

## Besluit

### Besluit strekkende tot het verlenen van accreditatie aan de opleiding wo-master Environmental Science van de UNESCO – IHE met de joint degree afstudeerrichtingen Limnology and Wetland Management, Environmental Technology and Engineering en Environmental Technology for Sustainable Development

	<b>Gegevens</b>	
<b>datum</b>	8 augustus 2013	Naam instelling : UNESCO - IHE
<b>onderwerp</b>	Definitief besluit	Naam opleiding : wo-master Environmental Science (106 ECTS)
accreditatie wo-master	Environmental Science van de UNESCO - IHE (001383)	Datum aanvraag : 27 december 2012
		Variante opleiding : voltijd (postinitieel)
		Afstudeerrichtingen : Environmental Science and Technology Environmental Planning and Management Water Quality Management; Joint degree Limnology and Wetland Management, in samenwerking met BOKU, University of Natural Resources and Life Sciences te Wenen en Egerton University te Kenia; Joint degree Environmental Technology and Engineering, in samenwerking met The Institute of Technology te Praag en de Universiteit Gent te Gent; Joint degree Environmental Technology for Sustainable Development, in samenwerking met The Asian Institute of Technology te Bangkok (Thailand).
<b>uw kenmerk</b>	EB-010-BFA	Locatie opleiding : Delft
<b>ons kenmerk</b>	NVAO/20132615/ND	Datum goedkeuren panel : 22 mei 2012
<b>bijlagen</b>	3	Datum locatiebezoeken : 17 t/m 19 september 2012
		Datum visitatierapport : 11 december 2012

Instellingstoets kwaliteitszorg : aangemeld en geaccepteerd voor het invoeringsregime van de instellingstoets kwaliteitszorg als bedoeld in artikel 18.32 b en c van de WHW

#### Aanvullende informatie

De NVAO heeft de instelling op 15 mei 2013 telefonisch om aanvullende informatie gevraagd over bewijsstukken bij de aanvragen joint degrees, over de gehanteerde toelatingsvoorwaarden en over enkele kwantitatieve gegevens. Bij e-mails van 16 en 30 mei 2013 heeft de NVAO de aanvullende informatie ontvangen.

Beoordelingskader voor de beperkte opleidingsbeoordeling van de NVAO (Stcrt. 2010, nr 21523).

Protocol voor Nederlandse aanvragen accreditatie leidend tot een joint degree van 7 juni 2010 (versie februari 2011).

### **Bevindingen**

De NVAO stelt vast dat in het visitatierapport en de aanvullende informatie deugdelijk en kenbaar is gemotiveerd op welke gronden het panel de kwaliteit van de opleiding voldoende heeft bevonden.

Via opgevraagde, aanvullende informatie heeft de instelling naar tevredenheid van de NVAO een nadere toelichting gegeven bij de gehanteerde toelatingscriteria voor de opleiding.

### **Advies van het visitatiepanel**

Samenvatting bevindingen en overwegingen van het panel (hierna ook: the committee).

The judgement of the assessment committee is based on information provided in the critical reflection, the sample of theses, additional documentation provided during the site visit and interviews conducted with staff, students and graduates of the programme. During its assessment, the committee noted positive aspects as well as ones which could be improved. Taking these aspects into consideration, the committee decided that the programme in Environmental Science fulfills the requirements set by the NVAO for accreditation.

#### *Standard 1: Intended learning outcomes*

UNESCO-IHE is a development oriented institute of higher education and the MSc Environmental Science is one of the four MSc programmes offered to mid-career professionals from around the world. Environmental Science offers six specialisations, four of them in cooperation with international partner institutes: Environmental Science and Technology (EST); Environmental Planning and Management (EPM); Water Quality Management (WQM); Limnology and Wetland Management (LWM); Environmental Technology and Engineering (IMETE); Environmental Technology for Sustainable Development (ETSuD).

The programme aims to deliver graduates who are able to use their knowledge of physical, chemical and biological processes in order to develop and implement solutions for environmental problems. For the latter the graduates also need knowledge of social, economic, legal and management processes, and skills that enable them to work in multidisciplinary teams. While the name of the master programme Environmental Science covers a broad area, it is clear to partner institutes and prospective students that at UNESCO-IHE, being an institute for water education, the focus is on water issues. In the double degree programmes, UNESCO-IHE uses the cooperation with partner institutes to cover the broader range of environmental science.

The programme's learning objectives specify the acquirement of scientific knowledge and understanding of natural processes of the environment and the socio-economic concepts underlying its exploitation, the application of this knowledge in interdisciplinary contexts, the ability to conduct research on the basis of a good research plan and appropriate methodologies, and the skills to communicate the results of research to colleagues and

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The character of the programme is considered most appropriate for a field such as Environmental Science. The committee therefore assesses the first standard as satisfactory.

*Standard 2: Teaching-learning environment*

The Delft-based curriculum consists of 106 ECTS and runs over 18 months. It has four distinct phases: a common foundation, specialisation, writing a research proposal and the MSc research project. The committee supports the initiative of the Programme Committee to pay extra attention to the development of academic skills in the curriculum. This is essential not only to prepare the students for their assignments and master thesis, but an assessment of these skills will also identify the students who need extra guidance and tutoring.

