

Water and Wastewater Engineering

MSc, PgDip, PgCert
Full and part-time

Water is increasingly under pressure from demographic and climatic changes. Treatment processes play a key role in delivering safe, reliable supplies of water to households, industry and agriculture and in safeguarding the quality of water in rivers, lakes, aquifers and around coastal areas. Well educated, skilled graduates who can support the delivery of vital water and wastewater treatment services are in high demand.

This programme has been tailored to the water and wastewater treatment and management needs of UK and global water sector employers and is ideal for individuals who want to make a real difference.

Focus on your career

Graduates from this programme are highly sought after by employers. Successful students are able to secure positions and develop their careers in UK and European water companies, major international engineering consultancies and service contractors, and government agencies. Former students benefit from excellent international networking opportunities through a large alumni group.

"Cranfield Water Sciences graduates are well versed in the pragmatic skills of water and wastewater treatment and fully aware of the challenges facing the water industry in the 21st century. This makes them prime candidates for employment within water companies, satisfying the individual's aspirations for development and the demands of a rapidly developing industry."

Barrie Holden, Water Innovation Manager,
Anglian Water Services

Benefit from our reputation

Cranfield's Centre for Water Science is highly respected in the UK and global water sectors. The MSc programme is directed through a dedicated Programme Advisory Committee that ensures the course is aligned to industry needs. Members include Anglian Water, Biwater, Energy & Utility Sector Skills Council, Halcrow, Institute of Water Officers, Montgomery Watson Harza, Severn Trent Water, Thames Water, United Utilities and Yorkshire Water.

Benefit from our expertise

The Centre is recognised internationally as a centre of excellence for postgraduate courses. It is the UK's largest academic group specialising in process technologies, engineering and policy for water quality improvement, and is a member of British Water and the International Water Association. Industry practitioners teach alongside leading academics, ensuring you are exposed to cutting-edge tools, techniques and innovations.

Benefit from practical experience in work-based projects

Project work undertaken enables you to assimilate the knowledge and skills gained from the taught element of the course and put these into real-world practise while gaining transferable skills in project management, team-work and independent research. Industrially oriented projects have support from industry and other external organisations. Future employers value this experience. Part-time students have the benefit of addressing their employer's real business problems supported by our academic supervision.

Accredited by





Course Overview

MSc Water & Wastewater Engineering

This course provides students with process, hydraulics and pumping system design and engineering knowledge, skills and experience. Graduates are able to work within a range of engineering design, operation and research roles in organisations involved in the treatment of water quality to meet environmental, municipal and industrial standards. It also develops suitably trained and qualified process and design engineers with the potential to progress further into senior management positions.

"The course provided me with the opportunity to gain invaluable experience and excellent training to prepare me for a career in the water industry. It was hard work and intense, but with expert tuition on-hand, and support that can only be described as exceptional, I was able to gain a great deal of knowledge from the course in a short time. The group design project was very important to me as it gave me the chance to tackle actual treatment problems present within the industry, make important contacts, and learn a massive amount about the wastewater industry. I would recommend anyone to take this course who is serious about pursuing a career in either the water or wastewater industry."

Martin Fryer, Process Engineer
Wessex Water
Alumnus

Winner of the Institution of Chemical
Engineers Water Subject Group Prize
for Best Thesis 2005



"The Cranfield MSc Water and Wastewater Engineering course provided an excellent springboard for a career in the water industry. It is well structured, and highly regarded by employers. I enjoyed my time at Cranfield, and the experience has certainly been worthwhile."

Kenneth McGibbon
Alumnus
Winner of the Degremont Prize
for Best Student 2005

"The course was both challenging and intense. Its varied nature, which included group work, site visits, guest speakers, tutorials and practical exercises, provided me with a broad perspective of the industry, a good level of technical knowledge and a range of practical skills. I would recommend the course to anyone interested in a career in the water or wastewater industry, as it is an excellent starting point. Teaching staff are both supportive and encouraging, assisting you not only with achieving academic success but also with improving personal development skills."

