

## Besluit **Besluit strekkende tot het verlenen van accreditatie aan de opleiding wo-master Earth Sciences van de Vrije Universiteit Amsterdam**

	<b>Gegevens</b>	
<b>datum</b>	23 juli 2013	<b>Naam instelling</b> : Vrije Universiteit Amsterdam
<b>onderwerp</b>	Besluit accreditatie wo-master Earth Sciences van de Vrije Universiteit Amsterdam (001233)	<b>Naam opleiding</b> : wo-master Earth Sciences (120 ECTS)
<b>uw kenmerk</b>	CvB/EK/dv/2012/1930	<b>Datum aanvraag</b> : 18 december 2012
<b>ons kenmerk</b>	NVAO/20132520/SL	<b>Variant opleiding</b> : voltijd
<b>bijlagen</b>	3	<b>Afstudeerrichtingen</b> : Palaeoclimatology and Geo-Ecosystems; Applied Environmental Geosciences; Earth Sciences and Economics; Archaeometry; Landscape Archaeology; Solid Earth; Science Communication; Education.
		<b>Locatie opleiding</b> : Amsterdam
		<b>Datum goedkeuren panel</b> : 22 mei 2012
		<b>Datum locatiebezoeken</b> : 18 en 19 september 2012
		<b>Datum visitatierapport</b> : februari 2013
		<b>Instellingstoets kwaliteitszorg</b> : aangemeld en geaccepteerd voor het invoeringsregime als bedoeld in artikel 18.32 b en c van de WHW

### **Aanvullende informatie**

De NVAO heeft bij e-mail van 1 mei 2013 de instelling aanvullende informatie gevraagd over enkele feitelijke gegevens. Bij e-mail van 7 mei 2013 heeft de NVAO de aanvullende informatie ontvangen.

### **Beoordelingskader**

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

### **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. Het visitatierapport geeft de bevindingen en overwegingen weer van het panel over de bachelor- en masteropleidingen Aardwetenschappen, Earth Sciences en Hydrology van de Vrije Universiteit Amsterdam. Het panel heeft ook aardwetenschappelijke wo-opleidingen aan drie andere universiteiten beoordeeld.

### **Advies van het visitatiepanel**

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

#### Standard 1: Intended learning outcomes

The bachelor's and master's programmes Earth Sciences and the master's programme Hydrology at the VU 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, fauna, 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 the 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 focus of the master's programme Earth Sciences is also broad. However, because students will have already obtained an undergraduate degree, it focuses on six research specialisations. The committee values the broad spectrum of specialisations offered by the master's programme Earth Sciences, but is also concerned about its viability. Currently, the level is adequate, but the committee advises that its future viability should be carefully evaluated, because it takes much effort to maintain that many specialisations at the required level.

The aim of the master's programme Earth Sciences is to train students to operate as independent professionals within the disciplines covered by the master's programme, and to prepare students for a career in scientific research in the Earth Sciences or to apply Earth Sciences for consulting industries, governmental or other agencies. The committee concludes that the programme is strongly oriented towards academic research, but also demonstrates an adequate professional orientation.

The committee concludes that the programme properly relates to the domain-specific framework of reference. The framework is an effective and correct representation of Earth Sciences and offers enough anchor points for programmes to establish their own objectives. Derived from this framework of reference, the programme has formulated intended learning outcomes. The intended learning outcomes are in line with the Dublin descriptors. The committee confirmed that the intended learning outcomes are in line within this framework and reflect the level, and orientation of the programme.

