Cranfield Water

Postgraduate master's courses in

Water

Academic year 2022/23 entry

Advanced Water Management MSc
Water and Wastewater Engineering MSc
Water and Sanitation for Development MSc

Cranfield University

We are the UK's only specialist postgraduate university in technology and management, with longstanding relationships with some of the most prestigious global companies. Our close collaboration with industry, and passion for the areas we operate in, will help your career.

Specialist postgraduate
A research-focused professional community

81%
of our research is **world-leading or internationally excellent**
Research Excellence Framework (REF) 2014

Over £150 million
of investment in new facilities over the past five years

Six-time winner of
the Queen's Anniversary Prize for Higher and Further Education
The Queen's Anniversary Prizes For Higher and Further Education 2019

A professional network of **70,000+** alumni, from 177 countries

5,000+
postgraduate students from 100+ countries

UK no.1
Teaching staff to student ratio

As we are postgraduate only, we are not listed in league tables that help compare undergraduate universities, such as *The Times World Rankings* and *The Complete University Guide*.

"The aspect of the course that I found most useful was the industrial field trips. After studying in the class you go to the field and then you actually see what is happening. Also the industrial links that Cranfield University has. Experts from industry come into the class to lecture us, just to let us know that what we are studying, our expertise are needed. Cranfield has prepared us for the industry."

Samuel Yeboah Nyarko, current student, (Water and Wastewater Engineering)

Reasons to study **Water** with us

1 Projects with industry
Group and individual projects are supported by external organisations such as the Environment Agency, Natural England, Scottish Water, Yorkshire Water and WaterAid allowing you to address key contemporary issues in the water sector.

2 Innovative teaching
Taught by international academic staff as well as industry practitioners, you will benefit from a variety of teaching practices, including online learning supporting face-to-face lectures and student-led exercises.

3 Management skills
Built around an integrated skills programme that provides you with comprehensive training in project management, commercial awareness, and effective communication.

4 Transferable skills
Through structured course activities, you will gain a range of competencies which will significantly improve your skill set and employability. These include synthesising evidence, problem solving, technical writing and independent learning.

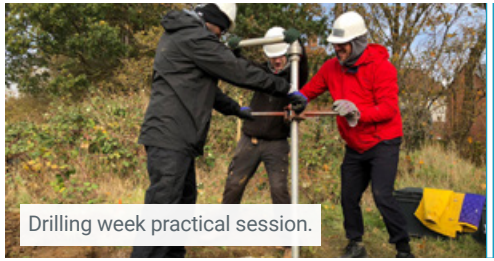
5 Networking opportunities
Our new alumni mentoring programme, alongside regular interaction with employers through group project work and your thesis, will enable you to build an invaluable network of contacts.

6 Outstanding facilities
Our test and experimental facilities include dedicated laboratories for clean water, fermentation, microbiology, wastewater and water chemistry. The new National Research Facility for Water and Wastewater Treatment provides an on-campus sewage treatment works with a pilot hall. Our facilities also include the point-of-use potable and new sensors laboratories.

7 Industry-relevant courses
Regularly scrutinised by advisory panels of leading industry professionals to ensure the course content is relevant and meets the expectations of employers.

8 Flexible learning
All water courses run on a full-time and part-time basis. For part-time students we develop an individual study plan prior to starting the course making an MSc achievable even if you work full-time.


Water sampling field trip.


Drilling week practical session.

Water courses

The water sector offers a wealth of stimulating employment opportunities for ambitious graduates with the mix of advanced knowledge and practical experience that a Cranfield degree provides.

Our water industry professionals around the world are helping to develop more sustainable solutions to problems caused by pollution, climate change, urbanisation and the effects of poverty. Our postgraduate degree courses and world-class learning environment are playing a key role in providing the skills and expertise to address these fundamental global challenges.

Our programmes are also available part-time. This is achieved by developing individual study plans with each part-time student prior to starting the MSc and then reviewing it throughout the course.

