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Integrated Hydrological and River Modelling

IHE Delft Institute for Water Education

Certificate / Diploma Short course Delft

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Course description

Qualification Certificate

Field of study Agriculture and environment

Course summary Upon completion of the course, the participant should be able to 1) describe the structure of physically-based hydrological models and methods to simulate hydrological phenomena; 2) distinguish compon

Course description This course comprises the setting up and application of process-based hydrological and river models for simulating catchment processes, river flow and water quality using Mike-SHE, Mile-11 and Mike-ECO Lab modelling software. Commonly used model types and methods of hydrological processes are introduced in the form of group discussion and presentations.

Also discussed are setting up and defining model structure, schematization and boundary conditions for the catchment. Hands-on exercises are used to analyse and interpret simulation results. In addition, simple spreadsheet-based exercises are used to become familiar with the computational techniques. Various criteria for model performance evaluation and model calibration issues are introduced and applied in the workshops. Participants are required to write short reports to summarise simulation results and model performance evaluation.

Study subjects Introduction to hydrological, catchment and river modeling. Physically-based and conceptual models; distributed, semi-distributed and lumped models. Components of hydrological models and commonly used methods and software. Defining model structure, schematization and boundary conditions. Setting up of Mike-SHE model for catchment process simulation, Mike-11 model for river flow simulation and Mike-ECO Lab for water quality simulation. Criteria for model performance evaluation.



Course objectives	Upon completion of the course, the participant should be able to 1) describe the structure of physically-based hydrological models and methods to simulate hydrological phenomena; 2) distinguish components of hydrological modelling software for catchment process, river flow and water quality simulations; 3) translate a given hydrological problem into a model definition; and 4) carry out a hydrological modelling study, interpret results and assess model performance
ECTS credits	5.00
Duration	3 week(s) full-time
Language of instruction	English
Instruction modes	computer modeling, group assignment, individual assignment, lecture, oral presentation
Accreditation	-

About the institution

Department IHE Delft

Information about the institution
 IHE Delft Institute for Water Education is the largest international graduate water education facility in the world and the only institution in the UN system to confer accredited MSc degrees and promote PhDs. It offers degree programmes, short courses, online courses and tailor-made training. Since 1957 the Institute has provided graduate education to more than 15,000 water professionals from over 160 countries. More than 175 PhD candidates were promoted. IHE Delft is at the centre of a vast international network of water related institutions, and functions as an interface between knowledge networks and centres, public and private sector organizations, scientific and professional associations and other members of the international water community. The Institute runs a substantial number of joint MSc programmes implemented in partnership with universities around the globe. These joint programmes combine the strengths of the collaborating institutions and deliver either multiple degrees or a joint degree.

Admission

Admission requirements	<ol style="list-style-type: none"> 1. Relevant wo bachelor (academic bachelor): BSc degree or equivalent qualification in a relevant field from a recognised university 2. Several years of relevant working experience
Language requirements	IELTS overall band 6 TOEFL internet based 87 TOEFL paper based 999
Professional experience required	-
Duration	3 week(s) full-time



Application deadlines **Start date** **EU/EEA Students** **Non-EU/EEA students**
20 Apr 2020 20 Mar 2020 20 Mar 2020

Year **EU/EEA** **Non-EU/EEA** **Institutional**

No tuition fees available.

In short, the following rules apply:

- Tuition fees
- The "EU/EEA rate" is the regular fee for students from within the EU/EEA.
 - The "non-EU/EEA rate" is the rate for students from outside the EU/EEA.
 - The "institutional rate" is for all students who have already obtained a bachelor's or master's degree and who want to start a second programme leading to a degree at the same level or at a lower level.
 - Note that FT, PT and D stand for "full-time", "part-time" and "dual", respectively.

Make sure you contact your institution to find out what rate applies to you. The rates listed here are estimates.

Scholarships Orange Knowledge Programmes (OKP), MENA Scholarship Programme , Netherlands Fellowship Programmes (NFP)

For more scholarships, visit: www.grantfinder.nl

Course website [More information about the course](#)

Contact

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IHE Delft

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Course website

[More information about the course](#)



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