nvao
nederlands - vlaamse accreditatieorganisatie

# Besluit

**Besluit strekkende tot het verlenen van accreditatie aan de opleiding wo-master Earth and Environment van Wageningen University**

**datum**
9 april 2013
**onderwerp**
Besluit accreditatie wo-master Earth and Environment Wageningen University (001134)
**ons kenmerk**
NVAO/20131076/LL
**bijlage**
3

**Gegevens**

| | | |
|---|---|---|
| Naam instelling | : | Wageningen University |
| Naam opleiding | : | wo-master Earth and Environment (120 ECTS) |
| Datum aanvraag | : | 13 december 2012 |
| Variant opleiding | : | voltijd |
| Tracks | : | Aquatic Ecology and Water Quality Management,<br>Atmospheric Chemistry and Air Quality,<br>Earth System Science,<br>Hydrology and Quantitative Water Management,<br>Land Dynamics,<br>Meteorology,<br>Nature Conservation and Plan Ecology,<br>Soil Biology and Biological Soil Quality,<br>Soil Chemistry and Chemical Soil Quality,<br>Soil Physics, Ecohydrology and Groundwater Management |
| Locatie opleiding | : | Wageningen |
| Datum goedkeuren panel | : | 22 mei 2012 |
| Datum locatiebezoeken | : | 25 en 26 juni 2012 |
| Datum visitatierapport | : | december 2012 |
| Instellingstoets kwaliteitszorg | : | ja, besluit van 2 juli 2012 |

**Beoordelingskader**

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

**Bevindingen**

De NVAO stelt vast dat in het visitatierapport deugdelijk en kenbaar is gemotiveerd op welke gronden het panel de kwaliteit van de opleiding voldoende heeft bevonden. Het visitatierapport geeft de bevindingen en overwegingen weer van het panel over de bacheloropleding Bodem, Water, Atmosfeer en de masteropleiding Earth and Environment van Wageningen University (WU). Het panel heeft beide opleidingen gezamenlijk beoordeeld.

Parkstraat 28 | 2514 JK | Postbus 85498 | 2508 CD Den Haag
P.O. Box 85498 | 2508 CD The Hague | The Netherlands
T + 31 (0)70 312 2300 | F + 31 (0)70 312 2301
info@nvao.net | www.nvao.net

**Advies van het visitatiepanel**

Samenvatting bevindingen en overwegingen van het panel.

In general, the committee concludes that the programme on the interactions between the Earth and the environment close to the surface is unique in the Netherlands. It applauds the excellent facilities and motivated lecturers who are capable of and willing to pay close attention to the students. The main points for attention are the feasibility of the many tracks and the chair groups' freedom to select their own assessment methods and criteria.

Standard 1: Intended learning outcomes

The programme of Earth Science at the WU have, as other academic programmes of Earth Sciences, the planet Earth as the object of study, its genesis and its quality of life. These sciences are strongly interdisciplinary, with interaction between various factors, such as humans, animals, relief, soil, water, lithology, atmosphere, hydrosphere and vegetation. Knowledge is gathered about its origin, current and former composition, and structure and the processes acting in and between the components of geosphere, hydrosphere, atmosphere and biosphere. Equally important is knowledge of how to manage and sustainably use Earth's resources and understand the influence of human activity on the terrestrial system. It takes into account society's rapidly growing demand for well-trained Earth Scientists prepared to tackle scientific and societal issues. The programme of the WU focus on the interactions between Earth and the environment close to the surface. The committee concludes that this focus is unique in the Netherlands.

The objectives of the master's programme are to pass on knowledge, skills and an academic attitude to enable students to practise their profession independently or to continue their training in scientific research. The focus lies on the composition, structures and processes of the upper Earth's zone with special attention being paid to the influence of human activities on the Earth's surface patterns and processes. The orientation of the master's programme seems to meander between an academic research master and a broad, more professionally oriented master. The committee advises that the programme needs to be more clearly defined.

The committee concludes that the programme fits well in the domain specific framework of reference. It states that the framework is an understandable representation of Earth Sciences and offers enough anchor points for programmes to establish their own objectives. Derived from this framework of reference, the programmes have formulated intended learning outcomes. The intended learning outcomes are phrased along the line of the Dublin descriptors. The committee established that the intended learning outcomes are in line with this framework and reflect the level, profile and orientation of the master's programme.