Dr Emma Sharp, Technology and
Development Process Engineer
Severn Trent Water
Alumnus



Water Science

Water and Wastewater Engineering

Water and Wastewater Treatment Principles	●	
Process Science and Engineering	●	
Chemical Processes	●	
Physical Processes	●	
Biological Processes	●	
Hydraulics and Pumping Systems	●	
Risk Management and Reliability Engineering	●	
Research Processes	●	
Group Projects		
Determined by supporting organisation	●	
Individual Project	●	

● = Compulsory module for specialisation identified above.



Course details

Duration: Full-time: 1 year.
Part-time: 2-3 years.

Start date: Full-time: October.
Part-time: Throughout the year.

***Funding:** The Lorch Foundation MSc student bursary is available to suitably qualified full-time students. Other funding opportunities exist, such as the Royal Academy of Engineering (RAE) Panasonic Trust Fellowships, Utilities and Service Industries Training (USIT) Scholarships and School bursaries. All students benefit from industrial sponsorship of their individual thesis project placement.

For the majority of part-time students sponsorship is organised by their employers. For information on funding opportunities please visit: www.cranfield.ac.uk/sas/funding

Entry requirements: Candidates must possess, or be expected to achieve, a 1st or 2nd class UK Honours degree or equivalent. Other relevant qualifications together with considerable industrial experience may be considered.



Who should apply

- Science, engineering or environment graduates keen to pursue careers with organisations involved in water and wastewater treatment, including utilities, consultants, equipment manufacturers, and suppliers
- Graduates currently working in the water sector who wish to to extend their qualifications or skills
- Individuals with other qualifications who possess considerable relevant experience

Course structure

The full-time MSc programmes comprises eight one-week assessed modules, a group design project and an individual project. Modules include lectures and tutorials, and are assessed through written examinations and assignments.

The part-time MSc programme comprises the eight modules, a design project and an individual project. Projects can be completed as work based learning whilst the modules require attendance at Cranfield University.

The three elements of the full and part-time programmes are assessed as follows:

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|-------------------------|-----|
| • Taught modules | 40% |
| • Group design projects | 20% |
| • Individual project | 40% |

Alternatively, qualifications of Postgraduate Diploma (PgDip) comprising the eight taught modules and the design project, and Postgraduate Certificate (PgCert), comprising five modules and a short design project, are available.

Prizes

Full-time students compete for the British Water prize for 'Best Group Project', the IChemE prize for 'Best Thesis', The Lorch Foundation prize for 'Best Laboratories Group', and the Degremont prize for 'Best

Student'. Part-time students compete for the Thames Water prize for 'Best Thesis' and the Yorkshire Water prize for 'Best Student'.

Design projects

The group design project for full-time students is an applied multidisciplinary team based activity. It provides students with the opportunity, whilst working in teams under academic supervision, to apply principles taught during modules, whilst taking responsibility for project tasks. Projects are undertaken in relation to wastewater and potable treatment systems. For part-time students design projects are usually work based.

Individual project

This provides students with the opportunity to demonstrate independent research ability working within agreed objectives, deadlines and budgets. The project is sponsored by industry and usually includes a four month placement with the sponsoring company. Placements have been offered by UK and European water utilities, multinational companies, and SMEs operating in the water sector. Part-time students usually undertake their individual project with their employer.

Why Cranfield University

Cranfield is a wholly postgraduate university with an international community and a truly global reputation. Ranked first in the UK for staff to student ratios and with a top five ranking for student employment on graduation, an excellent rating for teaching, and exceptional facilities, Cranfield makes an ideal destination for advancing careers. All courses are designed to meet the training needs of industry and have a strong input from experts in their sector. Our focus is on applied research and developing future managers, engineers, consultants and entrepreneurs.

Contact

For further information and an application form please contact:

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