Cranfield's Water Science Institute has been delivering high-impact research in water management, engineering and technology for more than 40 years. With expertise in water for people, food, industry and the environment, we help develop a broad and holistic knowledge of water science to provide you with the applied skills to work in a variety of sectors contributing to a more sustainable water future.

We offer a comprehensive CPD programme of short courses and are happy to talk to organisations about in-house training provision.

Accreditation

All three of our water master's are accredited by the Chartered Institution of Water and Environmental Management (CIWEM).

CIWEM Chartered Institution of Water and Environmental Management
Accredited Course

Practical session on wastewater characterisation techniques.

On-site pilot hall facilities.

Courses

The water challenges of the 21st century require an integrated approach. Our MSc courses in water provide a mixed learning experience blending theory, practice and fieldwork.

Modules form 40% of the course content, with the group and individual projects making up the other 60%.

This brochure shows the compulsory and (where applicable) some elective modules offered in the 2021-2022 academic year, to give you an idea of course content. To keep our courses relevant and up-to-date, modules are subject to change so please check the latest information on our website.

A variety of scholarships are available for all water courses. Please refer to individual course website pages for more details.

Advanced Water Management

MSc, PgDip, PgCert
Full-time/Part-time

www.cranfield.ac.uk/awm

You will gain the up-to-date knowledge and skills needed to solve today's complex natural, economic and governance challenges in water management.

Compulsory modules

- Good Ecological Status,
- Surface and Groundwater Hydrology: Processes, Measurement and Modelling,
- Managing Flood and Drought Risks,
- Water in Cities and Catchments.

Water and Sanitation for Development

MSc, PgDip, PgCert
Full-time/Part-time

www.cranfield.ac.uk/wsd

You will leave with the knowledge needed for the planning, implementation and management of sustainable water supply, sanitation and hygiene projects in low-income countries.

Where possible there will be opportunities during the thesis project for overseas work.

Compulsory modules

- Public Health, Hygiene and Sanitation,
- Resilience, Shocks and Emergencies,
- Water Resource Engineering,
- Water, Society and Development.

Water and Wastewater Engineering

MSc, PgDip, PgCert
Full-time/Part-time

www.cranfield.ac.uk/wwe

This course equips you with the practical skills needed for the delivery of reliable, safe water supplies as well as improving river and groundwater quality through wastewater treatment.

Compulsory modules

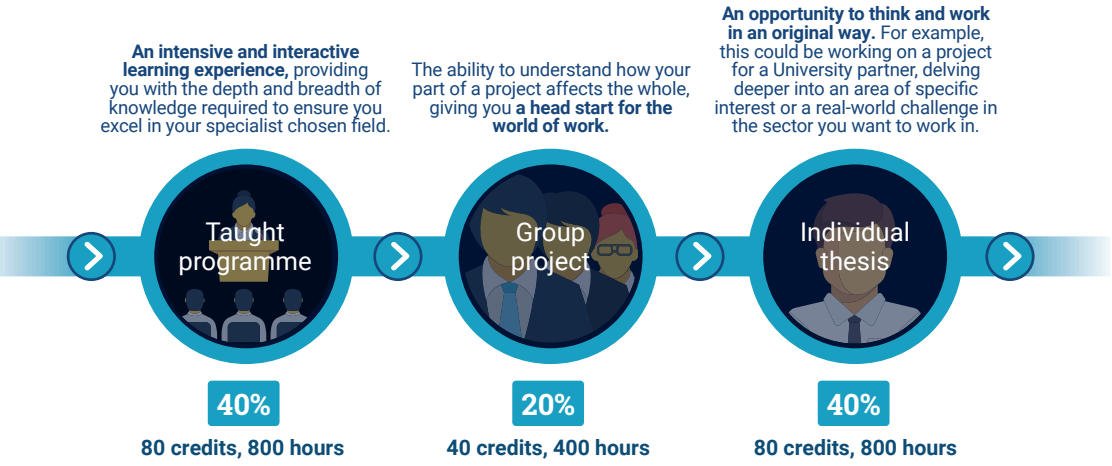
- Science and Engineering Principles in Water and Wastewater Treatment,
- Treatment Processes for Water and Wastewater,
- Water and Wastewater Assets: Lifecycles, Risks and Futures.

