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Experimental Methods in Wastewater Treatment

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 This course assembles and integrates innovative experimental methods developed by different research groups and practitioners around the world and broadly applied in wastewater treatment research and

Course description 1. ACTIVATED SLUDGE ACTIVITY TESTS - AEROBIC ORGANIC MATTER REMOVAL - BIOLOGICAL NITROGEN REMOVAL o Nitrification o Denitrification o Anaerobic ammonium oxidation (Anammox) - ENHANCED BIOLOGICAL PHOSPHORUS REMOVAL Anaerobic EBPR batch activity tests Anoxic EBPR batch tests Aerobic EBPR batch tests - BIOLOGICAL SULPHATE REDUCTION 2. RESPIROMETRY - WASTEWATER CHARACTERIZATION - BIOMASS CHARACTERIZATION 2. OFF-GAS ANALYSIS - EMISSION MEASUREMENTS 3. SETTLING TESTS - SLUDGE SETTLEABILITY TESTS IN SECONDARY SETTLING TANKS o SLUDGE VOLUME INDEX (SVI) o DILUTED SLUDGE VOLUME INDEX (DSVI) o BATCH SETTLING CURVE AND HINDERED SETTLING VELOCITY - FLOCCULATION STATE OF ACTIVATED SLUDGE - SETTLING BEHAVIOUR OF GRANULAR SLUDGE 4. MICROSCOPY - THE LIGHT MICROSCOPE - MORPHOLOGICAL INVESTIGATIONS - EXAMINING ACTIVATED SLUDGE SAMPLES MICROSCOPICALLY - FLOUROSCENCE IN SITU HYBDRIDIZATION - COMBINED STAINING



TECHNIQUES 5. MOLECULAR METHODS - EXTRACTION OF DNA - REAL-TIME QUANTITATIVE PCR (qPCR) - AMPLICON SEQUENCING 6. DATA HANDLING - THEORY AND METHODS - METHODOLOGY

Study subjects	1. Activated sludge activity tests 2. Respirometry 3. Off-gas emission tests 4. Settling tests 5. Microscopy 6. Molecular methods 7. Data handling
Course objectives	- To explain the basic theory and main methodological steps of experimental methods. - To critically analyze data and information obtained from experimental methods. - To evaluate the process performance and characteristics of biological wastewater treatment processes. - To design and execute experimental methods for wastewater treatment.
ECTS credits	0.00
Duration	3 week(s) full-time
Language of instruction	English
Instruction modes	computer exercise, group assignment, individual assignment, laboratory work, lecture
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. Preferably 2 to 3 years of practical or research work experience. 2. Relevant wo bachelor (academic bachelor): BSc degree or equivalent qualification in a relevant subject from a recognized 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 deadlines **Start date EU/EEA Students Non-EU/EEA students**
29 Jun 2020 29 May 2020 29 May 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

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
Institution website
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