



IHE
DELFT

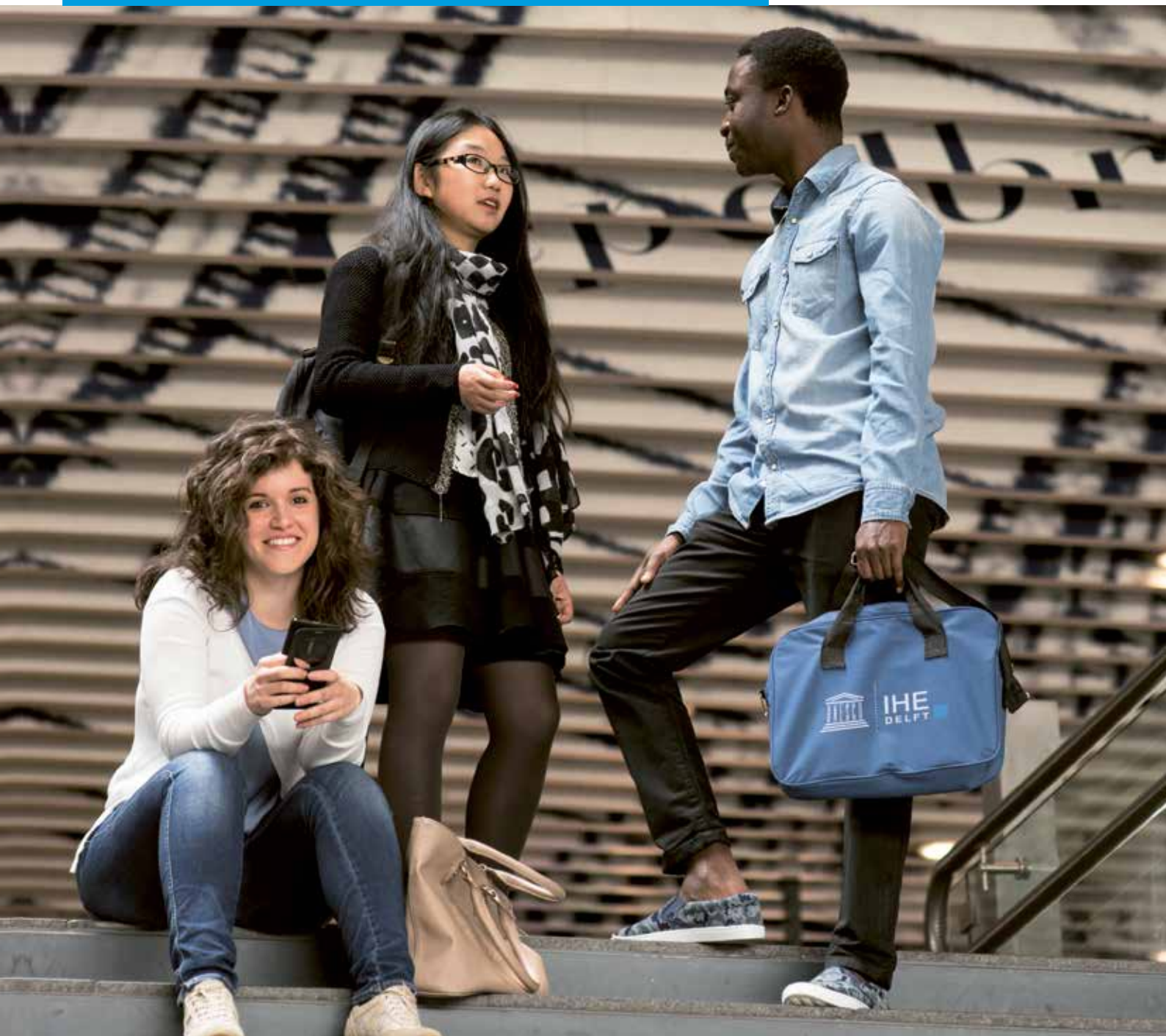
MSc Programmes
PhD Programme
Online & Short Courses

Education and Training Guide 2020

10 Reasons to Study at IHE Delft

1. More than 60 years of experience in graduate water education
2. Close ties to the UN system
3. Fully accredited programmes
4. Gateway to Dutch water know-how
5. Learner-centred, active learning
6. Personal guidance and mentoring
7. Internationally renowned lecturers and professors
8. A truly international environment
9. Live and study in a vibrant city in the heart of Europe
10. Increase career prospects and become part of the largest global water alumni network

MEET OUR STUDENTS



Graduate education at IHE Delft is science-based and highly relevant for those interested in water and development.



WELCOME TO IHE DELFT

The theme of UN World Water Day 2020 is Water and Climate. Water is the primary medium through which we will feel the effects of climate change. Water availability is becoming less predictable in many places and increased incidences of flooding threaten lives and livelihoods, destroy sanitation facilities and contaminate water sources. In some regions, droughts are exacerbating water scarcity and thereby negatively impacting people's health and productivity.

Today more than 2 billion people live in countries experiencing high water stress. The situation will likely worsen as populations and the demand for water grow and as the effects of climate change intensify. The UN Convention to Combat Desertification states that with the existing climate change scenario, by 2030, water scarcity in some arid and semi-arid places will displace between 24 million and 700 million people.

As a member of both the UN and UNESCO Water Family, the role of IHE Delft in helping to mitigate the effects of climate change is increasingly vital in educating water professionals throughout the world, to contribute to solutions to these global water problems.

When we meet alumni, following their studies at IHE Delft, they often use the word 'transformation' when describing the impact of their experience at our Institute. They mean much more than improving their career prospects or chance of promotion. The international environment that the Institute provides, learning from peer students, the world-class academic staff and the vibrant nature of IHE Delft, all make it an unforgettable, positive experience.

In addition to its wide range of programmes and specialisations, IHE Delft provides its education in many formats to cater to the diverse needs of our students: full-time, Delft based Master's courses; joint or double degrees, spending time in different countries; short courses for those with limited time and specialised needs; online to fit in with work and life commitments. Tailor made training courses are designed for the specific requirements of a group and run in Delft or in the participants' country, to suit their requirements.

Since its establishment in 1957, the Institute has educated over 23,000 scientists, engineers and decision-makers from more than 190 countries. Many alumni reach senior positions in their home countries and become nationally and internationally recognised experts.

We invite you to come and join us in the urgent quest to meet the United Nations' Sustainable Development Goals. If helping to solve global water challenges excites you, come and join our dynamic, international community at IHE Delft and together we can work towards a better, safer and more sustainable 2030 and beyond.

A handwritten signature in black ink, which appears to be 'E. Moors', written in a fluid, cursive style.

Professor Eddy Moors, Rector

IHE Delft is located in the historical centre of Delft, a city of great charm characterized by ancient canals, beautifully kept monuments and historic squares. It is also a young, vibrant city with a large student population and an ideal starting point to explore the Netherlands and Europe.

Delft, Netherlands, Europe



Water has always played an important role in both the Netherlands' and Delft's history.



A HOME IN THE HEART OF EUROPE

Delft is known for its historic town centre with canals, Delft Blue pottery, painter Johannes Vermeer and scientist Antony van Leeuwenhoek and its association with the royal House of Orange-Nassau.

Since Delft is a university city, there are plenty of cultural events to be enjoyed throughout the year, as well as museums and theatres. There is also an abundance of cafés and restaurants, catering to every taste and making time spent away from your studies an experience in itself.

Water has always played an important role in both the Netherlands' and Delft's history and continues to do so today. Therefore, it is no surprise that many science and technology organizations related to water have chosen Delft as their home base. IHE Delft maintains close working relationships with various Delft-based research and education institutes, such as the Delft University of Technology, Deltares and the Delfland Water Board.

Delft is well connected to the Dutch public transport system, making The Hague, Rotterdam, Schiphol International Airport and Amsterdam easily accessible. It is a great location to start exploring other places of interest, both within the Netherlands and Europe.



YOUR INTERNATIONAL EXPERIENCE

Staff at the Institute simplify your transition to the Netherlands by organizing the annual 'Introduction Days'. In these two weeks, they help you deal with various formalities such as residence permits, health insurance and bank accounts. Other activities during this period are an excellent way for new students to meet one another and receive the friendship and advice of senior students and the Institute's staff.

Throughout your study period, IHE Delft organizes many social, cultural and sports events, allowing you to get the most out of your free time. Every year, trips are organized that stimulate you to discover Dutch culture, Delft, the Netherlands and Europe.

THE INSTITUTE'S FACILITIES AND SERVICES

- Modern teaching and research laboratories in the field/treatment of: wastewater; faecal sludge; drinking water; process technology; aquatic ecology; analytical laboratories, including molecular- and microbiology, equipped with state of the art instrumentation;
- A library with online connections to national and international resource centres, and a reading room containing many international journals and magazines;
- Modernised classrooms and multifunctional lecture theatres;
- A fully equipped auditorium seating 300 and a videoconferencing studio;
- Notebooks for all participants and extensive computing facilities;
- Flexible and group work-spaces;
- A restaurant offering a wide variety of meals and snacks;
- Social and cultural activities, sports facilities and events;
- International student health and counselling services;
- An in-house prayer and meditation room.

HOUSING

Delft is a university city, and therefore accommodation is scarce and expensive. This is why IHE Delft provides fully furnished accommodation in Delft for all students of the Institute's Delft-based programmes, available upon arrival and for the duration of the study period. Advice and assistance will be provided to students of all other programmes.