The programme has used the T-shape model in designing the curriculum. In this model the vertical bar of the letter T represents the in-depth knowledge of the main discipline and the horizontal bar reflects the basic knowledge of adjacent disciplines. The T-shape model approach was welcomed by the students. They appreciate the design of the programme in first broadening their scope and then focusing again. They praised especially the combination of theory and application and found the balance between breadth and depth to be just right.

The double degree programmes are neatly combined with the specialisation modules of the Delft programme and add a specific regional focus and/or a thematic broadening. The committee concludes that these double degree programmes are a worthwhile addition and that the programme staff ensures that their contents and level are of the same quality as the single degree programme. The committee has looked separately at the three double degrees that are proposed to become joint degrees.

The didactical concept is well-considered. In the beginning of the programme, the emphasis is on lectures, assignments, laboratory sessions and self-study. During the specialisation phase fieldwork, group discussions, role-playing and presentations are added to broaden the students' perspective. The learning objectives are described in clear module sheets. Each module uses a variety of teaching and assessment methods, depending on the goal of the course. Lectures are given by UNESCO-IHE staff and by guest lecturers who provide additional theoretical expertise and examples from the professional field. The students appreciate the input of guest lecturers.

Students find the study load demanding. A large volume of material has to be covered over 18 months, and many students have been out of the classroom for many years. Furthermore, the work on the research project is difficult for many students because only few of them have a research background. The guidance and supervision during the research phase are intensive to provide the students with the necessary support. Two double degrees with partner institutes have a longer duration, ranging from 120 (IMETE) to 125 (ETSuD) EC, indicating a possible need for a study period longer than 18 months.

The academic staff is well-qualified academically and professionally, and has good teaching skills. They are also highly committed. Their international background and experience fit the scope of the programme and the contexts of the students. For additional input guest lecturers are called upon.

Pagina 4 van 8 The Student Office offers non-academic support in a proactive manner and well-coordinated with the academic support by the Programme Coordinator and the Specialisation Coordinator.

The committee recommends to establish for each incoming student a 'portfolio' with his/her initial motivation and career plan, which should be discussed and updated as needed, preferably with a personal mentor from the start.

The committee recognises the often intricate selection of the right candidates with the correct background. It recommends therefore to explore the possibilities for on-line preparation and self-learning opportunities through the e-Campus development. The committee acknowledges the effort to balance the appropriate level of the curriculum and its necessary flexibility within the constraints of the duration of the programme. The committee suggests to look into the possibility of offering a programme of 120 EC for all students and granting credits to incoming students with professional experience, comparable with an internship of 6 months.

The curriculum clearly reflects the T-shaped concept. The group work approach is a useful way to prepare future environmental scientists to face real-life interdisciplinary problems. This approach as well as most of the curriculum allow for good interaction among students. An international exposure is given in field trips and site visits. The institute has well-staffed specific services and good facilities. The committee therefore assesses the second standard as satisfactory.

#### *Standard 3: Assessment and achieved learning outcomes*

The committee established that the assessment system of the UNESCO-IHE functions well. Good control mechanisms ensure that work is systematically and consistently graded. The committee further found the variety of assessment methods to be appropriate. The examination structure has clearly been tailored to the intended learning outcomes of the programme. The assessments are transparent, valid and reliable.

The committee studied a representative sample of the Environmental Science theses. In most cases the committee agreed with the mark given by the thesis committees, but in a number of cases the committee would have given a slightly lower mark. The committee suggests to include an examiner, fully external to the Institute, in all thesis committees. All theses met the minimum requirements for academic quality and some were at a higher level. On this basis the committee concludes that the MSc Environmental Science graduates have achieved the intended learning outcomes of an academic master. The positive effect of the master programme was confirmed by the alumni with whom the committee met. The committee therefore assesses the third standard as satisfactory.

#### **Aanbevelingen**

De NVAO onderschrijft de adviezen van het panel om:

- te onderzoeken of studenten niet voorafgaand aan de start van hun opleiding kunnen worden aangezet tot studie om de behoorlijke verschillen tussen studenten in de beginfase van de opleiding te verkleinen;
- de relatie tussen de beoordelingscriteria van de afstudeerwerken en de eindkwalificaties inzichtelijk te maken;
- de studenten intensiever te begeleiden bij het maken van onderscheid in het afstudeerwerk tussen de bespreking en de conclusies;
- gewichten toe te kennen aan de beoordelingscriteria van de masterthesis.

Ingevolge het bepaalde in artikel 5a.10, derde lid, van de WHW heeft de NVAO het college van bestuur van de UNESCO - IHE te Delft in de gelegenheid gesteld zijn zienswijze op het voornemen tot besluit van 24 juni 2013 naar voren te brengen. Bij e-mail van 24 juli 2013 heeft de instelling gereageerd op het voornemen tot besluit. Dit heeft geleid tot een kleine tekstuele aanpassing en aanvulling van bijlage 2 in het definitieve besluit.

