



Water and Sanitation for Development

MSc, PgDip, PgCert



Although much progress has been made over the last three decades, still more than one billion people lack access to a safe, reliable and affordable water supply; and more than twice that number still lack access to basic sanitation. This course provides the essential skills and knowledge required to plan and implement water supply and sanitation projects and programmes in any part of the world, particularly in low and middle income countries.

On successful completion of this course you will be able to:

- Plan and design water sources in rural areas of lower-income countries, so the quality and quantity of water available is sustained.
- Evaluate water resource management methods.
- Plan and design sanitation facilities in lower-income countries and appraise different management methods.
- Explain different management and finance models for water, sanitation and hygiene services and evaluate how these might ensure access for the poorest.
- Assess how services might vary in different contexts, specifically rural, urban and emergencies.
- Critically evaluate water, sanitation and hygiene programmes, research and technologies.

Who is it for?

This course is ideal for graduates who wish to progress their career in the planning, implementation and management of sustainable water supply and sanitation projects to low and middle income countries. The course comprises assessed modules, group projects and an individual project. The modules include lectures, tutorials, practicals, simulations and workshops with an emphasis on analysis of real problems, with practical field work to reinforce learning.

Course structure

- Seven taught modules (40%),
- Group project or dissertation: (20%),
- Individual research project (40%).

Informed by industry

This MSc benefits from input from an industry advisory panel with representatives from consultant, government, industry and charitable sectors, who help to ensure the course maintains its real-world relevance to the marketplace and industry focus.

This involvement and direct contact with industry makes successful students highly sought after in the employment market.

Future career

Our courses are based on cutting edge research, so you can be sure that they are relevant in today's employment market. This course is suitable for graduates who wish to work in the planning, implementation and management of sustainable water supply and sanitation projects with rural and urban communities in low and middle-income countries.

Cranfield graduates leave with the skills to make an immediate contribution in the international water industry, and many enjoy long-term careers in diverse roles such as consultants, managers, engineers, sanitation specialists and project managers. Some of our graduates went on to work in water and sanitation development with non-governmental organisations, emergency relief agencies, UN and similar international bodies such as UNICEF, Water Aid, CAFOD and SOIL. Graduates are also going on to work with global private sector organisations such as Mott MacDonald and McKinsey & Company as well as take positions in government roles. The course also provides an ideal grounding for research positions and PhD programmes.

Key information

Duration:

MSc: one year full-time, two to three years part-time
PgDip, PgCert: one year full-time, two years part-time.

Start date:

Full-time: October.
Part-time: October.

Qualification:

MSc, PgDip, PgCert.

Location:

Cranfield campus.

Entry requirements

A first or second class UK Honours degree in a relevant science, engineering or related discipline, or the international equivalent of these UK qualifications. Other relevant qualifications, together with significant experience, may be considered.

Overview of taught modules

Example modules

Modules form only part of the course content with the projects and theses making up the balance. Please see the course structure for details.

The list below shows the modules offered in the 2019-2020 academic year, to give you an idea of course content. To keep our courses relevant and up-to-date, modules are subject to change – please see the webpage for the latest information.

Compulsory modules

(all the modules in this list need to be taken as part of this course).

Communities and Development

Development must be understood both as a general social phenomenon and as a kind of goal or desired outcome. Students of development need to have a good understanding of the current paradigms of development, and the various factors that impact development interventions at a policy, programmatic and community level. This unit addresses these issues with reference to Water, Sanitation and Hygiene (WASH) interventions, especially within rural contexts, providing a critical overview of the historic and emerging trends in the WASH sector. It will also equip you with relevant tools and methodologies for the management and implementation of WASH development interventions.

Emergency Water Supply and Environmental Sanitation

Given the frequency of displaced populations as a consequence of conflict and the inevitable occurrence of natural disasters, there is a need for a basic knowledge in the provision of safe water supply and introduction of environmental sanitation under difficult circumstances.

Health, Hygiene and Sanitation

A wholesome water supply and good sanitation are essential for a healthy life. Poor sanitation is a significant cause of the diseases which millions in low-income countries / communities suffer from. Promoting hygienic behaviour and sanitary excreta management techniques and technology is an important component of proactive public health development. This module explores the links between water, excreta related behaviour and health and the related technologies that are appropriate in low and middle income communities.

Management and Governance for Water and Sanitation

This module is focused upon delivering improved water and sanitation to the urban poor in lower-income countries. It introduces you to the theory and practice of management and appropriate governance strategies. The overall aim is to equip you with the relevant knowledge and tools to one day become effective and realistic managers of, and advisors to, WASH service providers in lower-income contexts.

Water and Wastewater Treatment for Development

As future workers in this sector, you should be equipped with a technical understanding of water and wastewater treatment processes but also a critical appreciation of their applicability within different scenarios and contexts. This module addresses this need by providing the technical principles of water and wastewater treatment (established and emerging), both for the processes themselves and for critical monitoring of water quality.

Water in Cities

There is growing recognition that, as a result of rapid urbanisation, many of the key global challenges in water management will be faced by cities. This creates significant challenges for urban areas in terms of how to supply a growing population (in planned and/or unplanned settlements), how to manage ageing infrastructure, how to recover resources from wastewater, and how to interact with the natural environment. This module will examine these challenges and provide you with the skills to identify, contextualise and evaluate different urban water management technologies and approaches.

Water Resource Engineering

Water management professionals need detailed knowledge of the design, construction and management of water sources for domestic and small-scale agricultural use, as well as of the engineering of water pumps, open channel and piped distribution systems. This module aims to provide you with the theoretical basis for the design of water resources capture and distribution systems with a focus on rural areas of lower-income countries.

Group project

The group project provides you with the opportunity to take responsibility for a consultancy-type project, while working under academic supervision. Success is dependent on the integration of various activities and working within agreed objectives, deadlines and budgets.

Examples of recent group projects include:

- Guidelines for the siting of sand dams
- Safely managed sanitation services in small towns: an analysis of knowledge and experiences from developing countries.

Individual project

You select the individual project in consultation with the thesis project coordinators. The individual project provides you with the opportunity to demonstrate the ability to carry out independent research, think and work in an original way, contribute to knowledge, and overcome genuine problems in water management. Many of the projects are supported by external organisations such as WaterAid, Oxfam and Excellent Development and are based in low and middle income countries.

Accreditation

The MSc of this course is accredited by the Chartered Institution of Water and Environmental Management (CIWEM). As a graduate of the MSc course, you are eligible for graduate membership in this leading professional body.



Accredited Course

Every effort was made to ensure that the information on this document was correct at the time it was produced. Please check our website for the latest information. September 2019.

Contact details

T: +44 (0)1234 758082

E: studywater@cranfield.ac.uk

For further information please visit
www.cranfield.ac.uk/wsd