



MEngSc Water, Waste & Environmental Engineering

UCD School of Civil, Structural & Environmental Engineering

Why is this course for me?

This programme prepares graduates to work as professional engineers in the broad field of environmental protection and management.

The programme is designed for students who already possess a BEng (Honours) degree (240 ECTS) and who wish further qualifications in the growth area of environmental engineering. You will gain advanced theoretical and conceptual knowledge and understanding in the area of environmental engineering on topics such as engineering hydrology, environmental modelling, water and wastewater treatment, solid

waste management, and environmental data analysis, amongst others. Environmental engineering involves the application of engineering and scientific principles to solve or prevent environmental problems. This programme allows you to gain competencies in the design of facilities to treat water, wastewater and wastes; in the development and protection of water resources; in the design of flood protection systems; in the analysis of environmental data; and in the design of infrastructure that respects the principles of environmental sustainability.

Why study at University College Dublin?

Some of the reasons to study at UCD:

- Top 1% world university
- Ireland's largest provider of graduate education
- Ireland's largest and most international university
- Emphasis on research and innovation
- Safe, modern campus in Dublin, capital city of Ireland
- Extensive range of on-campus accommodation

UCD College of Engineering and Architecture

The UCD College of Engineering and Architecture's research and taught programmes are centred around a wide variety of activities spanning basic, strategic and applied research from the diverse range of disciplines covered by the Schools of Architecture, Biosystems Engineering; Chemical and Bioprocess Engineering; Civil, Structural and Environmental Engineering; Electrical, Electronic and Communications Engineering and Mechanical and Materials Engineering. We have a proud history in research going back 100 years. Today, there are exciting opportunities for those wishing to pursue a higher research degree to doctoral or masters level. Within the broad disciplines listed above there are many research centres, clusters and institutes led by highly experienced world renowned researchers. The College has an excellent track record in attracting significant Science Foundation Ireland (SFI), European and industrial

funding to support its many research activities. Through research, the UCD College of Engineering and Architecture will continue to promote excellence in Graduate training. The range of interdisciplinary taught Master's programmes now available within the college and initiatives including the Structured and Thematic PhD programmes, mean that the Graduate School is ideally placed to offer innovative graduate level training programmes.

UCD School of Civil, Structural & Environmental Engineering

The UCD School of Civil, Structural and Environmental Engineering is home to our university's community of staff and students engaged in research, teaching and learning on many facets of the designed environment. Their interests are diverse – buildings, urban spaces, rural environments, transport systems, water supply, flood control, bridges, tunnels, historical fabric – to mention just a few! Their specialisations may be diverse but they share a common desire to advance the boundaries of knowledge in an atmosphere that fosters curiosity, the joy of discovery and empowerment for life-long learning.

What will I study?

Assignments, laboratory and project work, as well as substantial written examination of course material occurs in most modules. The Environmental Research Project module will require submission of a substantial final report / thesis. Assessment of this module will involve participation in seminar / poster presentations and a final oral examination.

Sample modules include:

- Introduction to Water Resources Engineering
- Science and Technology for Sustainable Development
- Environmental Research Project
- Water Waste and Environmental Modelling
- Environmental Impact Assessment
- Quantitative Methods for Engineers
- Advanced Air Pollution
- Systems and Geotechnics
- Unit Treatment Process in Water Engineering
- Hydraulic Engineering Design
- Engineering Hydrology
- Integrated Municipal Solid Waste Management
- Freshwater Resources Assessment
- GIS and Data Analyses
- GIS and Remote Sensing
- Remote Sensing

What are the career opportunities?

Graduates from the programme will find employment as engineers in the private sector (e.g., engineering consultancy, engineering design, project management, risk assessment, waste management), in the public sector (e.g., environmental protection, regulation, standards development, local government, river basin management), and in the non-governmental sector (e.g., environmental advocacies, NGO's), or may wish to pursue further qualifications (e.g., PhD, MBA) to become even more specialised. Graduates will be equipped with the skills that allow them to be "lifelong learners", whether in the pursuit of knowledge for personal use or in connection with their engineering careers. Employers of environmental engineers include commercial firms, engineering consultancies, government agencies, and non-governmental organisations, all well known in Ireland and many with global operations. Some of these include: RPS Group - White Young Green - Nicholas O'Dwyer - Atkins - Greenstar - McKinsey and Company - Mazars - Environmental Protection Agency - Local Authorities - Engineers Without Borders - Engineers Against Poverty - Friends of the Earth



Academic Profile

Prof Michael Bruen, Programme Director

Prof Michael Bruen is the Programme Director for the MEngSc in Water, Waste and Environmental Engineering and the Director of the UCD Centre for Water Resources Research in the UCD School of Civil, Structural and Environmental Engineering. Has undertaken a number of short term assignments for various International agencies, including UNESCO, WMO, CEFIGRE, IUCN. He has also worked at the University of Dar es Salaam, Tanzania as Coordinator of their International Water Resources Engineering Programme, funded by Ireland's Bilateral Aid Programme. He is currently the Associate Dean of Engineering in the UCD College of Engineering & Architecture.



Entry Qualifications

A recognised bachelor's degree (honours) in engineering (minimum 4-yr, 240 ECTS), preferably in civil engineering or environmental engineering, or equivalent is required for entry. If English is not your native language, proof of your proficiency in English will be required, unless you took your primary degree through English in an English speaking country. The minimum acceptable score on the TOEFL Internet Based Test is 100 and on IELTS it is 6.5

Duration

This MEngSc is a one year full time 12 month programme, comprising 90 credits

Contact

General Admission queries: Rebecca Patterson / Karina O'Neill
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www.ucd.ie/eacollege

Applying Online

To apply online, please go to www.ucd.ie/apply, create a user account, select 'Graduate Taught Courses' as your application type from the drop down list and then select 'MEngSc Water, Waste & Environmental Engineering (T277)'

Useful Links

www.ucd.ie/programmes/T277
www.ucd.ie/graduatestudies/coursefinder/