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## Hydropower Water Conduit Design

IHE Delft Institute for Water Education

Certificate / Diploma Short course Delft

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### Course description

Qualification Certificate

Field of study Mathematics, natural sciences and computer science

Course summary The aim of the course is to provide theoretical understanding and practical insights to geotechnical, hydraulic and structural design of the power waterway in global, but also in its particular parts.

Course description The hydropower water conduit system or the power waterway transfers water from the reservoir to the powerhouse and into the downstream reservoir/river. The main parts of the water conduit system are: intake structure, gates, open channel, free flow channel and/or pressurised tunnel, surge tank, penstock and different auxiliary structures such as: settling basin, bifurcations or safety equipment. The power waterway is not only a costly part of the hydropower project, but also the part that connects other main project parts and stretches over nearly whole project area. Therefore appropriate design is a matter of economy and safety, but also an issue technical applicability, ecological acceptability and sustainability. The aim of the course is to provide theoretical understanding and practical insights to geotechnical, hydraulic and structural design of the power waterway in global, but also in its particular parts. The course deals with parameters needed for optimal design, theoretical design background and practical design examples.

Study subjects 1. Layout selection (geomorphology, geology, hydraulics) 2. Parts of water conduit system 3. Hydraulics (design of structures, hydraulic losses, transient calculations) 4. Civil design of structures: • Intakes and settling basins • Free surface waterways • Presurised waterways • Special structures 5. Costs analyses 6. Environmental aspects



Course objectives	To select proper power waterway type and layout integrating geological, geo-morphological and hydraulic characteristics of the site To implement hydraulic and structural design of the power waterway and all their parts To predict the construction and operational costs of the power waterway and identify the environmental impacts of the power waterway.
ECTS credits	3.00
Duration	2 week(s) full-time
Language of instruction	English
Instruction modes	case study, group assignment, individual assignment, lecture
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"> <li>1. Academic bachelor degree in a relevant topic or an equivalent qualification from a recognized university.</li> <li>2. several years of relevant work experience is an asset</li> </ol>
Language requirements	IELTS overall band 6 TOEFL internet based 87 TOEFL paper based 999
Professional experience required	-
Duration	2 week(s) full-time
Application	<b>Start date EU/EEA Students Non-EU/EEA students</b>



deadlines 9 Mar 2020 9 Feb 2020 9 Feb 2020

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

2019 (FT) € 1940 € 1940 n.a.

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](http://www.grantfinder.nl)

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

## Contact

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Contact information for the study programme Admission and Fellowship Officer

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### IHE Delft

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Telephone number

Course website

[More information about the course](#)

Institution website

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