Studying at IHE Delft is a life-changing experience. You will be exposed to an intercultural environment characterized by plurality and diversity of ideas, experiences and disciplines resulting in intellectual, professional and personal growth.

A Network for Life



Today, several ministers, heads of water-related institutions and top scientists around the globe are IHE Delft graduates.

MAKE IHE DELFT YOUR NETWORK

IHE Delft acts as a hub for partnerships and networks across the globe, linking global knowledge to local sector agendas. The Institute collaborates with an extensive range of public and private partners, comprising a wide range of fields and technical cooperation in human and institutional capacity building. These partners are at the international, United Nations, EU and national level. They include education and research institutes, knowledge centres, the (Dutch) Water Sector, funding agencies, NGOs and governmental organizations. These partnerships add value to many of the Institute's activities.

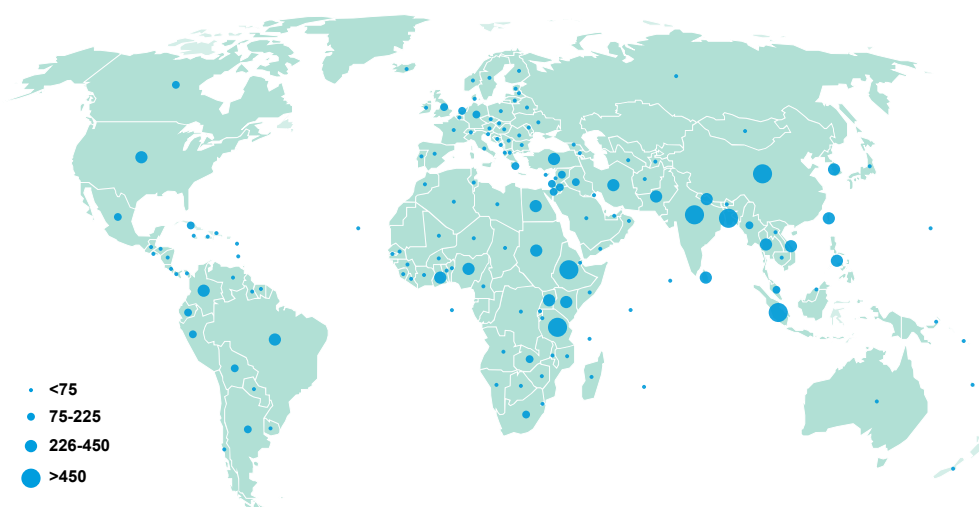
The Institute maintains close working relationships with many regional and local networks, which facilitates the transfer of scientific and technical expertise, strengthening the capacity of water professionals and institutions. Many of these networks are thriving professional communities, encouraging joint research, knowledge sharing and the development of sustainable water solutions.

As a student, you profit from the professional contacts the Institute has made since its inception. When studying at IHE Delft, you can expect to meet leading figures from the international water arena. Your professors and lecturers will put your study in the context of global dialogues and targets such as the Sustainable Development Goals.

ALUMNI NETWORK

After graduation, you will be part of the largest partnership network of water professionals in the world. IHE Delft will continue to facilitate the communication between you, your former classmates, and the Institute. You will receive news about the Institute and the water sector on a regular basis through e-zines. You are invited to join an Alumni Association in your country, independent associations where you can meet fellow alumni and enjoy social and professional activities.

With a IHE Delft degree you will have taken a major step in your professional career. Many alumni reach prominent positions in which strategic, managerial, policy and decision-making components become major responsibilities of their functions. You will, over time, wish to keep your skills and knowledge refreshed, to stay up to date with changing professional demands. To cater to this need, the Institute's refresher seminars are held annually in different continents, covering themes of direct relevance to these regions. Also, alumni are entitled to discounts on the tuition fee for attending IHE Delft short and online courses, and purchasing publications.

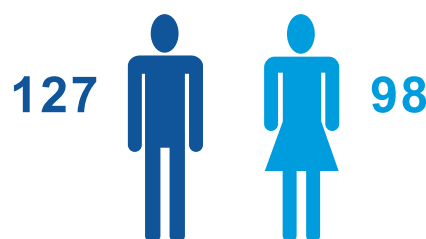
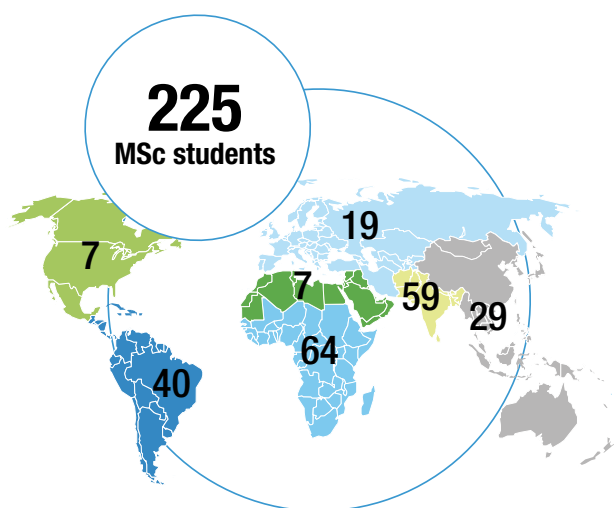


Alumni per country



MSc Programmes

IHE Delft offers five Master of Science programmes, with a total of 17 specializations. The MSc Programmes educate students primarily from developing countries and countries in transition, as well as students from developed countries with a strong interest in water and development, to become creative problem solving professionals in the field of water and environment.



AVERAGE
AGE **29**

MSc students per region of origin – academic period 2018/2020

5

MSc PROGRAMMES

The MSc curricula are geared towards supporting a greater understanding of sustainable development and the inherent challenges in achieving that. In the programmes, a mix of modern knowledge transfer methods includes lectures, workshops, role-play, games, study tours, and field visits. Teaching staff and students come from all over the world and partnerships with related institutes and universities play an important role in teaching. The educational environment can therefore be called truly international; it is characterized by pluralism and diversity and stimulates students, while progressing in their studies, to develop communication skills that will enable them to disseminate their professional knowledge and skills effectively.

The Delft-based MSc specializations **Db** start in October and take 18 months, the first year of which consists of taught modules that are given at IHE Delft. After successful completion of the taught modules, you will do individual research for a six-month period. The research deals with a practical or theoretical problem and may be carried out in collaboration with an organization outside the Netherlands, for example in the home country. Often, field data collection, laboratory or computer analysis work are part of the research. Research is always completed with a thesis and a public presentation of results.

The so-called joint programmes **J** are MSc specialisations developed with and offered in collaboration with partner institutes. These joint programmes have varying start and end dates, and part of the programme is given at a partner institute in another country.

MSc PROGRAMME IN ENVIRONMENTAL SCIENCE

Applied Aquatic Ecology for Sustainability	Db
Environmental Planning and Management	Db
Environmental Science and Technology	Db
Environmental Technology and Engineering	J Eu
Limnology and Wetland Management	J

MSc PROGRAMME IN URBAN WATER AND SANITATION

Sanitary Engineering	Db
Urban Water Engineering and Management	J
Water Supply Engineering	Db

MSc PROGRAMME IN SANITATION

Sanitation	Db
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MSc PROGRAMME IN WATER MANAGEMENT AND GOVERNANCE

Water Cooperation and Diplomacy	J
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THEMATIC PROFILES

Water Conflict Management	Db
Water Quality Management	
Water Resources Management	
Water Services Management	

MSc PROGRAMME IN WATER SCIENCE AND ENGINEERING

Flood Risk Management	J Eu
Groundwater and Global Change - Impacts and Adaptation	J Eu
Hydraulic Engineering and River Basin Development	Db
Hydraulic Engineering - Coastal Engineering and Port Development	Db
Hydroinformatics - Modelling and Information Systems for Water Management	Db
Hydrology and Water Resources	Db
Land and Water Development for Food Security	J Db
Sustainable Urban Water Management	Db

Eu Joint programme offered under the European Erasmus Mundus framework.

For extra information on these programmes please see pages 12-21.

ACCREDITATION

The Institute's MSc programmes are accredited under legislation of The Netherlands. As such, the IHE Delft Foundation is the party legally responsible for the Institute's education and authorized to issue its degrees.



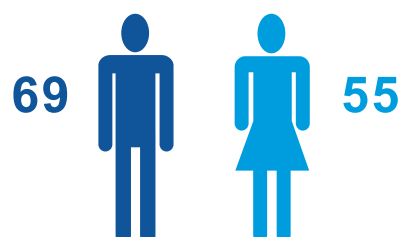
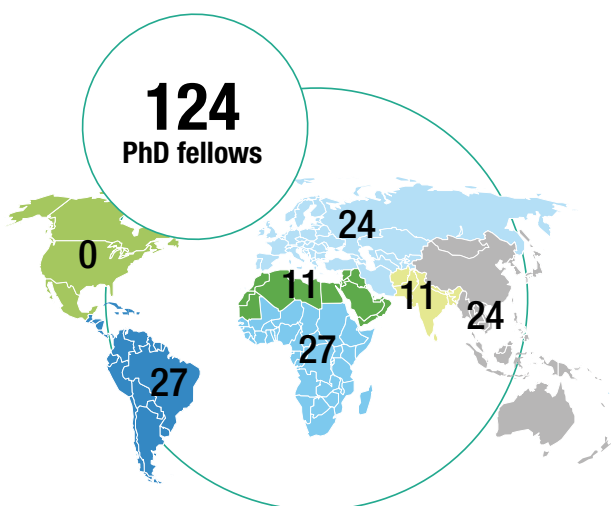
KEY VALUES

IHE Delft graduates are expected to be critical, creative and independent thinkers and effective water professionals, who are able to connect and engage with a range of disciplines such as natural sciences, social sciences and engineering. They are expected to be able to work in environmental and societal complex contexts, with the ability to work productively in teams and take leadership. To achieve these learning outcomes education at IHE Delft is implemented in partnership and characterized by the following key values:

- International and interdisciplinary
- Science based but anchored in professional practice
- Student centred, on the basis of aligned teaching and active learning
- Relevant, geared towards creating impact on the ground
- Open, transparent and accessible
- Combining knowledge and transferrable skills

PhD Programme

The PhD Programme leads to a deepening in a field of specialization. PhD fellows undertake scientific research, often with conclusions that directly influence their own country or region. At IHE Delft, more than 120 PhD researchers from around the world are brought together to participate in problem-focused, solution-orientated research into development issues, resulting in an inspiring research environment.



