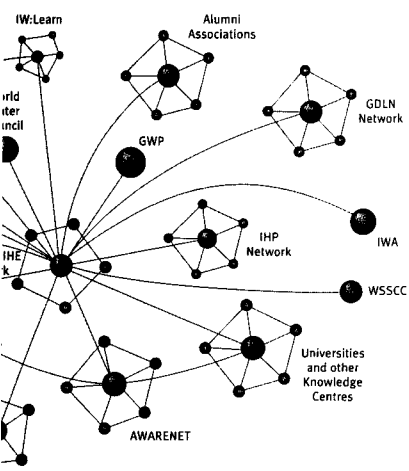


UNESCO-IHE provides postgraduate education and training in the fields of water and the environment, mid-career and senior professionals in developing countries. The Institute's community of experts includes public and private sector professionals.

The Institute's community also includes over 1000 professionals in water sectors, engaged in maintaining an extensive network of water professionals of yesterday and tomorrow.



WATER MANAGEMENT

WATER SCIENCE AND ENGINEERING

ENVIRONMENTAL SCIENCE

MUNICIPAL WATER AND INFRASTRUCTURE

INTERNATIONAL POSTGRADUATE PROGRAMMES

MASTERS OF SCIENCE

DOCTORATE OF PHILOSOPHY

PROFESSIONAL SHORT COURSES

TECHNICAL TRAINING

- COASTAL ENGINEERING AND PORT DEVELOPMENT
- ENVIRONMENTAL PLANNING AND MANAGEMENT
- ENVIRONMENTAL SCIENCE AND TECHNOLOGY
- GROUNDWATER HYDROLOGY
- HYDRAULIC ENGINEERING AND RIVER BASIN DEVELOPMENT
- HYDROINFORMATICS
- INTEGRATED URBAN ENGINEERING
- LAND AND WATER DEVELOPMENT
- LIMNOLOGY AND WETLAND ECOSYSTEMS
- SANITARY ENGINEERING
- SURFACE WATER HYDROLOGY
- WATER RESOURCES MANAGEMENT
- WATER SERVICES MANAGEMENT
- WATER SUPPLY ENGINEERING
- WATER QUALITY MANAGEMENT



INTRODUCING THE UNESCO-IHE INSTITU



Water is an issue of strategic importance, with strong environmental, social and economic implications, as expressed in global dialogue: such as the UN Millennium Summit, the World Water Fora, the Bonn Freshwater Conference and the World Summit on Sustainable Development.

One message is clear: the need for a more integrated approach to water and environmental resources management calls for professionals with a high degree of specialisation, as well as generalists equipped to lead and manage multidisciplinary efforts, individuals and organisations in the water and environment sectors world-wide. Aiming for impact, in November 2001, UNESCO's General Assembly declared its support for the establishment of UNESCO-IHE Institute for Water Education, in response to the call for increased investment in human resources development and institutional capacity building.

Innovative learning at UNESCO-IHE equips professionals with the scientific research, managerial and technical skills needed to deal with challenges in the fields of water, the environment and infrastructure. With the help of thousands of Alumni active in the water and environment sectors, UNESCO-IHE Institute for Water Education is able to design and more effectively apply educational materials and processes in the delivery of joint products and services. Advances in distance and electronic learning are changing the manner, efficiency and effectiveness by which participants create, share, and apply knowledge with the Alumni.



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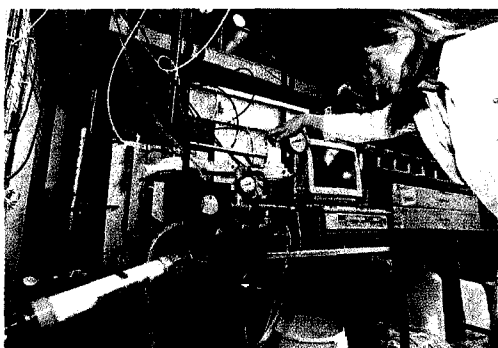


PROGRAMME STRUCTURE

UNESCO-IHE offers 18-month Master of Science (MSc) programmes. The first year of the programme are taught modules. This is followed by six-month research period resulting in a thesis.

