Water Management for Development MSc

Establish and develop your career in the management of water and sanitation for developing countries

Study in the UK or by Distance Learning

Masters, Diploma and Postgraduate Certificate options
The Programme

Our Water Management for Development MSc programme is designed to establish and develop your career managing water and environmental sanitation services for developing countries.

WEDC programmes are held in high regard by practitioners and employers from both international development and emergency sectors. The programme is taught by experts in a broad range of disciplines who have considerable experience of working in low- and middle-income countries. The programme covers water supply and management, and their roles for societal change. Sanitation, hygiene and health are other key themes that are interwoven throughout the programme’s content. You will acquire the multidisciplinary knowledge and skills to coordinate, plan, manage and monitor water and environmental sanitation services.

The programme is also run by distance learning. Visit our distance learning portal for this programme and discover how we deliver distance learning: www.lboro.ac.uk/research/wedc/programmes/wmfd-portal

The profession and employability

WEDC graduates join a respected global community of WEDC alumni which numbers more than 1000 from over 70 countries. Many WEDC alumni work for international NGOs (MSF, Oxfam, SCF, GOAL, WaterAid, etc.) and agencies (such as UNICEF), or national governments. Several alumni have held high ministerial office and have shaped national government policy in the water and sanitation sector in their countries.

Aims of the programme

The programme aims to:

• provide the multidisciplinary knowledge and skills to coordinate, plan, manage and monitor water and environmental sanitation services, with a focus on low- and middle-income countries;
• support the professionalization of the sector, through policy development, performance improvement, institutional reform, change management, benchmarking services and aiming for financial viability;
• encourage a critical approach to the global principles and local practice of sustainable water and environmental management for the public good;
• equip students with appropriate expertise and skills for relevant work in management of water and environmental sanitation for low- and middle-income countries; and
• encourage critical analysis particularly through in-depth study and a research dissertation on a specialist topic.

Knowledge and understanding

The programme will develop your knowledge and understanding of:

• international and local initiatives and institutions that promote water and sanitation for all;
• the links between water and environmental sanitation services (including water resources, water treatment and supply, excreta, wastewater, stormwater and solid waste management), hygiene behaviour, health and socio-economic development;
the key issues in relation to environmental and social impact, equity, effectiveness, efficiency, sustainability and replicability in planning and managing sustainable water and environmental sanitation services;

the importance of a multidisciplinary approach to the management of water and environmental sanitation and ways to integrate technical, social, economic and environmental perspectives in financing, coordinating, planning, promoting, managing, and monitoring services;

the range of appropriate water and environmental sanitation technologies and the level of service they provide;

the assessment, planning, facilitation, regulation and management of social, institutional, economic and environmental issues at sector-wide, institutional and project implementation levels that ensure the sustainability and improvement of water and environmental sanitation services; and

effective qualitative and quantitative data collection, analysis and dissemination.

Subject-specific cognitive skills

On successful completion of this programme, you will be able to:

evaluate past and current initiatives to deliver water and environmental sanitation services to unserved populations globally;

identify and integrate socially excluded groups and individuals within target populations;

understand users’ water and environmental sanitation needs and demands based on conflicting and limited information;

appraise institutional, social, economic, environmental and technical contexts and determine possible solutions;

justify appropriate sustainable institutional, social, economic and environmental solutions to meet users’ needs and demands for water and environmental sanitation services;

investigate relevant emerging challenges facing the sector.

Subject-specific practical skills

• categorize different socio-economic contexts and physical/ natural contexts;

• plan surveys and collate suitable data sources relating to the enabling environment, sector, institutional and organizational performance, social conditions, economic performance and environmental status;

• choose appropriate methods to review, validate, analyse, interpret and communicate dissimilar data sets using appropriate methods;

• negotiate and defend various approaches to managing and improving water and environmental sanitation services;

Other generic skills are developed ranging from evaluating a variety of different sources of data, collecting and recording a range of views, especially from socially-excluded or vulnerable groups, through to the use of IT in development contexts.
# Modules, Credits and Levels of Study

## SEMESTER 1 – CORE MODULES: September – January

### Management of Water and Environmental Sanitation Services

- Poverty and development
- Benefits, progress and plans for improved WASH
- Stakeholders in WASH
- Governance, accountability and the enabling environment
- Institutions, capacity development and institutional change
- Service delivery approaches
- Project planning, monitoring and evaluation
- Project and people management
- Basic economic and financial concepts of WASH services
- The project cycle, results framework and the theory of change
- Introduction to solid waste management
- Solid waste storage and primary collection
- Solid waste transfer and disposal
- Recycling and reuse
- Human rights, equity and inclusion for WASH