AVERAGE
AGE **37**

PhD students per region of origin – 2018

PhD PROGRAMME

Conducting research at IHE Delft is a unique experience, as you will work together with other researchers in a multinational and multidisciplinary environment. Your research will provide a firm academic foundation for you to play your part in providing solutions to the global challenges of sustainable water supply, quality and governance.

The PhD research of IHE Delft crosses the spectrum from engineering, information systems, habitat quality and the social and political realities that affect the use and abuse of water. All PhD fellows work within specific Chair Groups, but are encouraged to collaborate internally and externally to produce high quality results within IHE Delft's research themes. Work often occurs within larger groupings and can include linking to the research topics that are a requirement of the institute's MSc programme and/or embedded in larger multidisciplinary projects.

You will often do research in collaboration with the Institute's extensive network of research institutions, governmental and private sector partners throughout the world. Research often includes time in Delft and abroad, mostly in the home country of the research fellows. This directly supports the capacity development mission of the institute and the agenda of the UN Sustainable Development Goals.

All PhD fellows are registered both with the IHE Delft Graduate School and with a partner university. This is normally a Dutch university with the legal authority to award the degree of PhD, although we also have some joint PhD programmes as part of funded networks of research. The time span of a PhD programme is usually planned for four years. The degrees are fully recognised in all parts of the world.



IHE Delft is a partner member of SENSE (Research School for Socio-Economic and Natural Sciences of the Environment), a national research school in the Netherlands, which connects more than 10 universities and research institutes. The aim of SENSE is to educate and train PhD fellows in disciplinary and multidisciplinary environmental issues, to promote scientific research on environmental change, and to support society and policy makers with independent and scientifically based expert advice. Through IHE SENSE also connects with other Graduate Schools including that of TU Delft and the Research School for International Development (CERES) that has a more social science focus.

IHE DELFT INTERNATIONAL GRADUATE SCHOOL IN WATER AND DEVELOPMENT

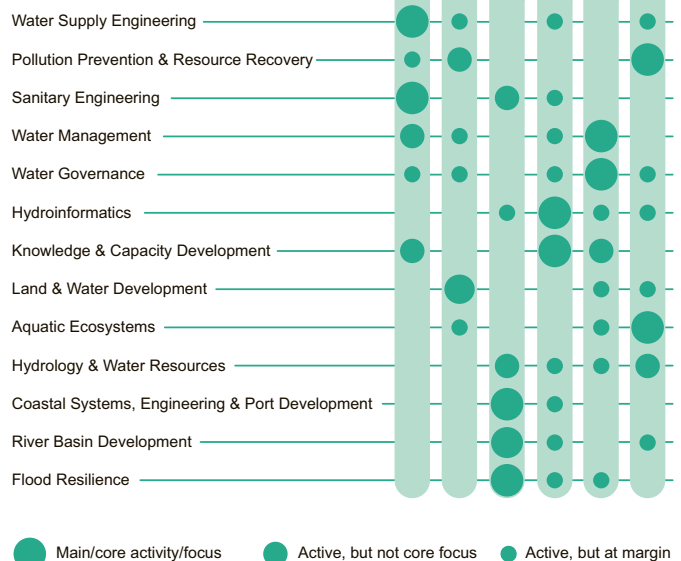
Sustainable water use is frequently characterised by complex, so-called 'wicked', problems where traditional assumptions of knowledge, causality and predictability may not apply. The fundamental importance of better connection between science, policy and society makes new demands on PhD graduates, who are increasingly expected to possess, not only a deep knowledge of their own discipline, but are additionally capable of placing that knowledge in a wider understanding of societal needs.

IHE Delft is well placed to play a significant role in supporting PhD level education that is targeted to water related problems, not only in the global south and countries in transition, but in an increasingly globalised world.

In 2015 IHE Delft established the Graduate School in Water and Development, to create a hub for a vibrant and an intellectually exciting research and development environment at the heart of the Institute. The vision of the Graduate School is to develop a stimulating research environment for PhD fellows and the staff of the Institute. PhD Fellows produce the majority of the research output of the Institute, and future developments are to further support academic quality and relevance in meeting the serious challenges of sustainable water use in increasingly difficult situations. Research activities are supported by an individual training plan that build competencies directly related to the specific research programme, as well as wider interactive and awareness skills that are needed in a professional environment. Each PhD fellow develops his/her Training and Supervision Plan (TSP) that builds verified doctoral education credits.

Research is conducted by the following chair groups:

13 Chair Groups





Online and Short Courses

IHE Delft aims to make water education accessible to an increasing number of students and professionals. The Institute achieves this by providing online and on-campus short courses, tailor-made training, a diploma programme and open courseware on a wide array of topics.

ECTS

It is possible to earn European Credit Transfer System (ECTS) points for several online and short courses. For the latest information on earning ECTS points, including regulations and costs, please refer to our website.

DISCOUNTS

Discounts on the tuition fee of online and short courses apply to the following:

- 30% for IHE Delft Diploma alumni
- 10% for UN family staff members
- 10% for groups of 5 or more (provided that the course starts at the same time and a group application has been sent)

Please note that discounts cannot be combined.

19

ONLINE COURSES

71

SHORT COURSES

10

SUMMER COURSES

ONLINE COURSES

IHE Delft offers high quality online courses in many of the topics of significance in the water sector. The online courses are beneficial to professionals working in public and private institutions, NGOs, and academic institutions, and are ideal for professionals with jobs and families, who want to upgrade their skills from the comfort of their home or office. A typical online course's total study load is 140 hours. A four month course thus takes around 8 hours of work per week. The guidance by lecturing staff during these online courses is intensive, and there are many opportunities to get feedback from and interact with fellow participants.

The web-based Moodle eCampus is used to disseminate training material and for communication. It contains learning tools such as presentations, videos featuring case studies from various countries, interviews with experts, quizzes and audio material, as well as a discussion area, where fellow participants and lecturers can meet each other. All courses run completely via eCampus, but course materials can be sent on CD as well.

For a list of online courses in 2020, see page 22.

TAILOR-MADE TRAINING

Tailor-made courses are designed for clients whose staff require training in specific topics or seek to develop a common knowledge base to address future challenges. The focus of the courses can be technical, managerial, strategic or operational, depending on the client's priorities.

The training can be organized for groups of various sizes, from one or multiple organizations, sectors or regions. The trainings can vary in length and depth, ranging from a course lasting several days, to a tailored MSc programme in which regular components are mixed with case studies and modules requested by the client. Training can be delivered on-site or using IHE Delft in Delft as a base, or a combination of the two. A mixture of training techniques are utilised in creating tailor-made trainings, including lectures, workshops, role-plays, case studies and study tours to project sites throughout Europe or the region where the training takes place.

For advice on how IHE Delft could be of service to your organization, contact IHE Delft's Liaison Office. Their contact information is available from the website, see bottom of page.

ON-CAMPUS SHORT COURSES

IHE Delft conducts a wide range of short, intensive and highly specialized courses which are aimed at upgrading and refreshing the knowledge and skills of mid-career and senior experts. They are meant for professionals - or groups of professionals - with a specific area of interest and a limited amount of time.

Short courses usually are one to three weeks in length. The focus and content vary from specialized and technical matters to challenges and approaches in management. Didactical methods used in these short courses include lectures, individual or group exercises in the classroom, at the computer, or in the laboratory. Fieldwork, excursions and field visits to relevant institutions are often part of a short course, allowing the participants to experience practical examples of the theory offered. Through case studies, role-play and workshops, content is made more interactive, and know-how of participants is shared.

For a list short courses in 2020, see pages 24-25.

PROFESSIONAL DIPLOMA PROGRAMME

The Graduate Professional Diploma Programme (GPDP) disseminates relevant knowledge and know-how to professionals who do not have the means or time to pursue a full-time Master's course in that subject, or who already have an MSc Degree in a related field and wish to specialize.

In the programme you will follow a sequence of four to five online courses, on-campus short courses or a combination of both. To ensure that the programme fits your personal circumstances, you select the courses of interest and a personal study plan will be designed in collaboration with a study advisor. The total duration of the programme depends on this study plan and varies between 1.5 to a maximum of 4.5 years.

For extra information on these tracks and courses, see page 23.

SUMMER COURSES

Summer courses are meant to bring together students and professionals with different academic or professional backgrounds and explore a cross-cutting issue. Course topics include: water diplomacy, communication, leadership, entrepreneurship and gender. The courses are 5 days and usually held in August.

