

45 credits  
project

### The structure of the programme is as follows:

#### Semester 1

- Biotherapeutic Discovery and Development I
- Professional Career Development
- Recombinant DNA Technology
- Business of Biotechnology & Science
- Biomedical Diagnostics
- High Content Screening Microscopy
- Pharmacology & Drug Development

#### Semesters 2 & 3

- Biotherapeutic Discovery and Development II
- Systems Biology in Drug Development
- Professional Career Development
- Bioprocessing Laboratory
- Emerging Issues in Biotechnology
- Regulatory Affairs
- Microbial & Animal Cell Products
- Project – Biotherapeutic Development

## Career Opportunities

This advanced graduate degree in Biotherapeutics has been developed in consultation with the Biopharmaceutical industry and is recognised and valued by them. A key feature is the undertaking of a significant drug discovery and development laboratory project which is reviewed by industry partners. This engagement is designed to help graduates identify opportunities in the industry at the earliest stage.

Prospective employers include: Novartis, Glaxo SmithKline, Eli Lilly, Johnson & Johnson, Pfizer, Janssen Biologics, AstraZeneca, MSD, Bristol Myers Squibb, Abbott, Sanofi.



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## Fees and Scholarships

Tuition fee information is available on [www.ucd.ie/fees](http://www.ucd.ie/fees). Please note that UCD offers a number of postgraduate scholarships for full-time, self-funding international students, holding an offer of a place on masters programmes. Please see [www.ucd.ie/international/scholarships](http://www.ucd.ie/international/scholarships) for further information.

## Facilities and Resources

Students on this programme will benefit from the use of a research skills laboratory in the prestigious UCD Conway Institute, as well as state-of-the-art teaching and laboratory facilities in the new O'Brien Centre for Science.

## Apply Now

This programme receives significant interest so please apply early online at [www.ucd.ie/apply](http://www.ucd.ie/apply)

## Entry Requirements

- This programme is intended for applicants who have an upper second class honours degree, or the international equivalent, in a biological or chemical science.
- This includes a BSc in Biotechnology, Biochemistry, Microbiology, Genetics, Neuroscience, Physiology, Pharmacology, Medicinal Chemistry or an equivalent qualification.
- Applicants whose first language is not English must also demonstrate English language proficiency of IELTS 6.5 (no band less than 6.0 in each element), or equivalent.

## Staff Profile

**Dr David O'Connell,**  
Lecturer in Biochemistry &  
Pharmacology



My core research focus is on the activity of calcium-binding proteins involved in homeostatic mechanisms in the cell using an integrated platform of proteomic technologies. I have patented a novel affinity tag platform for improved protein immobilisation for purification, biophysical analysis and detection in multiple biopharmaceutical applications and, together with Biopharma companies in the UK, Sweden and Switzerland, we are validating this technology in the industrial context and assessing the impact on the biotherapeutics discovery and development pipeline.

## Accommodation

UCD has accommodation for over 2,500 students across five locations. Places are limited and more information is available at [www.ucd.ie/residences/](http://www.ucd.ie/residences/). For information and advice on living off campus, please contact the UCD Residences Off-Campus Office or the UCD Student Union Accommodation Services. Please visit [www.ucd.ie/residences/accommodation-booking-support/](http://www.ucd.ie/residences/accommodation-booking-support/) for further details.

## Related Masters Programmes of Interest

- MSc Biotechnology & Business
- MSc Biotechnology
- MSc Biotherapeutics & Business
- MSc Biological & Biomolecular Science (Negotiated Learning)
- MSc Toxicology & Regulatory Affairs

## EU Enquiries

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[www.ucd.ie/courses/msc-biotherapeutics](http://www.ucd.ie/courses/msc-biotherapeutics)

**Non-EU Enquiries** ✉ : [internationaladmissions@ucd.ie](mailto:internationaladmissions@ucd.ie)  
[www.ucd.ie/international](http://www.ucd.ie/international)

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