Course structure

Our specialist, sector-facing master's programmes are designed and developed in close collaboration with industry. This ensures course content is applied, and directly relevant, to business needs. You will develop the core competencies and skill sets demanded by industry.

This diagram illustrates the course structure of our full-time master's courses. Please check the course structure online for more detailed information, including the relative weighting of each phase.

Our part-time course is spread over two to three years. The group project is replaced by a dissertation and the individual project is usually undertaken with your employer.



Registration ------ **200 credits 2,000 hours** ------ **Completion**

Careers

Cranfield graduates leave with the skills to make an immediate contribution in the international water industry. Typically, our graduates go on to work in the following types of roles and organisations:

Roles:
- Environmental Consultant,
- Head of Water Quality,
- Researcher,
- Risk Scientist,
- Sanitation Specialist,
- WASH Project Manager.

Organisations:
- Artelia,
- Environment Agency,
- Scottish Water,
- Severn Trent Water,
- UNICEF,
- Veolia.

Industry links

Cranfield has unrivalled links with industry. Our students benefit from our extensive contacts and track record of close collaboration with government agencies and the water and environmental sector. These links include industrial advisory panels, group project sponsors and thesis clients.

Industrial advisory panel

Our courses are reviewed each year by a panel of industry advisors from leading companies and institutions in the sector. This ensures that the skills you acquire are up-to-date and what employers want. Some of the companies represented on our water courses' industrial advisory panel include:

Industry-sponsored projects

These provide the opportunity to develop practical skills and take responsibility for a consultancy-type project with industry, working under academic supervision.

The group and individual projects that you will take as part of your course are often run in collaboration with our industrial partners.

More information about group projects can be seen below and some of our partners are shown on the back cover of this brochure.

- Working with **Oxfam GB** to choose the right sanitation technologies for refugee camps.
- Working with **Australian Aid** to determine successes in community-managed rural water supplies.
- Exploring options for recovering value from the **Kazuba Waterless Toilet System.**
- Assessing alternative processes for upgrading wastewater treatment plants for **Severn Trent Water.**
- Evaluating the trade-offs between agricultural abstraction and ecological impacts for the **UK Irrigation Association, Environment Agency and NFU.**
- Designing the drinking water and wastewater treatment system for a new **Eco-hotel.**

Academic staff

You will be taught by a wide range of subject specialists at Cranfield and from outside the University, who draw on their research and industrial expertise to provide stimulating and relevant input to your learning experience. Below is a selection of our current academic staff.

Dr Alison Parker, Senior Lecturer in International Water and Sanitation

Alison's research focuses on the artificial recharge of shallow groundwater in rural areas of Africa and Asia, and also on technologies for urban sanitation, especially through her work on Cranfield's response to the Bill & Melinda Gates Foundation "Reinvent the Toilet Challenge".

www.cranfield.ac.uk/aparker

Professor Bruce Jefferson, Professor of Water Engineering

Bruce's current activities involve work on resource recovery, anaerobic sewage treatment, low energy wastewater processes for nutrient removal, algae and advanced oxidation processes.

www.cranfield.ac.uk/bjefferson

Dr Dolores Rey Vicario, Lecturer in Water Policy and Economics

Dolores' research focuses on water availability risks, water economics and the impacts of drought and water scarcity in the agricultural sector. She is actively involved in the UK national agenda on water policy and abstraction reform and challenges surrounding the water-energy-food nexus.

www.cranfield.ac.uk/dreyvicario

Professor Ian Holman, Integrated Land and Water Management

Ian's research focuses on understanding the effects of interactions between land management, soil properties and weather on soil degradation, agricultural yields and hydrological response, under current and future conditions.