28 September 2020 – 29 January 2021

### Management of Village Water Services

- Management of rural water supplies
- Water safety and drinking water quality
- Water collection and demand
- Rainwater harvesting
- Groundwater abstraction, boreholes and hand-dug wells
- Spring protection
- Handpumps – an overview
- Household water treatment and storage
- Participatory approaches in water projects
- Cost recovery
- Financial management
- Procurement and contracting
- Strategic planning and monitoring for sustainability
- Choosing technologies and service options
- Enabling sustainable outcomes

28 September 2020 – 29 January 2021

### Water and the Natural Environment

- The natural environment
- Water resources
- Integrated approaches to environmental management
- Water quality
- Environmental health
- Environmental pollution
- Rainfall
- Surface water
- Groundwater
- Livelihoods and water use
- Land and river management
- Water pollution control
- Environmental assessment process
- Types of environmental assessment
- Mitigation of impacts

28 September 2020 – 29 January 2021

### Research Methods

- Research methodology
- Literature review
- Variation and sampling
- Physical and environmental data
- Social and economic data
- Ethics and risk
- Data gathering
- Participatory methods
- Data management
- Assessment tools
- Quantitative data presentation and analysis
- Qualitative data presentation and analysis
- Communication and advocacy

28 September 2020 – 29 January 2021

## SEMESTER 2 – CORE MODULES: February – June

### Management and Operation of Water Utilities

- Urban water supply
- Water sector overview and typical reforms
- Introduction to water distribution
- Introduction to water treatment
- Operation and maintenance
- Developing services and organizations
- Utility financial statements, ratios and tariffs
- Demand and willingness to pay issues
- Non-revenue water
- Serving the urban poor
- Customer services and marketing
- Developing human resources
- Managing organizational change
- Public-private partnerships
- Cost recovery and tariffs
- Case study

1 February 2021 - 16 June 2021
Household and Communal Sanitation Management  1 February 2021 - 16 June 2021

- Sanitation in context
- Hygiene promotion
- Behaviour change
- On-site rural sanitation
- Sanitation in small town, peri-urban and informal urban settings
- Accessibility: design criteria and features
- School sanitation
- Promotion and management of sanitation
- Community Led Total Sanitation
- Community Led / School Led Total Sanitation: achieving sustainable outcomes
- Case study: rural sanitation
- Institutional support
- Developing capacity and innovations
- Sanitation at scale: the enabling environment
- Case study: managing innovation

Urban Sanitation Management  1 February 2021 - 16 June 2021

- Institutions for urban sanitation
- Strategic approaches to sanitation provision
- Cost recovery and tariffs for non-networked sanitation
- Wastewater treatment
- Sewerage
- Surface water management
- Latrine emptying and transportation of faecal sludge and septage
- Sanitation as a business
- Strategic urban site planning
- Shared sanitation in informal settlements
- Sanitation marketing
- Service-based networks: sanitation service chains and faecal sludge management
- Managing treatment and disposal facilities

SEMIESTER 2 – OPTIONAL MODULES: February – June  (choose one)  15 credits

Disaster Risk Management  1 February 2021 - 16 June 2021

- The impact of disasters globally
- Global urbanism
- International and national approaches to disaster risk management (DRM)
- Natural hazards
- Man-made threats in urban environments
- Increasing the resilience and sustainability of the built environment
- The role of construction professionals
- Structural adaptation principles
- Earthquake engineering
- Flood mitigation
- Counter-terrorism measures
- Integrating sustainable DRM and urban resilience into construction practice
- DRM strategies
- Managing disaster risks in global cities
- Case study

Humanitarian Water, Sanitation and Hygiene  1 February 2021 - 16 June 2021

- Introduction to emergencies and the role of water supply and sanitation
- Engineering assessments in emergencies
- Stages of an emergency
- The role of sphere in decision making
- Key stakeholders and their roles
- Dealing with vulnerable populations
- Water and sanitation contributions to epidemic control
- Disposal of dead bodies
- Exit strategies
- Managing emergency interventions
- Management of people
- Managing organizations
- Provision of water in emergencies
- Provision of sanitation in emergencies
- Provision of solid waste management in emergencies

Research Dissertation  60 credits

Research Dissertation  June – September each year (after completion of 15 credit modules)

The aim of this module is to provide the student with experience of the process and methodology of research by defining and studying (on an individual basis) a complex problem in a specialised area relating to their degree.