Check our website regularly or subscribe to our e-newsletter to stay tuned with updates about the 2020 summer courses.

OPEN COURSEWARE

IHE Delft freely provides online educational materials, including recorded lectures and downloadable materials such as course notes, exercises, tools and public domain software on a wide variety of topics.

For a list of open courseware courses, see page 22.



Delft-based MSc Programmes

START PROGRAMME
3rd week in April

TAUGHT

APPLICATION DEADLINE
31st of December

**12 MONTH
PROGRAMME
2020–2021**

MSc in Sanitation

2019

SEP OCT NOV DEC

2020

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

APPLICATION DEADLINE
1st of August

INTENSIVE LEARNING

Due to the breadth and depth of subjects covered in the MSc programmes, please be advised that in particular the taught part is intensive. We advise students to prepare themselves for a challenging, but rewarding educational experience.

**18 MONTH
PROGRAMME
2020–2022**

START PROGRAMME
3rd week in October

THE DELFT-BASED, 12-MONTH CURRICULUM OF THE MSc PROGRAMME IN SANITATION

The Delft-based, 12-month curriculum of the MSc Programme in Sanitation consists of 71 ECTS credit points and has a Taught Part (40 ECTS credit points) and a Thesis Research Part (31 ECTS credit points).

The taught part has a modular structure, comprising 13 modules ranging from 1 to 6 weeks' duration. The individual thesis research, follows on completion of the taught programme, although, in order to avoid a 'cold start' and to guarantee sufficient time, students will be allocated a research topic and will start preparing for their individual research early on in the programme.

DOWNLOAD PDF OF THIS BROCHURE



THE DELFT-BASED, 18-MONTH CURRICULA OF THE MSc PROGRAMMES

The Delft-based, 18-month curricula of the MSc Programmes consist of 106 ECTS credit points and have a Taught Part (61 ECTS credit points) and a Thesis Research Part (45 ECTS credit points).

The one-year taught part, has a modular structure and after successful completion, you will do individual research for a six-month period. The research deals with a practical or theoretical problem and may be carried out in collaboration with an organization outside the Netherlands, for example in the home country. Research skills are also built up during the taught part.

JOINT PROGRAMMES

Our Joint Programmes have varying start and end dates and a different duration. See website for more information.

SCHOLARSHIPS

Most scholarship programmes have a deadline which is much earlier than the deadline of our MSc Programmes. See: www.un-ihe.org/scholarships

APPLICATION

You can apply for admission to the MSc Programmes online at our website throughout the year, but make sure to apply well before the application deadline, so you will have time to make the financial arrangements and prepare for your studies at IHE Delft.

ADMISSION REQUIREMENTS

- Bachelor Degree in a related field of study.
- English Language (IELTS: 6.0 / TOEFL iBT: 87 overall or PBT: 502/TWE 4.5).
- Two or more years of work experience in a related field is preferred.
- The MSc Programme in Sanitation also requires an entry exam.

THESIS
RESEARCH

GRADUATION

AFTER GRADUATING

- Join the IHE Delft Alumni Community
- Resume or start your work in the water sector
- PhD Programme - 4 years (see page 8)

STAY FRESH

IHE Delft promotes Life Long Learning: After a few years, enrol in a refresher course, or a short or online course.

2021

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

2022

JAN FEB MAR APR

TAUGHT

THESIS
RESEARCH

MSc in Environmental Science
MSc in Urban Water and Sanitation
MSc in Water Management and Governance
MSc in Water Science and Engineering

GRADUATION

MSc PROGRAMME IN ENVIRONMENTAL SCIENCE



Develops the necessary knowledge and skills to contribute to a sustainable and innovative future for the protection and management of water and natural resources.

Integrating science, technology and policy making

As the world enters a period of increasing pressures that cause impact on the environment and human well-being, sustainable development needs to integrate scientific knowledge with technological developments and effective policies. The MSc programme in Environmental Science builds the knowledge and skills necessary to meet the environmental challenges in an integrated way. Each of the programme's specializations provides the essential in-depth knowledge, supported by a broader set of skills, so that graduates of the programme can play their part in a sustainable and innovative future for protection and management of water and natural resources.

Aim of the programme

The unsustainable management of natural resources hampers human development and exacerbates human inequalities. Pollution, depletion of natural resources, the disintegration of ecological functions, and ineffectual policies are matters of local, regional and global concern. Economic development and rising living standards in the developing world, set against increased pressures on the environment, contribute to the urgency of these problems. Preventing further degradation of the environment, and the consequent damage to human society, requires new approaches for sustainable interactions between people and their environment. Sustainability depends on balancing use and conservation of environmental resources, but the challenge is to increase food supply and human welfare while minimising and counteracting the negative impacts on the environment.

To find sustainable solutions and improve the quality of human life, we must first understand the processes that sustain natural systems, how these systems function and how they interact with one another and with human society. The MSc programme in Environmental Science develops the understanding of these processes and how to apply this knowledge for better natural resource management in your day-to-day work. During the programme you will learn to analyse and assess environmental systems and problems; be able to propose and plan for sustainable solutions and develop technical measures; and

understand the planning and management dimensions of addressing environmental problems. In class ample examples from practice are used to illustrate and reflect on theory and concepts, while group work is applied to gain the necessary skills to address problems in multi-disciplinary teams. During the final phase of the programme, you will produce an independent scientific research project that brings together the knowledge, skills and the critical thinking developed through the individual modules of the programme.

Programme contents

The MSc programme in Environmental Science equips professionals with the necessary capacities for sustainable natural resource management by offering a systems approach. This means you will investigate subsystems and their interactions at global, regional and local scale without losing sight of the overall picture. The programme balances a thorough knowledge of the disciplines taught by each of the programme's specializations, and the added value of bringing these disciplines together in one coherent programme.

Desired profile

Admission to the programme is open to students and professionals with an interest in environmental sciences and in maintaining environmental integrity to support human development, especially for those interested in helping meet future water and environmental challenges in developing countries and countries in transition. Suitable academic backgrounds include a BSc or MSc in natural sciences, chemistry, environmental science, agriculture, geography, environmental economics, planning and management or engineering. Professional experience in a relevant area is desirable.

Basic knowledge of mathematics, physics and chemistry is a prerequisite. Computer literacy is a valuable asset. Good conversational, reading and writing capabilities in the English language are essential to successfully complete the programme.

CAREER

Graduates of the ES programme start or resume a career dealing with water policy and planning, research and/or environmental regulation in the water sector or related sectors such as infrastructure, energy, agriculture or mining. Careers include working at:

- Public administration: central and local government (urban water and wastewater authorities, water boards, water and environment ministries);
- Private sector, e.g. consulting engineering firms;
- Academia and research institutes;
- NGOs and international organizations (UN, Worldbank, etc.).

SPECIALIZATIONS

APPLIED AQUATIC ECOLOGY FOR SUSTAINABILITY

You will gain a thorough understanding of the natural processes in aquatic ecosystems and be able to apply this knowledge to sustainable management for healthy ecosystems and good water quality in a multidisciplinary setting.

Prospective Students

This specialization is designed for students and professionals who have a strong interest in water quality, sustainable management and conservation of aquatic ecosystems, including rivers, swamps, lakes, and estuaries. Suitable academic backgrounds include natural sciences, environmental science, biology, fisheries and agriculture.

Topics

- Applied Ecology and Bio-assessment
- Environmental Systems Analysis
- Water Quality Assessment and Monitoring
- River and Floodplain Rehabilitation
- Aquatic Ecosystems: Processes and Applications
- Wetlands for Livelihood and Conservation

Delft-based MSc specialization

ENVIRONMENTAL PLANNING AND MANAGEMENT

You will acquire the knowledge and skills to reflect on and implement environmental planning and management from an interdisciplinary perspective and you will be able to support policy and decision-making for sustainable and strategic water and environmental management in multi-actor systems in urban and rural contexts.

Prospective Students

The specialization is intended for mid-career professionals and students interested in using environmental planning and management, combining environmental and social sciences, to enhance the integrity of the environment to support human development. Suitable academic backgrounds include natural sciences, environmental science, agriculture, social sciences, geography, environmental economics, planning and management.

Topics

- Water and Environmental Law
- Environmental Systems Analysis
- Water and Environmental Policy Analysis
- Environmental Planning and Implementation
- Environmental Assessment for Water-related Policies and Development

Delft-based MSc specialization

ENVIRONMENTAL SCIENCE AND TECHNOLOGY

You will be introduced to research and development leading to technologies that address environmental problems, and apply those technologies in a context of stakeholders, managers and policy makers for appropriate remedial actions.

Prospective Students

The programme is designed for students and professionals with an interest in the development and application of technologies that contribute to the treatment of waste(water) and the recovery of energy and other resources. Suitable academic backgrounds include natural sciences, chemistry, environmental science, agriculture and engineering.

Topics

- Environmental Process Technology
- Environmental Systems Analysis
- Water Quality Assessment and Monitoring
- Industrial Resource Management and Cleaner Production
- Ecotechnologies

Delft-based MSc specialization

ENVIRONMENTAL TECHNOLOGY AND ENGINEERING

imete.eu

You will learn to apply and develop environmental technologies, with a strong focus on multidisciplinary and problem-based technology development.

Prospective Students

The programme is intended for students and professionals who are interested in deepening their knowledge of the application of environmental technologies. Suitable academic backgrounds include chemistry, biology, geology, civil or agricultural engineering, environmental or agricultural sciences.