Each module is taught over a three-week period, is structured around a central theme and has a certain number of credit points. UNESCO-IHE uses the European Credit Transfer System (ECTS), in which each credit point is equivalent to 28 study load hours. The UNESCO-IHE Master of Science programme consists of 106 credit points in total.

When the participant has successfully completed the taught modules, he or she will enter an individual research programme for a six-month period, under the guidance of a supervisor. The study is completed with the MSc thesis and a public presentation of its results, which are judged by an examination committee. The study deals with a practical or theoretical problem and is possibly carried out in collaboration with a water sector organisation in the Netherlands or the participant's employer. Field data collection, laboratory or computer analysis work will in many cases form part of the study.



STATUS OF DEGREES

UNESCO-IHE degrees are awarded to participants who have successfully completed an MSc programme. The degrees are recognised as postgraduate degrees by all universities in the Netherlands. The academic level and duration of the MSc programmes awarded by the Institute are comparable with those of Masters Programmes given at universities in the UK, the USA and Australia. The Institute complies fully with the quality control procedures of the Netherlands Ministry of Education, Culture and Science.

QUALITY CONTROL MECHANISMS

The quality of the Institute's educational products and processes is controlled at three levels. First, at the institutional level the Academic Board is responsible for the development of UNESCO-IHE's education, policies, guidelines, structures and regulations. Furthermore, at the programme level the Quality Control Committees have overall responsibility for scientific rigour and administrative efficiency, and they annually report to the Academic Board. Finally, at the course level Programme Coordinators are responsible for the day-to-day course organisation and for supervising the contributions of all lecturers. Each (guest) lecturer is responsible for the content and implementation of his or her own course.

During the academic year participants are asked to fill in a questionnaire asking their opinions about the quality of the programme they are following. Based on this feedback and taking into consideration the recent developments in scientific fields, Programme Committees may adapt courses to ensure that they continue to meet programme objectives as well as participants' needs.

ADMISSION REQUIREMENTS

The official admission requirements for the UNESCO-IHE MSc programmes are:

- A Bachelors degree in a field related to the programme the applicant would like to join (for requirements specific to this specialisation, please refer to the participant profile section).
- In principle, candidates should have a minimum of three years of practical or research experience after graduation. All applications are, however, considered on individual merits.
- Since instruction and examinations are given in English, it is essential that participants have a good working knowledge of the English language. If there is any doubt about a candidate's proficiency in English, he or she may be required to take one of the internationally recognised language tests before confirmation of admittance.

SPECIALISATIONS

SURFACE WATER HYDROLOGY

The specialisation in Surface Water Hydrology focuses primarily on surface water systems. Due attention is given to the collection and processing of hydrological and other environmental data, which are essential activities in order to determine water quantity, water quality and the variations in both space and time. Students become acquainted with engineering and modelling applications, particularly in relation to sustainable water management and aspects of human influences on hydrological systems.

Upon successful completion of this specialisation, the participant is able to:

- Analyse hydrological systems and processes at a wide range of scales using modern techniques for data collection, processing and modelling;
- Integrate hydrological knowledge with a wide range of environmental and water resources decision-making issues;
- Apply the acquired skills to a wide range of design, planning and engineering activities for water supply and hazard mitigation;
- Function in multi-disciplinary teams for water resources and environmental analysis, planning, management and policy-making.

GROUNDWATER HYDROLOGY

The specialisation in Groundwater Hydrology focuses on the analysis of groundwater flow systems, the modelling of the flow and contaminant transport processes at the appropriate scale, and the design and maintenance of comprehensive monitoring systems. Further attention is also given to groundwater exploration, pollution protection, remediation, groundwater resources assessment, development and management as well as to the effects of human activities on groundwater systems.