<table>
<thead>
<tr>
<th>Level of award</th>
<th>Modules studied</th>
<th>Max. duration</th>
<th>Credits studied/required</th>
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<tr>
<td>Master of Science (MSc)</td>
<td>9</td>
<td>5 years</td>
<td>180 / 160</td>
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<tr>
<td>Postgraduate Diploma (PGDip)</td>
<td>8</td>
<td>5 years</td>
<td>120 / 105</td>
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<tr>
<td>Postgraduate Certificate (PGCert)</td>
<td>4</td>
<td>3 years</td>
<td>60 / 60</td>
</tr>
<tr>
<td>Professional Development (PD)</td>
<td>1 - 3</td>
<td>1 - 3 semesters</td>
<td>15 (per module)</td>
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Study in the UK or by Distance Learning

Why choose to study at Loughborough?

Choose to study at Loughborough and complete your MSc in one year. Our staff, many of whom have extensive practical in-country work experience, are readily accessible to help you during your studies. You will learn from your peers too, who typically arrive with experiences to share from many different countries.

The School of Architecture, Building and Civil Engineering has excellent laboratory facilities which include equipment for field sampling, analysis of water and wastewater, and hydraulics experiments. Dedicated water laboratory staff are specialists in pollutant analysis, hydraulics and continuous trials.

Other outdoor facilities for student practical exercises during the programmes include the largest single-site collection of handpumps used for maintenance training. Other practical activities include latrine slab construction; flow measurements; and water quality sampling and analysis. Field visits are made to relevant UK facilities.

Why choose to study by Distance Learning?

Distance learning enables you to learn new knowledge and develop skills whilst maintaining existing employment. This has a number of benefits to both you as a student and to your employer.

- You will be able to directly apply new skills and knowledge and thus reinforce your learning, and at the same time become a more valuable asset to your employer.
- Employers can maintain continuity and also develop their workforce.
- You can learn and study flexibly and at your own pace, for up to a period of five years if you wish.
- The cost of study is spread over a longer time period and can be paid on a module-by-module basis.

Our learning materials are carefully designed to be comprehensive and easy to follow. At the start of each module, students will be able to access these materials online and on a USB pen drive for portability. The online materials include study guidance; a set of highly illustrated self-study notes; additional reading materials; and subject-specific references and texts.

Fees

<table>
<thead>
<tr>
<th>MSc total cost</th>
<th>Study by Distance Learning</th>
<th>MSc total cost</th>
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<tbody>
<tr>
<td>UK/EU: £10,950</td>
<td>UK/EU: £9,300*</td>
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<td>International: £23,500</td>
<td>International: £19,100*</td>
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<td>15 credit modules</td>
<td>15 credit modules</td>
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<td>International: £1,958</td>
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<td>UK/EU: £3,650</td>
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<tr>
<td>International: £7,834</td>
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* We regularly secure scholarships and bursaries in support of our students. Check out our website for latest details at www.lboro.ac.uk/research/wedc/programmes/wmfd/

Professional development

Most modules can be studied individually as part of your professional development. This will be useful to develop your knowledge and skills in a particular area.

A lower standard of entry is required when studying individual modules for professional development than for our main programmes. If you achieve a mark of 50% or more in each of four relevant modules studied by this route it may be possible to upgrade to the award of Postgraduate Certificate. It may also be possible to then go on to complete a Diploma or an MSc provided all your studies are completed within five years.

Join a global community of students!

Students from all over the world visit Loughborough to study or study by distance learning. Countries include:

Australia; Bahrain; Barbados; Bhutan; Botswana; Burundi; Canada; China; Colombia; Czech Republic; Eritrea; Ethiopia; France; Germany; Ghana; Greece; Holland; India; Indonesia; Iran; Ireland; Italy; Jamaica; Japan; Kenya; Laos; Malawi; Malaysia; Nigeria; Pakistan; Portugal; Russia; Sierra Leone; South Africa; South Sudan; Spain; St Vincent; Sudan; Switzerland; Tanzania; Trinidad and Tobago; Uganda; UK; USA; Vietnam; Zambia; and Zimbabwe.
Assignments
As you study, you will be required to submit assignments. Assignments are your response to sets of questions which are provided to you at the start of the module. There are no exams.

There are two assignments to submit for each module and for each there is a specified date by which an electronic copy, must be delivered to the WEDC Administration Office.