www.cranfield.ac.uk/iholman

Dr Yadira Bajon Fernandez, Senior Lecturer in Anaerobic Processes

Yadira's core research area is in bioresources treatment, including anaerobic digestion of waste materials and municipal sludge, anaerobic digestion pre-treatment technologies and biosolids to land. Yadira also does extensive work in wastewater treatment, including low energy technologies for small and medium wastewater treatment plants. She is the Course Director for Water and Wastewater Engineering MSc programme.

www.cranfield.ac.uk/ybajonfernandez

Dr Heather Smith, Senior Lecturer in Water Governance

Heather's research explores the governance, institutions and societal dimensions of the water and wastewater services sector. Recent projects have examined the emergence of new technologies and approaches in the sector, such as water recycling and resource recovery, and how these fit with existing governance frameworks and the perceptions of end users.

www.cranfield.ac.uk/hsmith

Key facts and statistics

Course information

Full-time
One year

Part-time
Up to three years
See page 6.

Start date
October

MSc/PgDip/PgCert

Fees
Please see the individual course pages on our website for fee information and full-time or part-time options. Terms and conditions apply.

See **www.cranfield.ac.uk/fee-information**

Cohort profile*

Geographic spread
41% UK
16% EU
43% Rest of world

Age range
20-59 years

Typical cohort size
23

46% Female
54% Male

*These figures give an indication of the course make-up at registration across Water for the entry 2020-2021.

"We have worked with several Cranfield MSc students who have completed their summer thesis using the Upper Wensum Restoration Scheme as subject matter. I find Cranfield students committed and always interested in their investigations. The mix of nationalities generates some fresh and interesting perspectives on issues and solutions. We liked the work done by two MSc students so much that we took them on as graduates!"

Marcus Huband,
Principal Geomorphologist, Atkins

Financing your studies

If you need advice on funding your course, we can provide information and a range of online tools to help you put together the funding package you need for your course and living costs.

There is more information on our website:
www.cranfield.ac.uk/funding

How to apply

Read more about our entry requirements and how to apply.

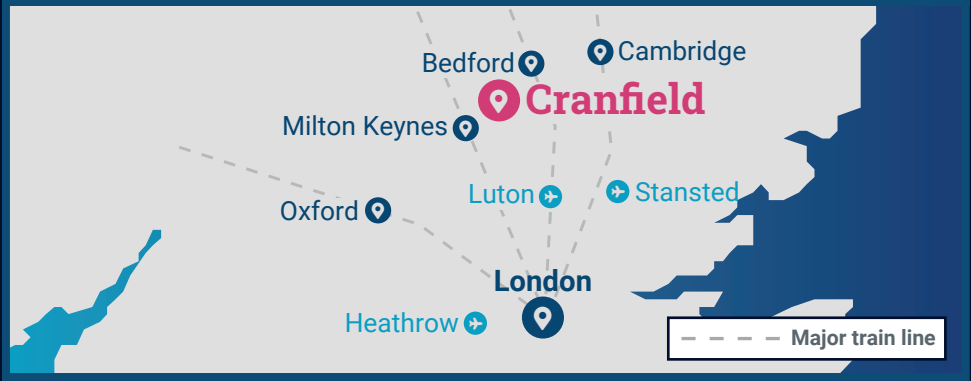
www.cranfield.ac.uk/apply

Life at Cranfield

A welcoming, professional campus community

Located just over an hour from London in the English countryside, Cranfield's campus environment supports close, working relationships between our multinational postgraduate students and academic and industry experts.

www.cranfield.ac.uk/visit



Take a virtual tour to see inside some of our facilities:

virtualtour.cranfield.ac.uk


On-campus wastewater treatment research facility.

Cranfield University works with over

1,500 organisations in over 40 countries

These organisations include:

For a full list of Cranfield courses, please see our prospectus and website.

www.cranfield.ac.uk/water

Cranfield University
Cranfield
MK43 0AL, UK

T: +44 (0)1234 758082
E: studywater@cranfield.ac.uk

@cranfielduni (Twitter)
@cranfielduni (Instagram)
/cranfielduni (Facebook)
Cranfield University (LinkedIn)
/cranfielduni (YouTube)
blogs.cranfield.ac.uk