Standard 2: Teaching-learning environment

The master's programme includes ten different thesis tracks. Students select one track as a specialization. Each track contains specific courses, a thesis and an internship. The tracks are Aquatic Ecology and Water Quality Management, - Atmospheric Chemistry and Air Quality, - Earth System Science, - Hydrology and Quantitative Water Management, - Land Dynamics, - Meteorology, - Nature Conservation and Plan Ecology, - Soil Biology and Biological Soil Quality, - Soil Chemistry and Chemical Soil Quality, - Soil Physics, Ecohydrology and Groundwater Management. The master's programme was restructed in 2011. In line with the recommendations from the prior quality assessment committee, the number of master's programmes was reduced from three to one.

The committee is conscious that the research conducted by the chair groups of Wageningen University heavily influences the content of the master's programme. As a consequence, there are still too many tracks. The composition of individual curricula as a track combined with electives makes it difficult to guarantee that every student composes a coherent programme in which all the intended learning outcomes are achieved. The Examining Board should play an active role in controlling and approving the student's programme. The committee also advises evaluating the individually chosen programmes against the intended learning outcomes. The evaluation will show whether the number of tracks is appropriate or not.

The committee concludes that the content and level of the programme are sufficient to guarantee that students achieve the intended learning outcomes. The programme has a distinct academic, research orientation. However, the committee states that the professional orientation of the master's programme should be strengthened, as most graduates choose a non-research-oriented career. The content of the programme could contain more professionally oriented learning skills, possibly with the aid of internships and excursions. The committee is convinced that these improvements will be implemented due to the proactive attitude of management and staff.

The committee concludes that the intake, efficiency and success rates of the master's programme are adequate. According to the critical reflection, the programme is perceived by students as demanding, but during the site visit, the student's did not show indications that their progress is hindered by a high workload.

The committee recommends that improve the programme-related quality assurance should be improved. Although the staff have good insight into the quality of the courses related to their own chair groups, there is a limited overview of both the curricula. In particular, the new master's programme - with many tracks - has to be closely monitored to assess whether the intended learning outcomes are achieved in every track.

The committee states that the programmes are provided by motivated lecturers who are capable and willing to pay close attention to the students. Students profit directly from their research expertise as it is reflected in the education programme. The committee invites the lecturers to exploit their strong international research contacts in a more effective way to enlarge the international profile of the programme. There are many ways to increase the international standing of both programmes, including attracting more students from abroad and providing exchange opportunities for their own students.

The committee noticed that students and staff profit from excellent facilities at the new campus. The laboratories in particular are equipped with modern and high-quality apparatus.

The programmes include fieldwork and practical training. The committee learned that many Earth Science programmes have no legally based safety assurance system for fieldwork. The committee strongly recommends to re-evaluate the content of such a system in order to enhance fieldwork safety as well as legally protect faculty, staff and students. The committee suggests developing a national system in cooperation with the other academic Earth Sciences programmes in the Netherlands. Furthermore, the committee advises that first aid courses should be obligatory for both students and lecturers as well.

Standard 3: Assessment and achieved learning outcomes

The committee verified the assessment system and methods as well as the achievement of intended learning outcomes by students.

It concludes that the assessment system is sufficient but leaves room for improvement. It is convinced that these improvements will be made, considering the proactive attitude of the programme director and staff towards continuous improvement. The main concern of the committee is the chair groups' freedom to develop assessment methods and criteria as it might induce assessment procedures that differ per track or course. The committee learned that there are plans to fix the weighting for each chair group. From the programme's point of view, this was considered fair since it was stated that research characteristics among chair groups differ. For example, data collection is more time consuming in one chair group than in the other groups. As a result, this chair group will put more weight on 'general research competences' than the other groups. The committee strongly disagrees with this policy and states that it is the quality of the individual aspects that count, not so much the time spent on it. Therefore, the committee advises setting the weighting among all chair groups equally. The committee is positive about the rubrics, formulated in the new forms for evaluating theses and internships. They are comprehensive and allow a reliable grading. The grading of theses and internship should be further improved by introducing a fixed weighting of aspects on which grades are based.