Topics

- Environmental Microbiology (UCT Prague)
- Environmental Engineering (UCT Prague)
- Communication and writing skills for engineers I (UCT Prague and IHE Delft)
- Track "Advanced wastewater treatment technologies" (IHE Delft)
- Track "Ecotechnologies" (IHE Delft)
- Track "Air" (Ghent University)
- Track "Soil" (Ghent University)

This specialization is a joint programme offered under the European Erasmus Mundus framework with Ghent University, Belgium, and University of Chemistry and Technology, Czech Republic.

LIMNOLOGY AND WETLAND MANAGEMENT

You will learn about the structure and functioning of aquatic and wetland ecosystems for their management and wise use, and learn how to interact with stakeholders, managers and policy makers for the development of best practices.

Prospective Students

This specialization is intended for students and professionals with a special interest in one of the following topics: aquatic ecology, limnology, wetland ecosystems, or aquatic resources management. Suitable academic backgrounds include natural sciences, chemistry, environmental science, agriculture, geography, environmental economics, planning and management.

Topics

- Limnology
- Ecology of Aquatic Organisms
- Aquatic Ecosystem Management
- Lake Ecology
- Stream and River Ecology
- Wetlands for Wastewater Treatment
- Fisheries and Aquaculture
- Aquatic Ecosystems
- Data Analysis and Modelling for Aquatic Ecosystems Processes and Applications
- Wetlands for Livelihood and Conservation

This specialization is jointly offered with BOKU, University of Natural Resources and Life Sciences, Austria, and Egerton University, Kenya.

MSc PROGRAMME IN URBAN WATER AND SANITATION

Educates professionals in the fields of water supply, sanitation and integrated water engineering and management, particularly in urban areas.

Recent decades have witnessed an increasing rate of urbanization, particularly in developing regions and in countries in transition. About 80% of the world's megacities can be found in these regions. The high concentration of people in urban areas is placing enormous pressure on the local environment and on available resources. It also generates ever higher demands on municipal services such as water supply and sanitation, continuously challenged by the lack of financial and human resources.

Aim of the Programme

The MSc Programme in Urban Water and Sanitation educates professionals in the fields of water supply, sanitation and water engineering and management, particularly in urban areas. Once they have successfully completed this programme, graduates:

- Can place their profession in the wider social, economic and environmental contexts of urbanization and municipal water and infrastructure services provision;
- Will be able to contribute to the development of innovative approaches to the provision of sustainable and equitable municipal water, sanitation, environmental and infrastructure services in low and middle income countries;
- Will be able to conduct academic research independently.

SPECIALIZATIONS

SANITARY ENGINEERING

You will learn how to deal with wastewater and sludge treatment process operation, maintenance and design, including urban drainage and sewerage, centralized and decentralized systems and land-based and engineered treatment plants.

Prospective Students

This specialization is designed for students and professionals interested in achieving and maintaining water pollution control and public health. It is particularly relevant for those who are or wish to become involved in the provision of urban sanitation services. Suitable academic backgrounds include civil, environmental or chemical engineering and microbiology.

Topics

- Urban Drainage and Sewerage
- Conventional Wastewater Treatment
- Resource Oriented Wastewater Treatment and Sanitation
- Wastewater Treatment Plants Design and Engineering
- Modelling Wastewater Treatment Processes and Plants
- Industrial Effluents Treatment and Residuals Management
- Faecal Sludge Management

Delft-based MSc specialization

WATER SUPPLY ENGINEERING

You will learn to deal with technical aspects of collection, storage treatment and distribution of drinking and industrial water in an integrated way, paying attention to the choice of technologies and tools, ranging from low-cost to advanced, engineered to natural treatment systems, and large-scale centralized to small-scale decentralized options.

Prospective Students

This specialization is designed for students and engineers interested in or dealing with water quality, collection, storage, treatment, transport and distribution. Suitable academic backgrounds include civil, chemical, environmental, hydraulic and mechanical engineering.

Topics

- Unit Operations in Water Treatment
- Disinfection, Adsorption and Natural Processes for Water Treatment
- Groundwater Resources and Treatment
- Water Transport and Distribution
- Desalination and Membrane Technology
- Water Treatment Processes and Plant Design
- Decentralized Water Supply and Sanitation
- Advanced Water Transport and Distribution

Delft-based MSc specialization

URBAN WATER ENGINEERING AND MANAGEMENT

You will learn to deliver both water and wastewater services within the context of the urban water cycle, covering both technical and management aspects.

Prospective Students

This specialization is designed for students and professionals dealing with or interested in water and sanitation services and managing the urban water cycle. Suitable academic backgrounds include civil, environmental and chemical engineering.

Topics

- Drinking and Waste Water Treatment
- Water Transport and Distribution
- Urban Drainage and Sewerage
- Asset Management
- Managing Water Organizations
- Urban Flood Management and Disaster Risk Mitigation
- Urban Water Systems

This specialization is jointly offered with the Asian Institute of Technology, Thailand.

CAREER

Graduates of the UWS programme start or resume a career dealing with water and sanitation services and managing the urban water cycle. Careers include working at:

- Public administration: central and local government (urban water and wastewater authorities, urban development ministries/authorities, water and environment ministries);
- Private sector: e.g. water supply companies, consulting engineering firms;
- Academia and research institutes;
- NGOs and international organizations (UN, Worldbank, etc.).

MSc PROGRAMME IN SANITATION



A unique, internationally recognized programme, designed for completion in 12 months. The programme is based at IHE Delft in the Netherlands, in the near future, the programme will also be available at universities in Asia, Africa and Latin America.

The state-of-the-art content was developed and is delivered by the world's leading experts from academia and practice. In this practice orientated programme you will gain an in-depth understanding of urban and peri-urban sanitation and develop the skills necessary to create impact. Skills development is embedded from the start through individual coaching and tailored guidance. Preparatory (e-learning) courses and entry interviews are included. All graduates will become a member of the Global Faecal Sludge Management Learning Alliance and alumni community.

Target group

The MSc programme is dedicated to target needs and deliver specialists in a short time, with the necessary qualifications. It aims to attract talented and ambitious young and mid-career sanitation professionals, working in water supply and sewerage companies, municipal assemblies, government ministries, NGOs and consulting firms, or those hoping to in the future. Participants should have a Bachelor's degree.

Programme structure

The 71 ECTS points programme consist of a taught and a thesis research part. The taught part has a modular structure, comprising 13 modules ranging from 1 to 5 weeks' duration, including lectures, laboratory tutorials, field trips, case studies, group work, design exercises and discussions. Students will get to work in the newly constructed faecal sludge laboratory, which is the only specialist laboratory of its kind in the global north.

The individual thesis research (31 ECTS), follows on completion of the taught programme, although, in order to avoid a 'cold start' and to guarantee sufficient time, students will be allocated a research topic and will start preparing for their individual research early on in the programme. To enable students to pass the entry exam, a set of preparatory e-learning courses are available for those who may need to increase their knowledge in one or more subjects as prerequisite for the programme.

Syllabus

The programme focus is on non-sewered sanitation, as sewerage-based sanitation is the subject of the complementary specialization in Sanitary Engineering. The programme design and module plans have been prepared in cooperation with partners from academia and practice. The input from practice was essential, as the new programme has a clear professional focus. The course content facilitates learning objectives and achievement of final qualification.

The following topics are part of the programme:

- Introduction to Sanitation
- Sanitation Systems and Services
- Sanitation and Public Health
- Analysis of Sanitation Flows
- Sanitation Technology
- Sanitation Governance
- Sanitation Financing
- Behaviour Change and Advocacy
- Emergency Sanitation
- Leadership
- Project Management
- Teamwork Skills Development
- Research Methods for Sanitation

Check our website regularly or subscribe to our e-newsletter to stay tuned with updates about this programme.

In partnership with:

BILL & MELINDA
GATES foundation

IHE Delft is member of:



MSc PROGRAMME IN WATER MANAGEMENT AND GOVERNANCE



Imparts knowledge and skills needed to evaluate, develop and apply integrated and interdisciplinary approaches, involving hydrological, biophysical, chemical, economic, institutional, legal, policy making and planning aspects, to address water management and governance issues.

CAREER

Graduates of the WM programme start or resume a career dealing with wide range of water management and governance jobs in the water sector or related sectors such as infrastructure, energy, agriculture or mining. Careers include working at:

- Public administration: central and local government (river basin organizations, urban water authorities, water boards, urban/rural development ministries/authorities);
- Private sector: e.g. consulting firms, water supply companies, law firms;
- Academia and research institutes;
- NGOs and international organizations (UN, Worldbank, etc.).

The MSc programme in Water Management and Governance provides a unique combination of knowledge, skills and competencies to help comprehensively analyze, critically reflect and effectively contribute to solving contemporary water problems. The question of how to balance objectives of social equity with those of ecological integrity and productivity are at the heart of societal efforts to deal and live with water. In answering this question, science and data are always deeply entangled with particular visions on development, moral world views, and economic or geopolitical interests. This is why the study programme pays explicit critical attention to the definition and workings of authority and power, and to the organisation of democracy in water.

