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## Conventional Wastewater Treatment

IHE Delft Institute for Water Education

Certificate / Diploma Short course Delft

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### Course description

Qualification Certificate

Field of study Engineering

Course summary Fundamentals, mechanisms and principles for the design of conventional wastewater treatment systems for the biological removal of carbon, nitrogen and phosphorus.

Course description The course covers the fundamentals, mechanisms and basic principles for the design of conventional aerobic wastewater treatment systems for the biological removal of carbon, nitrogen and phosphorus. It also includes the analysis and determination of the different factors and components that affect the quantity and quality of the wastewater streams generated in urban environments. Special emphasis is given to the study and analysis of the influence of key environmental, operating and wastewater conditions and characteristics on the biological removal processes. The course also provides guidance for the selection of the relevant parameters of design (following a stoichiometrically-based steady-state model), operation and control of wastewater treatment systems. An overview of the principles, fundamentals, characteristics, and operating and control aspects of innovative nitrogen removal technologies (such as the SHARON, ANAMMOX, combined SHARON-ANNAMOX and BABE processes) is also provided.

Study subjects 1. Wastewater characterization and sampling • 2. Primary treatment • 3. Organic matter (COD) removal • 4. Nitrification • 5. Denitrification • 6. Enhanced biological phosphorus removal • 7. Final settling • 8. Filamentous bulking sludge • 9. Side-stream (innovative) nitrogen removal • 10. Membrane bioreactors

- critically determine and analyse quality and quantity characteristics of wastewater



Course objectives	originating from urban environments as a basis for the design, control and operation of sewage treatment facilities. • discuss the physical, chemical, and biological processes applied for sewage purification and the complex interactions among them occurring in wastewater treatment systems. • apply the knowledge on biological treatment processes and engineering on the process design and critical assessment of wa
ECTS credits	5.00
Duration	3 week(s) full-time
Language of instruction	English
Instruction modes	excursion, group assignment, laboratory work, lecture, tutorial
Accreditation	-

## About the institution

Department IHE Delft

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

1. Several years of relevant working experience.
2. Relevant academic bachelor: BSc degree or equivalent in a relevant field from a recognised university.

Language requirements

IELTS overall band 6  
TOEFL internet based 87  
TOEFL paper based 999

Professional experience required

-

Duration

3 week(s)  
full-time

Application **Start date** **EU/EEA Students** **Non-EU/EEA students**



deadlines 10 Feb 2020 10 Jan 2020 10 Jan 2020

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

2019 (FT) € 2910 € 2910 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

Contact information for the institution Student Affairs

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Telephone number

Course website

[More information about the course](#)

Institution website

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