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River Flood Analysis and 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 The course introduces the state-of-the-art concepts and practices of flood modelling for management. It covers modelling used for planning and design as well as for flood forecasting.

Course description Floods are a natural part of the hydrological cycle. It is reported that flood disasters account for about a third of all natural disasters (by number of occurrences and economic losses). Flood management is becoming more and more important to the society, and flood modelling is seen as an integral part of flood management. Models are used for planning and design as well as for forecasting floods so that mitigating measures can be taken in time. Decision support systems (DSS) based on models are increasingly being used by engineers and scientists in flood management. The short course Introduction to River Flood Modelling is a postgraduate study ideally suited for flood managers/ water managers/ flood modellers/ engineers and scientists dealing with floods. Following this course will help in answering the questions such as: • How are floods generated and how do they develop in time? • What are better ways of designing flood protection schemes using models? • What models can be used for forecasting floods? • How should model results be used to inform decision makers?

Study subjects HI: floods and urban systems environment; Climate change and its impacts on hydrology; Intro to uncertainty analysis and their role in modelling; Intro to 1D2D modelling; Nature and characteristics of floods; Modelling flood propagation - flood routing; Hydrological methods for flood routing; Hydraulic methods for flood routing/modelling in rivers.



Course objectives	Course aims at introducing the participants to the state-of-the-art concepts and practices of flood modelling for management. The course covers modelling used for planning and design as well as for forecasting floods so that mitigating measures can be taken in time
ECTS credits	5.00
Duration	3 week(s) full-time
Language of instruction	English
Instruction modes	lecture, computer modeling, individual assignment, self study, tutorial
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. Several years of relevant working experience 2. Relevant wo bachelor (academic bachelor): Basic knowledge of hydraulics and hydrology 						
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	<table> <thead> <tr> <th>Start date</th> <th>EU/EEA Students</th> <th>Non-EU/EEA students</th> </tr> </thead> <tbody> <tr> <td>20 Apr 2020</td> <td>20 Mar 2020</td> <td>20 Mar 2020</td> </tr> </tbody> </table>	Start date	EU/EEA Students	Non-EU/EEA students	20 Apr 2020	20 Mar 2020	20 Mar 2020
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20 Apr 2020	20 Mar 2020	20 Mar 2020					



Year	EU/EEA	Non-EU/EEA	Institutional
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2019 (FT)	€ 2910	€ 2910	n.a.
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In short, the following rules apply:

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| Tuition fees | <ul style="list-style-type: none">• 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. |
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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)
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For more scholarships, visit: www.grantfinder.nl

Course website	More information about the course
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Contact

C. Schutter-Brakel

Contact information for the study programme Admission and Fellowship Officer

c.schutter-brakel@un-ihe.org

IHE Delft

Contact information for the institution	Student Affairs
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info@un-ihe.org

Telephone number

Course website

[More information about the course](#)

Institution website

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