As solutions to water problems always consist of a combination of engineering, institutions and organisations, this programme brings together insights about water quality and quantity - and hence of key biophysical and hydrological processes - with understandings of the infrastructural, political and institutional arrangements to regulate its access, allocation, treatment, use and discharge. Courses on offer thus range from those that are rather technical or natural science oriented (focusing on physical, biological or technical processes) via more skills-oriented modules aimed at acquiring the abilities to 'do' water management and governance effectively (law, conflict resolution, mediation, modelling, environmental assessment) to more interpretive social science courses. Throughout the programme, there is a lot of attention to different ways of integrating these different disciplines and sources of knowledge.

The programme's anchor are water problems as they are experienced by relevant actors - users, operators, policymakers, politicians, experts - in their everyday dealings with water. The applicability of taught practical and analytical skills for dealing with actual water management and governance situations

is therefore the most crucial measure of their value. However, by deepening their insights about how socio-natural processes shape water flows and vice-versa, the programme not just provides tools to help solve problems, but also develops students' theoretical ability to critically compare and reflect on proposed solutions, measuring their effectiveness against wider environmental and social objectives.

An important target audience for the programme are water professionals from Southern countries. However, we also welcome students from other disciplinary and professional backgrounds (lawyers, journalists, entrepreneurs, activists) or countries of origin who aim to specialize in water, and we are open to less experienced students who are interested in studying at IHE Delft because it gives them a unique, broad and interdisciplinary background in contemporary water management and governance questions. The programme's overall ambition is to train and educate reflective water professionals and experts who have the knowledge and capacity to develop, plan, implement and evaluate water management and governance policies and strategies in support of the ecologically wise and socially equitable use of water.

In line with the overall IHE Delft approach to education, the programme's content is diverse: lectures by experts in the field are complemented by practical assignments, work in the laboratory, excursions and group-work. Innovative distance learning and electronic interactive educational tools support the programme. Throughout the educational cycle, lecturers and professors make creative use of opportunities to build on and learn from the rich experiences of students. More generally, the programme is student-centred, which means that students have a large degree of freedom to put together the curriculum that best fits their choice, interests and needs.

SPECIALIZATION / THEMATIC PROFILES

WATER COOPERATION AND DIPLOMACY

waterdiplomacymaster.org

You will study socio-hydrological dynamics, decision making processes on water resources and services management, water cooperation and diplomacy, water dispute prevention, management and resolution skills and tools.

Prospective Students

Professionals, preferably with relevant work experience in the water sector, involved in topics directly or indirectly related to water management and from the water sector or other relevant sectors as well as diplomats, UN staff or other professionals working for international organizations or NGOs.

Topics

- Water Management and Governance
- Water Conflict Management
- Water Economics
- Water and Environmental Law
- Water Resources Planning

This specialization is jointly offered with the University for Peace, Costa Rica and Oregon State University, USA.

WATER CONFLICT MANAGEMENT

You will study water conflict management, particularly alternative dispute resolution processes and develop the skills required to prevent, manage and resolve water-related conflicts.

Prospective Students

The thematic profile is designed for water managers as well as for institutional, legal and international relations experts and (social) geographers interested in local, national and international water management.

Topics

- Water Management and Governance
- Water Conflict Management
- Institutional Analysis
- Water Resources Planning
- Water and Environmental Law
- Urban Water Governance

Delft-based MSc thematic profile

WATER QUALITY MANAGEMENT

You will study the water quality impacts of human activities on aquatic ecosystems, as well as possible remedial actions, considering different levels of environmental stress and in various socio-economic contexts.

Prospective Students

The thematic profile is designed for engineers and natural scientists responsible for or involved in planning, developing and implementation of water quality policies, strategies and programmes. Affinity with chemistry and biology is required for this thematic profile.

Topics

- Water Management and Governance
- Water Quality Monitoring and Assessment
- Water and Environmental Law
- Aquatic Ecosystems Processes and Applications
- Wetlands for Water Quality
- Environmental Planning and Implementation

Delft-based MSc thematic profile

WATER RESOURCES MANAGEMENT

You will study water availability in connection to water use, and seek to develop alternative land use and water allocation policies, including legal and institutional arrangements from the local watershed to the basin scale and beyond.

Prospective Students

This profile is designed for engineers, natural scientists and managers responsible for planning, developing and implementing water resources projects and programmes. Affinity with quantitative methods, such as statistical analysis, is required for this thematic profile.

Topics

- Water Management and Governance
- Water Economics
- Water Resources Assessment
- Water Systems Analysis and Modelling
- Water Resources Planning
- IWRM as a Tool for Adaptation to Climate Change

Delft-based MSc thematic profile

WATER SERVICES MANAGEMENT

You will study the provision of water and sanitation services as well as the management of related infrastructure and critically review institutional and financial instruments and business models considering different socioeconomic contexts.

Prospective Students

The thematic profile is designed for broad range of professionals from various academic backgrounds active in the water services sector and involved in the planning, developing and managing of water supply and/or sanitation policies, strategies and programmes.

Topics

- Water Management and Governance
- Managing Water Organizations
- Environmental Management and Water Services
- Finance in the Water Sector
- Partnerships for Water Supply and Sanitation
- Urban Water Governance

Delft-based MSc thematic profile

TAILOR MADE STUDY PROFILE

The Tailor made study profile offers the possibility for students to compose their own study trajectory within the Water Management and Governance Master Programme. After a foundation phase during which students are exposed to the different disciplines involved in the water management domain, students can compile a study profile from a wide range of available courses and variety of thesis research topics to ensure that the educational programme is fully aligned with their professional needs. They will be guided in this process by professional coaches who will encourage students to reflect on their knowledge and skills, advise them

on career possibilities and assist them in selecting a suitable tailor-made study profile. The coaches have extensive knowledge of the needs of the water sector in various parts of the world and student's employers will be consulted in the process when needed. Prospective water management students may wish to compile a study profile from a wide range of available courses and variety of thesis research topics to ensure that the educational programme is fully aligned with their professional needs. The prospective students may have bachelor or master degrees in Engineering, Natural and Social sciences, Arts, Law, Geography etc.

MSc PROGRAMME IN WATER SCIENCE AND ENGINEERING

The specializations within this programme explore natural and human influences on the water cycle, from the perspectives of civil engineering, information technology and earth sciences. They are of direct relevance to sustainable development because they prepare graduates to improve the sustainable management of human impacts on water resources, design simulation models for various phases of the water cycle, and contribute to the development of integrated solutions for reducing the impact of water-related natural hazards and other water issues.

Aim of the Programme

The programme aims to deepen the knowledge, insights and skills for Hydraulic Engineering (part of Civil Engineering and covering the disciplines River Basin Development, Land and Water Development and Coastal Engineering and Port Development), Hydroinformatics (an IT-oriented discipline), Hydrology (an Earth Science) and Urban Water Management. These different fields are complementary and ensure exposure of the student to a large variety of water issues from different perspectives, and the ability to develop sustainable solutions for complex water problems.

In particular, this programme provides the education to:

- Improve the management of water resources through assessing and monitoring their condition, the underlying hydrological processes and the vulnerability to hazards;
- Sustain economic development by better flood and drought protection, risk management and hazard reduction, in an era of climate and global change;
- Improve environmental and public health through pollution prevention;
- Sustain and improve water supply, power generation and agriculture through integrated water resources management;
- Improve food production by developing, operating, maintaining and optimising water-related infrastructure;
- Sustain economic growth through the development of coastal and riparian zones;
- Manage and control water systems in an integrated and sustainable way, with stakeholders, through the development of technologies to simulate such systems.

SUSTAINABLE URBAN WATER MANAGEMENT

You will develop scientific and engineering knowledge needed to reduce the human and socioeconomic losses caused by flooding while at the same time taking into account the social, economic, and ecological benefits from floods and the use of flood plains or coastal zones.

Prospective Students

This specialisation has been developed for students originating from China only. Students with Chinese nationality with a BSc, preferably in civil or environmental engineering, but otherwise in geosciences, environmental sciences or natural resources can apply.

SPECIALIZATIONS

FLOOD RISK MANAGEMENT

floodriskmaster.org

You will develop scientific and engineering knowledge needed to reduce the human and socioeconomic losses caused by flooding while at the same time taking into account the social, economic, and ecological benefits from floods and the use of flood plains or coastal zones.

Prospective Students

Suitable academic backgrounds include civil or environmental engineering, but otherwise in geosciences, environmental sciences, limnology, oceanography, geography, geology or natural resources).

Topics

- Data-driven modelling and real-time control
- River basin modelling
- River flood modelling
- International fieldtrip to Florida Everglades
- Flood Risk Management III
- Hydroinformatics for decision support

This specialization is a joint programme offered under the European Erasmus Mundus framework with the Technical University of Dresden (Germany), and University of Ljubljana (Slovenia).

GROUNDWATER AND GLOBAL CHANGE – IMPACTS AND ADAPTATION

groundwatermaster.eu

You will develop scientific and engineering knowledge and skills to evaluate and simulate the interactions between groundwater, surface water, climate and global change (population increase, socio-economic development), and develop groundwater related adaptation measures to enhance water and food security.

Prospective Students

Suitable academic backgrounds include hydraulic, civil and environmental engineering, earth and environmental sciences, climate sciences, geography and geology.

Topics

- Hydrogeology
- Climate Processes and Modelling
- Integrated River Basin and Water Resource Management
- Groundwater and Environmental Impacts
- Groundwater, Society and Policies
- Data Collection, Interpretation and Modelling
- Climate and Global Change Impacts and Adaptation

This specialization is a joint programme offered under the European Erasmus Mundus framework with the Technical University of Dresden (Germany) and IST Lisbon (University of Lisbon, Portugal).

