

MEngSc Biopharmaceutical Engineering

One Year Full Time / Two Years Part Time



Introduction

Pharmaceutical and Biopharmaceutical manufacturing are key sectors in the Irish economy generating over 50 per cent of GDP. This sector has seen continued and sustained success with a number of high-profile investments in recent years providing excellent job opportunities for graduates. The programme and its academic faculty are closely linked with the National Institute for Bioprocessing Research and Training (NIBRT), which is a global centre of excellence for training and research in bioprocessing. The MEngSc in Biopharmaceutical Engineering programme provides substantial coverage of scientific, technical, management and

regulatory issues associated with this industry. The aim of this programme is to offer an internationally recognised, high-quality, flexible curriculum, which follows the latest developments in science and technology. This programme is suitable for Science and Engineering graduates wishing to obtain a qualification which is highly relevant to the biopharmaceutical industry. Classes for the part-time course take place every Friday afternoon (during UCD term time) between 2pm and 6pm in the Engineering Building in UCD and are also streamed online. Practical elements take place in spring semester in the NIBRT facility.

Course Highlight

This programme is closely linked with the National Institute for Bioprocessing Research and Training (NIBRT) facility. NIBRT offers a quality training and research experience not previously possible anywhere in the world. At the heart of the NIBRT building is the bioprocessing pilot plant, consisting of extensive upstream, downstream, fill/finish and the associated analytical facilities.

Course Content and Structure

- 90 credits taught master's
- 60 credits taught modules
- 30 credits dissertation

The programme provides students with an understanding of the principal scientific and engineering challenges involved in the design, operation and management of biopharmaceutical production facilities.

Modules include:

- Bioprocessing Laboratory
- Facility Design and Operation
- Biopharmaceutical Industry Regulation and Management
- Bioprocess Scale-up and Technology Transfer
- Biopharmaceutical Engineering Project
- Bioanalytical Science for Biopharma
- Research Methodologies
- Bioprocess Design
- Downstream Processing
- Principles of Biopharma Engineering
- Animal Cell Culture Technology
- Data Science for Biopharmaceutical Manufacturing
- Gene Therapy and Vaccine Technologies and Processing
- GMP Manufacturing of Advanced Therapeutics

Why study at UCD?



Graduate education

12,800 graduate students; 17% graduate research students; structured PhDs



Global profile

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



Global community

Over 11,000 international students from more than 152 countries



Global careers

Dedicated careers support; 2-year stayback visa to work in Ireland





Career Opportunities

Your career opportunities upon graduation from this programme are exemplary. Ireland is a world player in pharmaceutical and biopharmaceutical production. The pharmaceutical industry in Ireland comprises a mix of international and local companies. Approximately 120 overseas companies have plants in Ireland, including many of the largest pharmaceutical and biopharmaceutical companies in the world, such as AbbVie, Amgen, Biomarin, BMS, Genzyme, GSK, Janssen Biologics (Ireland), Merck, Novartis, Pfizer, Regeneron, Roche, Sanofi Shire, and many more. Upon graduation from this programme, you will enjoy an extremely high job placement rate with superlative career opportunities.

Graduate Profile

Thomas Raju
Regeneron Pharmaceuticals



Applicant Profile

- Applicants must hold a bachelor's degree with a minimum upper second class honours (NFQ level 8) or international equivalent in a relevant Engineering, Science or Technology programme.
- Applicants for the part-time programme must be working full-time in the Pharma/Biopharma or a related sector
- 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.

International Fees and Scholarships

Tuition fee information is available on www.ucd.ie/fees. Please note that UCD offers a number of graduate scholarships for full-time, self-funding international students, holding an offer of a place on a UCD master's programme. Please see www.ucd.ie/global/scholarships/ for further information.

Related Master's Programmes of Interest

- MEngSc Chemical Engineering
- MSc Biotechnology
- ProfCert Manufacturing of Cell & Gene Therapies & Vaccines

I chose this programme as a continuation of my bachelor's degree in Pharmaceutical Chemistry and I wanted to further develop my learning in this area. The best part is that the course offers training in the bioprocess training facility in the National Institute for Bioprocessing Research and Training (NIBRT) which helped to greatly enhance my practical knowledge. The course is designed to give you a well-rounded education in a variety of aspects in the pharmaceutical industry such as cell culture, facility design, engineering modules, regulatory affairs, lean sigma methodologies, etc. The course has helped improve my career opportunities and I have already been offered a job with a pharmaceutical company for when I finish my course. I believe I have gained more practical knowledge from the one year of study that will help me in my workplace.

CONTACT US

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This programme receives significant interest so please apply early online at www.ucd.ie/apply