#### Standard 2: Teaching-learning environment

The programme consists of 120 ECTS spread over two years. The programme contains six research tracks, Paleoclimatology and Geo-Ecosystems, Applied Environmental Geosciences, Earth Sciences and Economics, Archeometry, Landscape Archaeology, Solid Earth, and two communication tracks, Education and Science Communication. The tracks in Science Communication and Education are one-year programmes that cannot be combined with each other. They must be preceded by 33 ECTS of courses selected from one of the research specialisations. There are five specialisations, which directly relate to the six research tracks (the Archeometry and Landscape archaeology tracks are combined to provide a single specialisation Archeometry and Archaeology). The research tracks consist

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The committee concludes that the content and level of the master's programme Earth Sciences are sufficient to guarantee that students achieve the intended learning outcomes. It is convinced that together the tracks offer a broad spectrum of Earth Sciences and it approves of the offering of both a research and professional profile. Students feel well prepared for an academic research career. The main concern of the committee is the large number of specialisations. Although the strong connection with the research groups guarantees the transfer of state of the art knowledge into the education programme, it may prove difficult to continue to offer all of these specialisations at the required level. Furthermore, the committee holds the opinion that freedom for students to choose courses within and among tracks reduces the coherence of the programmes followed by individual students and causes delays in study progress.

*Didactic concepts and methods.* All the VU programmes aim to offer an educational environment with ample scope for students to exploit their talents and achieve their ambitions. The committee values the creation of a context in which students are able to explore and express their own talent and ambition, but also noted that in this context students appear not to be intellectually challenged in an optimal manner. The committee advises that the aim to create an optimal context for realising the students' ambition on one hand, whilst expressing the programme's ambition on the other, should be actively maintained. It will enable students to improve themselves and become self-critical Earth Scientists.

*Intake and studyload.* Intake numbers are increasing. Nevertheless, student progress is seen as an important source of concern. Many students do not graduate on time. The committee concludes that the programme should devote more attention to student progress. The committee holds the opinion that a better expression of the programme's ambition, accompanied by less possibilities for re-sitting assessments and less electivity will result in improved study progress.

*Internationalisation.* The committee suggests that the international orientation of the programme can be improved. There are many ways to increase its standing in the world, including attracting more students from abroad by gradually change the language of Dutch elements of the programme into English. This will enhance the international orientation of the programme and help students prepare for the international market.

*Staff.* The committee concluded that the programme is taught by lecturers who are both willing and able to pay close attention to the students. It is positive about both their research and educational qualities. Together with the programme coordinator and study advisor, they create a supportive and accessible surrounding for the students.

*Quality Assurance.* In the future, the increasing number of students will influence the curriculum. The committee holds the opinion that the Board of Education should take a more

Pagina 4 van 9 proactive and central role to guarantee the quality of the programme. Furthermore, a positive and open attitude on the part of both management and lecturers is essential to make plans for maintaining the quality and quantity of staff.

*Safety.* Because it focuses on Earth Sciences, the programme includes fieldwork and practical training. Because safety is an important issue in fieldwork, the committee strongly recommends that a legally based safety assurance system is needed to legally protect faculty, staff and students. The committee applauds the already existing safety guidelines, but these documents have no legal status. As in other programmes in Earth Sciences in the Netherlands, lecturers, management and students are not fully aware of their responsibilities. The committee therefore recommends that a safety assurance system should be developed in cooperation with the other academic education programmes in Earth Sciences in the Netherlands. The current guidelines of the VU programmes in Earth Sciences will be very useful in implementing such a system, if they are given legal status. The committee also advises that teaching staff should ensure that safety rules are enforced in the field. Finally, the committee recommends obligatory first aid courses for both students and lecturers.

#### 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 satisfactory.

The committee applauds the efforts of the assessment committee to evaluate the quality of the assessments. The committee encourages further improvement of this quality evaluation, e.g. with the introduction of peer review to evaluate the requirements of assessments. Although the committee suggests some improvements in grading the thesis, it is very positive about the use of the checklist to help in grading a thesis in an objective and transparent manner.

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 has established that students achieve the learning outcomes to a satisfactory level. Most of the theses seen from the programme have a qualitative research character. This is seen to result from a curriculum with a substantial part devoted to fieldwork and limited time allocated for training in methods of data analysis. The committee was nevertheless pleasantly surprised by some theses in which high level quantitative methods were used.