CAREER

Graduates of the WSE programme start or resume a career dealing with civil engineering design and construction, information technology or earth sciences in the water sector or related sectors such as infrastructure, energy, agriculture or mining. Careers include working at:

- Public administration: central and local government (river basin organizations, municipalities, water boards, public works ministries, urban/rural development and agriculture ministries);
- Private sector: e.g. consulting engineering firms;
- Academia and research institutes;
- NGOs and international organizations (UN, Worldbank, International River Commissions etc.).

Focuses on the understanding, management and development of water resources and water flows and quality in the natural and human-influenced environment, while addressing the multidisciplinary character of human activities dealing with water.

HYDRAULIC ENGINEERING AND RIVER BASIN DEVELOPMENT	HYDRAULIC ENGINEERING – COASTAL ENGINEERING AND PORT DEVELOPMENT	HYDROINFORMATICS – MODELLING AND INFORMATION SYSTEMS FOR WATER MANAGEMENT	HYDROLOGY AND WATER RESOURCES	LAND AND WATER DEVELOPMENT FOR FOOD SECURITY
You will develop scientific and engineering knowledge needed to design and implement projects for sustainable use of river systems and their resources, to design and plan hydraulic structures and infrastructures to harness resources from flowing water, to model river flows and morphodynamics, and to manage extreme hydrological events at different scales of water projects (catchments, river reaches, floodplain and width scaled domains). Prospective Students Students and professionals who want to address challenges related to river engineering and river basin development with an academic background in hydraulics in civil or environmental engineering context (or similar).	You will develop scientific and engineering knowledge and practical skills to plan, model, design and manage coastal engineering and port development projects, and learn to analyse coastal problems and conceive appropriate solutions. Prospective Students Students and professionals who are eager to address coastal zone/port development challenges with an academic background in civil/hydraulic engineering.	You will be able to understand the main water-related processes and to develop and apply computer-based mathematical models, web-based information systems and integrated hydroinformatics systems for planning, designing or managing water systems. You will be able to define, build and supply the tools that enable decision-makers to manage aquatic resources and the environment. Prospective Students Students and professionals interested in mathematical models, advanced computational tools, web-based information systems and integrated hydroinformatics systems for planning, designing or managing the aquatic environment. Suitable academic backgrounds include civil, agricultural or systems engineering, earth/ environmental sciences or physics.	You will deal with surface and groundwater, addressing both water quantity and quality, learning to understand human influences on the hydrological system and apply tools, such as modelling, for the proper integration of hydrological knowledge and analysis in water resources planning and management. Prospective Students Students and professionals interested in hydrology, river basin management, prediction and mitigation of floods and droughts, water resources assessment, water supply, hydropower, land use and development, environmental survey and planning. Suitable academic backgrounds include civil or agricultural engineering, earth/ environmental sciences or physics.	You will learn to plan, design, operate and maintain land and water resources and water-related infrastructure, emphasising the modernisation of irrigation, drainage and land use for agriculture and food security. Prospective Students Students and professionals concerned with the development and management of land and water resources for agricultural purposes, with preferably two years work experience in irrigation, drainage or land and water development. Suitable academic backgrounds include agricultural, irrigation or civil/hydraulic engineering.
Topics • Hydrology and Hydraulics • River Basin Development and Environmental Impact Assessment • Remote Sensing and Data Acquisition • Hydraulics Design of Infrastructures • River Hydraulics and Morphodynamics • Hydropower and Dams • Hydrological Extremes Management and Reservoir Operations	Topics • Hydrology and Hydraulics • Coastal Science and Engineering • Coastal Systems • Coastal and Port Structures • Port Planning and Infrastructure Design • Process based coastal modelling • Climate change and adaptation in deltas • Geotechnical Engineering and Dredging	Topics • Hydrology and Hydraulics • Information Technology and Software Engineering • Modelling Theory and Computational Hydraulics • Modelling and Information Systems Development • Computational Intelligence and Operational Water Management • River Basin Modelling • Flood Risk Management	Topics • Hydrology and Hydraulics • Hydrogeology • Surface Hydrology • Water Quality • Tracer Hydrology and Flow Systems Analysis • Data Collection and Interpretation • Integrated Hydrological and River Modelling • Applied Groundwater Modelling	Topics • Hydrology and Hydraulics • Principles and Practices of Land and Water Development • Design Aspects of Irrigation and Drainage Systems • Irrigation and Drainage Design • Management of Irrigation and Drainage Systems • Optimization of Canal System Design and Operation • Ecosystems and Agriculture, Health and Environment • Innovative Approaches for Agricultural Water Management • Application of Remote Sensing for Agricultural Water Management
Delft-based MSc specialization	Delft-based MSc specialization	Delft-based MSc specialization	Delft-based MSc specialization	This specialization is also offered jointly with the University of Nebraska-Lincoln, USA

ONLINE COURSES 2020

Faecal Sludge Management	06/Jan/20 – 08/May/20
Urban Drainage and Sewerage	06/Jan/20 – 08/May/20
Biological Wastewater Treatment: Principles, Modelling and Design	06/Jan/20 – 05/Jun/20
Biological Wastewater Treatment: Principles, Modelling and Design	07/Sep/20 – 20/Feb/21
Water and Environmental Law and Policy	02/Mar/20 – 26/Jun/20
Experimental Methods in Wastewater Treatment	28/Apr/20 – 17/Jul/20
Experimental Methods in Wastewater Treatment	07/Sep/20 – 20/Nov/20
Industrial Resource Management and Cleaner Production	04/May/20 – 04/Sep/20
Modelling Sanitation Systems	04/May/20 – 04/Sep/20
Constructed Wetlands for Wastewater Treatment	07/Sep/20 – 15/Jan/21
Desalination and Membrane Technology	07/Sep/20 – 15/Jan/21
Disinfection, Adsorption and Natural Processes for Water Treatment	07/Sep/20 – 15/Jan/21
Environmental Flows	07/Sep/20 – 15/Jan/21
Governance of Decentralised Sanitation	07/Sep/20 – 15/Jan/21
Industrial Effluent Treatment	07/Sep/20 – 15/Jan/21
Partnerships for Water Supply and Sanitation	07/Sep/20 – 15/Jan/21
Solid Waste Management	07/Sep/20 – 15/Jan/21
Management of Irrigation and Drainage Systems	07/Sep/20 – 15/Sep/21
Remote Sensing for Agricultural Water Management	07/Sep/20 – 15/Sep/21
Water Resources for Food Security	07/Sep/20 – 15/Sep/21
Water Transport and Distribution	14/Sep/20 – 15/Jan/21

Dates are subject to change - please check the website for updates.

ONLINE COURSES IN COLLABORATION WITH PARTNER ORGANIZATION

Learning QGIS	learning-qgis.com	continuous
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OPEN COURSEWARE

Benchmarking for Improved Water Utility Performance
Biological Wastewater Treatment: Principles, Modelling and Design
Computational Hydraulics
Constructed Wetlands for Wastewater Treatment
Data Sharing for Water Sector Organisations using Spatial Data Infrastructures
Ecological Sanitation
E-learning: Preparing for Extreme & Rare Events in Coastal Regions - PEARL
Experimental Methods in Wastewater Treatment
Faecal Sludge Management (eBook)
Faecal Sludge Management
Governance of Decentralized Sanitation
Hydrology and Hydraulics
Industrial Resource Management and Cleaner Production
Introduction to Urban Water Distribution (eBook)
Open Source Software for Preprocessing GIS Data for Hydrological Models
Preparing for Extreme and Rare Events in Coastal Regions
Spate Irrigation Systems
Urban Drainage and Sewerage
Water Quality Assessment

SUMMER COURSES

Course topics include: communication, leadership, serious gaming and gender.	29/Jul/20 – 31/Jul/20
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Please check the website for updates.

GRADUATE PROFESSIONAL DIPLOMA PROGRAMME

Participants select courses among clusters belonging to six different tracks.

The programme consists of a sequence of four or five online courses, on-campus short courses or a combination.

The number of ECTS points vary from 3 to 6 per course. The minimum study load for obtaining a diploma is 20 ECTS, which equals a workload of 560 hours.

To ensure that the programme fits the personal circumstances of the participant, a personal study plan will be designed in collaboration with a study advisor.

The total duration of the programme depends on this study plan, with a minimum of 1.5 and a maximum of 4.5 years.

