Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

MSc in Biomedical Engineering

Department of Mechanical, Manufacturing and Biomedical Engineering

Programme Overview

The MSc in Biomedical Engineering provides advanced training and education to the next generation of biomedical engineers. Some of the most exciting work in biomedical engineering today takes place at the intersection of the biological, physical, chemical, engineering and digital disciplines; leading to significant impacts on human healthcare.

The MSc in Biomedical Engineering exposes students to exciting new developments in biomedical engineering including the development of new materials for use in cardiac therapeutics, designing innovative next generation medical devices, in silico design and modelling, and growing and regenerating new tissues for transplantation and in vitro disease modelling.

This award winning Level 9 MSc programme is internationally respected and accredited by the Institute of Engineers of Ireland (EI).

Students of the MSc in Biomedical Engineering at Trinity College Dublin receive lectures from international experts in biomedical engineering subjects, specifically tailored to the current needs of industry and carry out research in internationally recognised, state of the art research laboratories and facilities.

www.tcd.ie/mecheng

Programme Content

The MSc in Biomedical Engineering offers four distinct streams tailored to the background and previous experience of entrants.

The General Stream is designed to provide a solid and broad basis in biomedical engineering for entrants with no previous background in biomedical engineering. It provides individuals with a critical education in biomedical engineering and the medical devices industry.

The Specialisation Stream in Medical Device Design is designed to bring together clinicians, researchers and the medical device industry to produce new solutions for clinical needs. This fast-moving area can offer students a rewarding career in the global medical device market. Students will gain a specific education of the key topics in medical device design and a knowledge of medical device regulation.

The Specialisation Stream in Neural Engineering is focused on clinical neural engineering. This is based on signal processing of neuroimaging and electrophysiological data to solve specific clinical problems. MSc research projects employ neuroimaging (EEG and MRI) to develop quantitative methods to understand neurological function but also employ new analytical, neurophysiological and neuroimaging methods that allow outcomes of interventions to be more accurately predicted. MSc research projects will be in collaboration with clinical colleagues and can include data acquisition from clinical cohorts.

The Specialisation Stream in Tissue Engineering provides students with a critical understanding of stem cell biology and therapeutic applications, animal and human cell culture processes, and strategies at the forefront of current scientific developments to regenerate or repair damaged tissues. This exciting multidisciplinary field of research holds significant potential in the treatment of many diseases and disorders. This stream provides “hands-on” training in state-of-the-art cell and tissue engineering techniques, allowing individuals to develop the necessary skills to pursue a significant research topic in the field of tissue engineering and regenerative medicine.

Programme Delivery

This programme is delivered on the Trinity College Dublin campus and in TBSI (Trinity Biomedical Sciences Institute), using a combination of classroom lectures, and smaller group teaching in tutorials and lab sessions. Laboratory experiments and simulation work are conducted in state-of-the-art research facilities and well-equipped computer rooms, located within the Parsons Building, home of the Department of Mechanical, Manufacturing & Biomedical Engineering and within TBSI.

Programme Requirements

Applicants will be required to hold a minimum of an upper second class honors degree (II.1 or higher, CGPA 3.2/4 (North America) or 65% or 6.8 CGPA (India)) in engineering, biomedical technology, or a cognate discipline.
Other degree programmes may be deemed suitable provided that the applicant has proven mathematical ability. This means that the applicant should have achieved at least an A grade in Mathematics (or equivalent subject) at Leaving Cert, A levels or equivalent.

Application Details

https://www.tcd.ie/mecheng/postgraduate/

Documents required with application:

- Academic transcripts for each year of Third Level study and all Third Level qualifications awarded
- IELTS, Cambridge Advanced/Proficiency, TOEFL Scores for applicants whose first language is not English
- Curriculum Vitae/Resume
- Statement of Purpose
- 2 letters of recommendation
- Passport
- Application Fee (non-refundable) and application fee form

Contact Details

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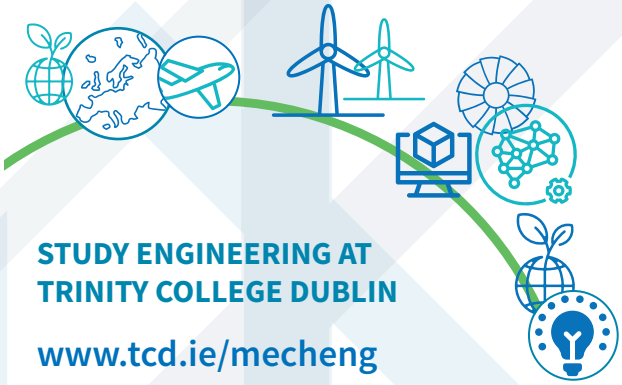
RANKED 1st IN IRELAND

TOP 25 IN EUROPE

TOP 100 WORLD WIDE

QS subject rankings, 2023



STUDY ENGINEERING AT TRINITY COLLEGE DUBLIN

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