#### **Aanbevelingen**

De NVAO onderschrijft de aanbevelingen van het panel om

- zorgvuldig te evalueren in hoeverre een programma met zoveel specialisaties in de toekomst te handhaven zal zijn;
- meer aandacht te besteden aan studievoortgang;
- de internationale oriëntatie te versterken;
- in samenwerking met andere opleidingen een adequaat veiligheidsprotocol voor veldwerk in te stellen zoals in het visitatierapport is omschreven.

Pagina 5 van 9 **Bestuurlijke afspraken**

Gelet op het belang van borging van de toetskwaliteit en in lijn met opmerkingen hierover in het visitatierapport, heeft de NVAO met de instelling een bestuurlijke afspraak gemaakt die als volgt luidt:

Uiterlijk 1 april 2015 zal de instelling een jaarverslag van de examencommissie over het academiejaar 2013-2014 toezenden aan de NVAO, waarin aandacht wordt besteed aan de implementatie van de verbetermaatregelen ten aanzien van de toetsing die in het visitatierapport zijn omschreven.

Gelet op de aanbeveling in het visitatierapport ten aanzien van de omvang van het ingezette personeel, dat in een eerdere visitatie ook aan de orde is gesteld, heeft de NVAO met de instelling een bestuurlijke afspraak gemaakt die als volgt luidt:

Uiterlijk 1 januari 2014 zal de instelling een plan van aanpak met indicatoren en timing toezenden aan de NVAO, gericht op het handhaven van een voldoende aantal docenten van hoge kwaliteit.

Het college van bestuur van de instelling heeft deze afspraken bij brief van 26 juni 2013 bevestigd.

Ingevolge het bepaalde in artikel 5a.10, tweede lid, van de WHW heeft de NVAO het college van bestuur van de Vrije Universiteit Amsterdam te Amsterdam in de gelegenheid gesteld zijn zienswijze op het voornemen tot besluit van 27 mei 2013 naar voren te brengen. Bij e-mail van 18 juli 2013 heeft de instelling gereageerd op het voornemen tot besluit. Dit heeft geleid tot enkele aanpassingen in het besluit.

De NVAO besluit accreditatie te verlenen aan de wo-master Earth Sciences (120 ECTS; variant: voltijd; locatie: Amsterdam) van de Vrije Universiteit Amsterdam te Amsterdam. De opleiding kent de volgende afstudeerrichtingen:

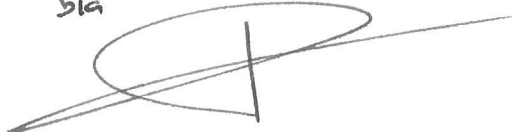
Palaeoclimatology and Geo-Ecosystems; Applied Environmental Geosciences; Earth Sciences and Economics; Archaeometry; Landscape Archaeology; Solid Earth; Science Communication; Education.

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 2016 (2019)<sup>1</sup>.

Den Haag, 23 juli 2013

De NVAO  
Voor deze:

bla  


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 opleidings specifieke 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>2008</b>	<b>2009</b>
<b>Rendement</b>	50%	68%

**Tabel 2: Docentkwaliteit.**

<b>Graad</b>	<b>MA</b>	<b>PhD</b>	<b>BKO</b>
<b>Percentage</b>	3%	97%	31%

**Tabel 3: Student-docentratio.**

<b>Ratio</b>	6
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**Tabel 4: Contacturen.**

<b>Studiejaar</b>	<b>1</b>	<b>2</b>
<b>Contacturen</b>	17	17



- Prof. M.A. Herber (chair), professor of Geo-Energy, University of Groningen, the Netherlands;
- Prof. M. Landrø, professor of Applied Geophysics, NTNU Trondheim (Norwegian University of Science and Technology), Norway;
- Prof. J.W. Hopmans, professor of Vadose Zone Hydrology, University of California (Davis), USA;
- Prof. Emeritus D.E. Walling, hydrologist/geomorphologist, University of Exeter, UK;
- Drs. R.L. Prenen, Msc, independent educational advisor;
- M.M. Cazemier (student member), master's graduate of Earth Sciences, Hydrology and Water Quality, Wageningen University.

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