Course	Sanitary Engineering	Sanitation	Water Supply Engineering	Water and Wastewater Treatment Technology	Urban Water Networks and Floods	Cleaner Production and Residuals Management
Online Courses						
Biological Wastewater Treatment	●			●		
Constructed Wetlands for Wastewater Treatment	●	●		●		
Desalination and Membrane Technology			●	●		
Disinfection, Adsorption and Natural Processes for Water Treatment			●	●		
Experimental Methods in Wastewater Treatment	●			●		
Faecal Sludge Management	●	●				●
Governance of Decentralised Sanitation	●					
Ground Water Resources and Treatment *			●	●		
Industrial Effluent Treatment	●			●		●
Industrial Resources Management and Cleaner Production	●					●
Modeling Sanitation Systems	●					
Solid Waste Management	●	●				●
Unit Operations in Water Treatment: coagulation, etc.			●	●		
Urban Drainage and Sewerage	●				●	
Urban Flood Management and Disaster Risk Mitigation *	●				●	
Urban Water Systems *	●		●		●	
Water Transport and Distribution			●		●	
On-Campus Short Courses						
Advanced Water Transport and Distribution			●		●	
Advanced Water Treatment and Re-use			●	●		
Anaerobic Wastewater Treatment	●			●		
Analysis of Sanitation Flows ^{NEW}		●				
Asset Management	●				●	
Behaviour Change and Advocacy ^{NEW}		●				
Constructed Wetlands for Wastewater Treatment	●			●		
Conventional Wastewater Treatment	●			●		
Decentralised Water Supply and Sanitation			●			
Disinfection, Adsorption and Natural Processes for Water Treatment			●	●		
Emergency Sanitation ^{NEW}		●				
Experimental Methods in Wastewater Treatment	●			●		
Faecal Sludge Management	●	●				●
Ground Water Resources and Treatment			●	●		
Industrial Effluents Treatment and Residuals Management	●			●		●
Industrial Resource Management and Cleaner Production	●					●
Modelling Wastewater Treatment Processes and Plants	●					
Project Management ^{NEW}		●				
Resource Oriented Wastewater Treatment and Sanitation	●	●		●		●
Sanitation and Public Health ^{NEW}		●				
Sanitation Financing ^{NEW}		●				
Sanitation Governance ^{NEW}		●				
Sanitation Systems and Services ^{NEW}		●				
Sanitation Technology ^{NEW}		●				
Solid Waste Management	●	●				●
Unit Operations in Water Treatment: coagulation, etc.			●	●		
Urban Drainage and Sewerage	●				●	
Urban Flood Management and Disaster Risk Mitigation	●				●	
Urban Water Systems	●		●		●	
Water Transport and Distribution			●			
Water Treatment Processes and Plant Design			●	●		

* New courses and tracks currently being developed - please check the website for the latest information.

ON-CAMPUS SHORT COURSES 2020

ENVIRONMENTAL SCIENCE

Water and Environmental Policy Analysis	30/Mar/20 – 17/Apr/20
Water Quality Assessment and Monitoring	30/Mar/20 – 17/Apr/20
Environmental Planning and Implementation	20/Apr/20 – 08/May/20
Industrial Resource Management and Cleaner Production	20/Apr/20 – 08/May/20
Data Analysis and Modelling for Aquatic Ecosystems	18/May/20 – 05/Jun/20
Aquatic Ecosystems: Processes and Applications	08/Jun/20 – 26/Jun/20
Environmental Assessment for Water-related Policies and Developments	08/Jun/20 – 26/Jun/20
Solid Waste Management	29/Jun/20 – 17/Jul/20
Strategic Planning for River Basins and Deltas	29/Jun/20 – 17/Jul/20
Wetlands for Livelihoods and Conservation	29/Jun/20 – 17/Jul/20

URBAN WATER AND SANITATION

Unit Operations in Water Treatment	13/Jan/20 – 31/Jan/20
Urban Drainage and Sewerage	13/Jan/20 – 31/Jan/20
Asset Management	10/Feb/20 – 28/Feb/20
Conventional Wastewater Treatment	10/Feb/20 – 28/Feb/20
Disinfection, Adsorption and Natural Processes for Water Treatment	10/Feb/20 – 28/Feb/20
Groundwater Resources and Treatment	02/Mar/20 – 20/Mar/20
Resource Oriented Wastewater Treatment and Sanitation	02/Mar/20 – 20/Mar/20
Anaerobic Wastewater Treatment	09/Mar/20 – 13/Mar/20
Wastewater Treatment Plants Design and Engineering	30/Mar/20 – 17/Apr/20
Water Transport and Distribution	30/Mar/20 – 17/Apr/20
Desalination and Membrane Technology	20/Apr/20 – 08/May/20
Modelling Wastewater Treatment Processes and Plants	20/Apr/20 – 08/May/20
Industrial Effluents Treatment and Residuals Management	08/Jun/20 – 26/Jun/20
Water Treatment Processes and Plants	08/Jun/20 – 26/Jun/20
Advanced Water Transport and Distribution	29/Jun/20 – 17/Jul/20
Decentralised Water Supply and Sanitation	29/Jun/20 – 17/Jul/20
Experimental Methods in Wastewater Treatment	29/Jun/20 – 17/Jul/20
GIS and Remote Sensing Applications for the Water Sector	26/Oct/20 – 06/Nov/20

WATER MANAGEMENT AND GOVERNANCE

Managing Water Organisations	10/Feb/20 – 28/Feb/20
Water and Environmental Law	10/Feb/20 – 28/Feb/20
Water Resources Assessment and Modelling	02/Mar/20 – 20/Mar/20
Water Conflict Management II	30/Mar/20 – 17/Apr/20
Finance in the Water Sector	20/Apr/20 – 08/May/20
Water Conflict Management I	20/Apr/20 – 08/May/20
Water Resources Planning	20/Apr/20 – 08/May/20
Partnerships for Water Supply and Sanitation	08/Jun/20 – 26/Jun/20
Water Economics	14/Sep/20 – 25/Sep/20

WATER SCIENCE AND ENGINEERING

Port Planning and Infrastructure Design	13/Jan/20 – 31/Jan/20
Coastal Systems	10/Feb/20 – 28/Feb/20
Computational Intelligence and Operational Water Management	02/Mar/20 – 20/Mar/20
Design of Breakwaters	02/Mar/20 – 13/Mar/20
Management of Irrigation and Drainage Systems	02/Mar/20 – 20/Mar/20
Tracer Hydrology and Flow Systems Analysis	02/Mar/20 – 20/Mar/20
Hydropower Water Conduit Design	09/Mar/20 – 20/Mar/20
Groundwater Data Collection and Interpretation	30/Mar/20 – 17/Apr/20
Hydrological Data Collection and Processing	30/Mar/20 – 17/Apr/20
River Basin Modelling	30/Mar/20 – 17/Apr/20
Integrated Hydrological and River Modelling	20/Apr/20 – 08/May/20
Planning and Delivery of Flood Resilience	20/Apr/20 – 08/May/20
River Flood Analysis and Modelling	20/Apr/20 – 08/May/20
Urban Flood Management and Disaster Risk Mitigation	20/Apr/20 – 08/May/20
Design of Hydropower Schemes	28/Apr/20 – 01/May/20
Applied Groundwater Modelling	08/Jun/20 – 26/Jun/20
Flood Risk Management	08/Jun/20 – 26/Jun/20
Urban Water Systems	08/Jun/20 – 26/Jun/20
Remote Sensing for Agricultural Water Management	29/Jun/20 – 17/Jul/20
Water Sensitive Cities	29/Jun/20 – 17/Jul/20
World History of Water Management	27/Jul/20 – 31/Jul/20
Data Assimilation for Operational Hydrological Forecasting	07/Sep/20 – 11/Sep/20
Data Acquisition, Preprocessing and Modelling using HEC-RAS	14/Sep/20 – 25/Sep/20
Data Acquisition, Preprocessing and Modelling using PCRaster Python	14/Sep/20 – 25/Sep/20
Data Acquisition, Preprocessing and Modelling using SWAT	14/Sep/20 – 25/Sep/20
Geostatistics for Water Management and Environmental Sciences	14/Sep/20 – 25/Sep/20
Google Earth Engine for Spatio-Temporal Analysis of Hydrological Extremes	14/Sep/20 – 18/Sep/20
Morphological Modeling Using Delft3D	14/Sep/20 – 18/Sep/20
QGIS for Hydrological Applications	14/Sep/20 – 18/Sep/20
Small Hydropower Development	14/Sep/20 – 25/Sep/20
Environmental Modelling using PCRaster	21/Sep/20 – 25/Sep/20
Hydraulic Modelling using HEC-RAS	21/Sep/20 – 25/Sep/20
River Basin Modelling using SWAT	21/Sep/20 – 25/Sep/20
Where there is little data: How to estimate design variables in poorly gauged basins	26/Oct/20 – 06/Nov/20

Dates are subject to change - please check the website for updates.



The Sustainable Development Goals (SDGs) are important and ambitious goals that keep us at IHE Delft focused on our role in addressing water and development challenges.

As a water education institute providing training, research and capacity development in water-related topics, one of our most important goals is 'Clean water and sanitation'. However, water cannot be seen in isolation and is often a precondition for other goals. Therefore, together with our partners, we are also contributing to other SDGs, such as: zero hunger, gender equality, affordable and clean energy, and sustainable cities and communities, among others.

By introducing new monitoring techniques and developing innovative solutions, we will help to achieve ambitious goals such as a 25% increase in water productivity by 2030. IHE Delft's main focus as we approach 2030 will be to further strengthen the connections between our different project activities. We will do this by emphasizing our inter- and transdisciplinary approach in all our activities. We are looking forward to doing this together with our partners and we welcome any ideas for collaborative initiatives.

Cover photo: aerial view of glacier patterns and shapes in Jokulsarlon lake, Iceland / shutterstock



IHE Delft is the largest international graduate water education facility in the world and is based in Delft, the Netherlands. Since 1957 the Institute has provided water education and training to 23.000 professionals from over 190 countries, the vast majority from Africa, Asia and Latin America. Also, numerous research and institutional strengthening projects are carried out in partnership to strengthen capacity in the water sector worldwide. Through its overarching work on capacity development, IHE Delft aims to make a tangible contribution to achieving all Sustainable Development Goals in which water is key.

www.un-ihe.org

IHE Delft
Institute for Water Education

PO Box 3015
2601 DA Delft
The Netherlands

+31 15 215 1715
info@un-ihe.org

Engage with the IHE Delft
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