Upon successful completion of this specialisation, the participant is able to:

- Evaluate groundwater resources and analyse groundwater systems using modern techniques for groundwater exploration, monitoring and modelling;
- Assess groundwater pollution potential and design effective remediation measures;
- Simulate groundwater flow and contaminant transport at a wide range of scales using advanced groundwater models;
- Formulate sustainable groundwater resources development strategies for integrated water and environmental resources planning, management and policy-making.

HYDRAULIC ENGINEERING AND RIVER BASIN DEVELOPMENT

Upon completion of this specialisation, the participant is able to design river structures for different purposes, primarily based on the correct understanding of dynamic river processes. As for any large civil engineering project, river projects must be environmentally (socially, economically and ecologically) compatible. Emphasis is laid on the planning, design and implementation of different scales of water projects (large, medium, and small) and their environmental compatibility and sustainability. The participant will have acquired sufficient knowledge to integrate different, relevant interests in hydraulic engineering projects, as well as to optimise multiple uses, operation and maintenance.

Further deepening is established by several sub-specialisations within the course:

- **River Structures**, directed to defining sites and designs of reservoirs, dams, intakes, hydropower plants, conveyance systems, etc.
- **River Intakes and River Training**, directed to modelling of the river flow regime, sediment transport, and channel morphology in relation to engineering projects for river training, bank protection, channel flow, navigation, etc.
- **Flood Management**, directed to the engineering issues, planning, policies and structural/non-structural measures and approaches to cope with floods and mitigate their impacts and consequences.

COASTAL ENGINEERING AND PORT DEVELOPMENT

The overall aim of the specialisation is to provide the basic technical background and practical skills to engineers such that after the programme they are able to solve practical problems in the field of coastal and port engineering. Upon successful completion, the participant is able to:

- Define and analyse coastal problems and conceive alternatives for its solution;
- Apply the latest developments for the planning, design and management in the field of coastal engineering and port development;
- Quantify and understand the interactions between a coastal/port project and the environment;
- Organise and co-operate in a multi-disciplinary group to set-up and implement an integrated coastal zone management plan.

The coastal engineering and port development specialisation is subdivided into two sub-specialisations.

In the combined part of the programme attention is paid to the basics of coastal engineering, to the design of coastal structures and environmental aspects. These branches are:

- **Coastal Engineering**: directed to the phenomena of the sea and the coast, in particular coastal morphology. The student covers coastal defence works, coastline management, coastal zone management and the design of a coastal structure.
- **Port Development**: directed to the planning, design and construction of ports and harbours.

LAND AND WATER DEVELOPMENT

The specialisation Land and Water Development deals with the planning, design, operation and maintenance of water management infrastructure with a special emphasis on the modernisation of irrigation, drainage and protection schemes. Attention is paid to both main and field system level. With respect to planning and design, specific attention is given to the required level of service of the scheme in relation to land use, requirements of society and environmental impact.

The specialisation provides the skills for the development, implementation and evaluation of alternatives for land and water development management. In order to achieve this, the first part of the specialisation (12 months) consists mainly of lectures, exercises, laboratory and fieldwork.

The second part of the specialisation consists of an individual 6-month research that is carried out by the participants. The participants must show – through individual work and thesis preparation – that they have a good insight into a specific subject, as well as a general understanding of land and water development. The topic of study is selected to fit the participant's practical interest and may be connected to an actual problem or may complement the Land and Water Development Core research.

After completion of the specialisation, the participants should be able to:

- Define the requirements for irrigation, drainage and flood protection, including technical development or adjustment of the physical infrastructure, organisational and institutional arrangements, to determine the costs and benefits of the proposed systems;
- Evaluate (formulate) alternatives for land and water development and assess the technical and economic feasibility of the proposed land and water development and management plans;