The programmes offer many re-sit opportunities. The committee strongly advises management to revise this policy because it induces delay during the study programme. Moreover, it does not prepare students to deal with compelling deadlines, which is an important skill and attitude required by both academic research or a professional career.

To assess the achievement of the learning outcomes, the committee has studied several theses. Based on the theses and the information gathered about progress and success rates, the committee established that students achieve the learning outcomes well. The committee is impressed by the novelty of research topics in the master's theses.

**Aanbevelingen**

De NVAO onderschrijft de aanbevelingen van het panel, in het bijzonder de volgende:

- afstemming van de individueel ingerichte programma's op de beoogde leerresultaten,
- organiseren van een haalbaar aanbod van afstudeerrichtingen (*tracks*),
- benutting van de bestaande internationale contacten om het curriculum verder te internationaliseren,
- uniforme weging voor de gehele opleiding van de criteria voor de masterthesis,
- integrale evaluatie van het curriculum, in plaats van per vak.

**Verzoek**

De NVAO verzoekt de instelling om haar te rapporteren over de invoering van de 'harde knip' in de aansluiting tussen de bachelor Bodem, Water, Atmosfeer en onderhavige masteropleiding.

**Besluit**

Ingevolge het bepaalde in artikel 5a.10, derde lid, van de WHW heeft de NVAO het college van bestuur van de Wageningen University te Wageningen in de gelegenheid gesteld zijn zienswijze op het voornemen tot besluit van 5 maart 2013 naar voren te brengen. Bij brief van 8 april 2013 heeft de instelling van die gelegenheid gebruik gemaakt om te reageren. Dit heeft geleid tot een aanvulling in bijlage twee.

De NVAO besluit accreditatie te verlenen aan de wo-master Earth and Environment (120 ECTS; variant: voltijd; locatie: Wageningen) van Wageningen University te Wageningen. De opleiding kent de volgende afstudeerrichtingen: Aquatic Ecology and Water Quality Management, Atmospheric Chemistry and Air Quality, Earth System Science, Hydrology and Quantitative Water Management, Land Dynamics, Meteorology, Nature Conservation and Plan Ecology, Soil Biology and Biological Soil Quality, Soil Chemistry and Chemical Soil Quality, Soil Physics, Ecohydrology en Groundwater Management. De NVAO beoordeelt de kwaliteit van de opleiding als voldoende.

Dit besluit treedt in werking op 1 januari 2014 en is van kracht tot en met 31 december 2019.

Den Haag, 9 april 2013

Nederlands-Vlaamse Accreditatieorganisatie

Ann Demeulemeester
(vicevoorzitter)

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.

 **Bijlage 1: Schematisch overzicht oordelen panel**

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

 **Bijlage 2: Feitelijke gegevens**

| | |
|---|---|
| Docent-student ratio | 1 : 5,48 |
| Kwalificatie docenten | Hoogst genoten opleiding:<br>92,5 % PhD<br>2,9 % wo-ma |
| Contacturen | Eerste jaar: 731 uur/jaar<br>Tweede jaar: 30 uur/jaar |
| Rendement | cohort 2007: 88% masterdiploma na 2 jaar<br>cohort 2008: 78% masterdiploma na 2 jaar |

 **Bijlage 3: panelsamenstelling**

- Prof. M.A. Herber, (voorzitter) professor of Geo-Energy, Rijksuniversiteit Groningen;
- Prof. M. Landrø, (lid) professor of Applied Geophysics, NTNU Tronheim (Norwegian University of Science and Technology), Noorwegen;
- Prof. J.W. Hopmans, (lid) professor of Vadose Zone Hydrology, University of California (Davis), Verenigde Staten;
- Prof. Emeritus D.E. Walling, (lid) hydrologist/geomorphologist, University of Exeter, Verenigd Koninkrijk;
- Dr. M.A. Ossevoort, assistant professor of Science Education and Communication, Rijksuniversiteit Groningen;
- E. Rost, (student-lid) master's student of Earth Sciences, VU Amsterdam.

Het panel werd ondersteund door Dr. Willemijn van Gastel, secretaris (gecertificeerd).