The weighting of marks differs for each assignment, normally 40% for the first and 60% for the second assignments.

Assessment
Your module assignments will be assessed at WEDC. On application, distance learners are asked to nominate a local guarantor who will be required to counter-sign each assignment to indicate that they believe it to be the student’s own work. A guarantor will require approval from WEDC. A guarantor is not required for UK-based students. All assignments are checked electronically for plagiarism.

Feedback
Feedback is essential to the learning process and is therefore an integral feature of both the UK-based and distance learning programme options. You are encouraged to meet or correspond with your Module Tutor in person or, for distance learners by telephone, email or a web-based module forum. The use of Skype may be an additional option. Feedback takes the form of a mark and constructive advice from the module or programme tutor sent to you by email, usually within three weeks of an assignment’s submission date.

Study schedules and student inputs
Each module (except Research Dissertation) is based on an estimated total of 150 hours of study. This includes lecture attendance (for UK-based students), the study of the module notes (distance learners spend longer on this), additional reading and completion of the assignments. The Research Dissertation may need up to 600 hours of work. All modules with the exception of Research Dissertation must be undertaken within a single semester (usually 18 weeks).

The semester period allows time for study, submission of assignments and feedback on the first assignment. It also provides the opportunity for more than one module to be taken simultaneously for those who have time available. You must complete your studies for a Postgraduate Certificate within three years, and a Postgraduate Diploma or MSc within five years from when you first register for a module.

Postgraduate credits already gained from studying modules listed on pages 4 - 5 (individually or as part of a Certificate or Diploma) can contribute towards an MSc degree, provided all modules are completed within five years.

Sharing experience with other participants
The main means of communication is by email. Students are also invited to interact with WEDC staff and their peers through LEARN, (our web-based electronic web platform) and module discussion forums.

In addition, we invite distance learning students to join available Loughborough-based presentations by Skype and webinars. For those unable to connect, we provide links for listening to the presentations at a later date.

www.lboro.ac.uk/research/wedc/programmes/wmfd/
Entry Requirements

WEDC programmes are designed to be studied at postgraduate level, so you should hold a degree or an equivalent qualification from a university accredited by the Senate of Loughborough University. Applicants for this programme require a lower second class award (2:2) or above. As the programme is delivered in English, all applicants must have an acceptable qualification in English language before they can be admitted (see www.lboro.ac.uk/international/englang/index.htm for details). If you do not possess the above qualifications, you may still be eligible if you can demonstrate you have the necessary academic skills and practical experience to satisfactorily complete the programme.

Scholarships and bursaries

From time to time scholarships are available which cover the full fees or part of the fees for study. Some students have received full-fee sponsorship for MSc programmes from the Commonwealth Scholarship Commission in the United Kingdom. Other students have been partially sponsored by the Loughborough University Development Trust which is funded by various bodies and alumni. Visit wedc.lu/wedc-scholarships for details of any current opportunities for scholarships or bursaries. You can send an email to WEDC-Admissions@lboro.ac.uk to request that we inform you whenever new scholarships become available.

How to find out more

Details about the content and intended learning outcomes of this programme and for each of the modules are shown in the programme and module specifications which can be found from the WEDC website.

How to apply

Visit www.lboro.ac.uk/study/apply/postgraduate/ for full guidance about how to make an application. This web page has links to all the necessary forms you need and the University’s online application portal. If you require help with your application, don’t hesitate to contact us. We look forward to welcoming you either in Loughborough in the UK or as a distance learner!

What our students say

“Professionally, I am a more disciplined person. Due to my enhanced capacity in the WASH sector, my career growth has been steady over the last three years from a Water and Sanitation Engineer to a Project Manager and now currently a Senior Programme Coordinator. I am optimistic that more is yet to come.”

“An extremely interesting course. I have greatly increased my understanding of the fundamental issues relating to management in a developing country context as well as boosting my personal confidence. This is paying dividends in my work and in people’s opinion and confidence in me!”

“It was a great experience … and I have fully enjoyed and benefited from the course materials provided for various modules.”

“Well structured, clearly presented.”

“A very useful experience.”

“The programme has benefited me to significantly improve my technical capacity in all dimensions of water and sanitation fields. The programme has helped me to plan, implement and monitor WASH activities in a more effective manner. I have supported technically other partners working in my area through provision of training, designing of WASH facilities and planning and responding to WASH emergencies.”

Video reviews

You can watch short video clips of our students describing their experience of studying with us. www.lboro.ac.uk/research/wedc/programmes/what-our-students-say/