Op grond van het voorgaande besluit de NVAO accreditatie te verlenen aan de wo-master Environmental Science (106 ECTS; variant: voltijd; locatie: Delft) van de UNESCO - IHE te Delft. De opleiding kent de volgende afstudeerrichtingen Environmental Science and Technology, Environmental Planning and Management en Water Quality Management. De opleiding kent de volgende joint degree afstudeerrichtingen:

- Limnology and Wetland Management, in samenwerking met BOKU, University of Natural Resources and Life Sciences te Wenen en Egerton University te Kenia;
- Environmental Technology and Engineering, in samenwerking met The Institute of Technology te Praag en de Universiteit Gent te Gent;
- Environmental Technology for Sustainable Development, in samenwerking met The Asian Institute of Technology te Bangkok (Thailand).

De NVAO stemt in met de omzetting van de afstudeerrichtingen Limnology and Wetland Management, Environmental Technology and Engineering en Environmental Technology for Sustainable Development tot een joint degree.

De NVAO beoordeelt de kwaliteit van de opleiding als voldoende.

#### **Bestuurlijke afspraak**

De NVAO heeft een bestuurlijke afspraak gemaakt met de opleiding om het afstudeerniveau van de joint degrees International Masters in Environmental Technology and Engineering (IMETE) en Environmental Technologies for Sustainable Development (ETSuD) opnieuw te laten beoordelen na afloop van het studiejaar 2015/2016 en de NVAO daarover uiterlijk 1 december 2016 te informeren.

Dit besluit treedt in werking op 1 januari 2014 van kracht tot en met 31 december 2016 (2019)<sup>1</sup>

Den Haag, 8 augustus 2013

De NVAO  
Voor deze:

Lucien Bollaert  
(bestuurder)

Tegen dit besluit kan op grond van het bepaalde in de Algemene wet bestuursrecht door een belanghebbende bezwaar worden gemaakt bij de NVAO. De termijn voor het indienen van bezwaar bedraagt zes weken.

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<sup>1</sup> Gelet op het bepaalde in artikel 18.32c, derde lid, van de Wet op het hoger onderwijs en wetenschappelijk onderzoek (WHW) bedraagt de geldigheidsduur van de accreditatietermijn van de opleiding maximaal drie jaar zolang de instelling nog niet beschikt over een positieve instellingstoets kwaliteitszorg. Zodra de instellingstoets is verkregen, wordt de accreditatietermijn verlengd naar zes jaar.

Onderwerp	Standaard	Beoordeling door het panel
		<i>voltijd</i>
<b>1. Beoogde eindkwalificaties</b>	De beoogde eindkwalificaties van de opleiding zijn wat betreft inhoud, niveau en oriëntatie geconcretiseerd en voldoen aan internationale eisen	V
<b>2. Onderwijsleeromgeving</b>	Het programma, het personeel en de opleidingsspecifieke voorzieningen maken het voor de instromende studenten mogelijk de beoogde eindkwalificaties te realiseren	V
<b>3. Toetsing en gerealiseerde eindkwalificaties</b>	De opleiding beschikt over een adequaat systeem van toetsing en toont aan dat de beoogde eindkwalificaties worden gerealiseerd	V
<b>Eindoordeel</b>		V

De standaarden krijgen het oordeel onvoldoende (O), voldoende (V), goed (G) of excellent (E). Het eindoordeel over de opleiding als geheel wordt op dezelfde schaal gegeven.

**Tabel 1: Rendement.**

<b>Cohort</b>	<b>2009</b>	<b>2010</b>
<b>Rendement</b>	91%	84%

**Tabel 2: Docentkwaliteit.**

<b>Graad</b>	<b>PhD</b>	<b>BKO</b>
<b>Percentage, exclusief gastdocenten</b>	84%	20%
<b>Percentage, inclusief gastdocenten</b>	68%	-

**Tabel 3: Student-docentratio.**

<b>Ratio</b>	1:9.7%
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**Tabel 4: Contacturen.**

<b>Studiejaar</b>	1 en 2
<b>Contacturen</b>	560 uren voor het onderwijsdeel en 90 uren begeleiding in de afstudeerfase

- Prof. dr. André van der Beken (chair), emeritus professor, Free University Brussels (Vrije Universiteit Brussel);
- Prof. Ing. Janos Bogardi, professor in Water Resources at the Faculty of Agriculture of the University of Bonn, Germany;
- Academician Dipak Gyawali, professor at the Nepal Academy of Science and Technology (NAST);
- Prof. dr. Rivka Kfir, extraordinary professor Microbiology and Plant Pathology and senior advisor at the Water Institute, University of Pretoria, South Africa;
- Prof. dr. Grietje Zeeman, professor in New Sanitation at Wageningen University and Research Centre (WUR);
- Franca Kramer BSc, master student of Water Management at Delft University of Technology.

Het panel werd ondersteund door dr. Marianne van der Weiden, secretaris (gecertificeerd).