



University College Dublin  
College of Engineering and  
Architecture



## Why UCD?

- Top 2% World University
- Ireland's largest and most international university
- Emphasis on Research and Innovation
- Safe, modern campus in Dublin, capital city of Ireland
- Extensive accommodation options with 24 hour security
- 1 hr flight from London

## BE Chemical and Bioprocess Engineering

### Why is this course for me?

Chemical and bioprocess engineers invent, design, build and manage facilities that transform matter and energy into useful products, such as pharmaceuticals, therapeutic proteins, medical devices, fuels and clean/air water.

At the heart of Chemical and Bioprocess Engineering is the application of invention to the transformation of matter and energy, to provide useful processes, in a technically, economically, and environmentally acceptable manner. Chemical and Bioprocess Engineers use chemistry and biology as the basis for understanding these transformations and apply mathematics and engineering principles to achieve them on the appropriate scale. If you are a quantitatively minded student who enjoys putting science and maths into practice and if you're interested in preparing for a wide range of career options, then you're likely to enjoy and succeed at Chemical and Bioprocess Engineering.

### UCD College of Engineering and Architecture

The College produces high-quality leading edge research with an international profile. The College promotes interdisciplinary research and teaching both

between schools and colleges in UCD, and with other institutions within Ireland and abroad. The college carries out research, training and technology transfer in collaboration with industry. Our programmes are constantly developing to reflect our changing environment, offering students diverse and exciting opportunities.

### What will I study?

After a common Stage 1, providing students with the fundamentals underpinning engineering, subsequent years focus on core science and engineering (Thermodynamics, Heat/Mass Transfer, Fluid Mechanics), specialist Chemical/Bioprocess Engineering subjects (Reactor Design, Unit Operations, System Control) and allied subjects (Economics, Safety, Health and Environment) culminating in Stage 4 where all topics are integrated into major Design and Research projects. Students may apply for industrial placements during the summer following Stage 3. The School, which maintains very close links with industry, supports them in this undertaking.



On successful completion of the programme students will be able to:

1. Apply fundamental and specialist knowledge in mathematics, basic science and engineering sciences from first principles to solve engineering problems.
2. Undertake investigative, experimental and data analysis.
3. Employ (and develop as needed) appropriate engineering methods, skills, tools and technology information (including familiarity with a range of computing software and computer applications).
4. Work effectively with responsibility and integrity, adhering to the highest standards of personal and professional conduct and in accordance with the prevailing Code(s) of Ethics.
5. Know of appropriate national and global requirements for sustainable development and societal and environmental impact of engineering and technological activity.



Abisola Kuforiji (left) completed the BE in Chemical and Bioprocess Engineering and is currently employed by Pfizer Pharmaceuticals in Cork, Ireland.

**‘The degree programme is very well-balanced, with good coverage of both theoretical and practical material and a real emphasis on understanding.’**

## Career Opportunities

Chemical and Bioprocess Engineering employment opportunities are excellent with a wide range of options, from direct employment in the chemical, process, pharmaceutical and energy industries, to support sectors, including engineering consultancy and design, as well as business and finance. As the UCD Chemical and Bioprocess Engineering programme (Honours, Level 8) is accredited at the Master’s level by the Institution of Chemical Engineers (IChemE), graduates may choose to work at home or abroad. Graduate study opportunities are available within UCD, from taught and research master’s right through to PhD level, and many of our graduates have chosen to study abroad in the United States, Canada, Australia, Germany and the UK.

## Prospective Employers

Pfizer Pharmaceuticals, Bristol Myers Squibb, Centocor, Glaxo Smith Kline, Merck, Abbot Laboratories, Lilly, Aughinish Alumina, ESB, Airtricity, Boliden, Tara Mines Limited, Indaver, Jacobs Engineering, PMG, DPS, Irish Cement Limited/CRH, Intel, Hewlett Packard, Genzyme, Takeda, Helsinn Birex Pharmaceuticals Ltd., Allergan, Boston Scientific, Cara Patners, Elan Pharmaceuticals, FMC International, AG Janssen Biologics (Ireland), Rottapharm, Roche, Wexport Ltd. Astellas Pharma, Covidien, Coca Cola, Mainstream RP, Diageo, Irish Distillers, Conoco Philips, Chevron Corporation, Exxon Mobil, Loctite, Veolia, Aqua Marine Power.