

Besluit **Accreditatiebesluit met een positief eindoordeel voor de opleiding Master of Science in Molecular Biology (master) van de Vrije Universiteit Brussel i.s.m. de Katholieke Universiteit Leuven en de Universiteit Antwerpen**

datum	Samenvattende bevindingen en overwegingen
30 september 2016	De NVAO steunt haar inhoudelijke besluitvorming op de onderstaande elementen uit het
onderwerp	visitatierapport.
Accreditatiebesluit	
Master of Science in	<i>Generieke kwaliteitswaarborg 1 – Beoogd eindniveau</i>
Molecular Biology (master)	De visitatiecommissie (commissie) beoordeelt het beoogd eindniveau als voldoende.
Vrije Universiteit Brussel	
(004887)	The programme aims to strengthen and update the theoretical and practical skills of young
bijlagen	scientists from developing countries who are already involved in either human or animal
4	health care, or agricultural research. The goal of the programme is not just to transfer
	technology but rather to train participants to acquire the ability to cope with a wide range of
	scientific problems and challenges and to provide them with the intellectual tools needed to
	develop a molecular biological approach to tackle the problems their country is facing.

Although originally designed to meet the needs of students from developing countries, the programme offers an excellent opportunity for those who seek re-orientation to enter the world of molecular biology. After two years of study, graduates should be able to disseminate their knowledge and skills at home and they should be aware of ethical issues that are related to this field.

This overall objective has been translated into 12 domainspecific learning outcomes. According the self-evaluation report , the Master of Science in Molecular Biology is a unique study programme in Flanders. Consequently, the learning outcomes that were defined for the programme coincide with the domain-specific learning outcomes. The panel regrets the limited scope of international benchmarking, comparison with other programmes and reflection by international experts on the learning outcomes to prove it. This makes it harder for stakeholders to judge the level of the programme.

In conclusion, the panel finds that the programme learning outcomes comply with all formal requirements. There is an emphasis on fundamental research and the targeted level is high. The limited scope of international benchmarking makes it harder for stakeholders (future students, the working field, etc.) to judge the level of the programme. The panel strongly advises the implementation of a periodic benchmark of the programme and the programme-specific learning outcomes.

De commissie beoordeelt het onderwijsproces als goed.

The programme counts 120 ECTS and consists of two years. In the first year, all students register at VUB and all lectures and some of the practicals take place at the VUB campus. In the second year, students of the Animal Production and Plant Production profiles register at KU Leuven, while students of the Human Health profile register at VUB. All common courses take place at the VUB campus, as well as the courses of the Human Health profile. In the first year 57 of the 60 ECTS are compulsory.

In the second year, all students follow four common core courses, taught during the first semester. In the second semester, the students follow the specialised courses of the Human Health, Animal Production, or Plant Production profile. Each profile consists of 3 courses, together worth 12 ECTS, plus a master's thesis of 30 ECTS. The choice of profile is already determined before the start of the programme, based on the students' previous (bachelor) studies and envisaged career development. However it is still possible to change during the first year.

While in the first year knowledge acquired mainly originates from lectures based on text books, in the second year research papers are an important source of information. Especially in the second year, students are supposed to also acquire new knowledge during private study (i.e. reading prescribed chapters in books and research papers related to the course contents). The use of film is becoming more and more common in many classes to illustrate certain aspects of the lectures more effectively.

All newcomers are welcomed at the start of the academic year. A meeting is organised at which they receive information on the structure and content, historical background and objectives of the programme. During their studies, the students can always rely on the lecturers whenever they meet problems with course content. Contacts between lecturers and students are open.

At university level the Study Guidance Center or SGC, located on the VUB campus, offers study guidance to all students.

In the first year, the practicals take place at the VUB campus or in specific research labs. All labs are well equipped. In the second year, lectures take place at the VUB or at KU Leuven, depending on the profile that has been chosen. The two universities are at a relatively short distance from each other. To make it easier for the students, profile courses are grouped together in a single day. All students have free access to the libraries of the organising universities.

The panel concludes that the programme management has created a cohesive learning environment. The curriculum is coherent and allows students to achieve the learning outcome targets. There is intense interaction between the key stakeholders (lecturers, students and support staff). The panel therefore concludes that there is an effective internal quality assurance system. The expertise, dedication and enthusiasm of the lecturers and support staff concerned is of crucial importance. Despite this, the panel wishes to recommend that the programme management should consider how more flexibility can be built into the programme. Finally, the programme management should work to ensure a

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Generieke kwaliteitswaarborg 3 – Gerealiseerd eindniveau

De commissie beoordeelt het gerealiseerde eindniveau als voldoende.

In the first year the most common evaluation form is oral examination with written preparation. Oral examination without written preparation is scarcely used, and only in the second year. Another evaluation form commonly used is the written examination with either open or closed questions, or a combination of the two.

In the second year, self-study assignments are presented and discussed during the oral (or occasionally written) examination. For the evaluation of the practicals, multiple evaluation forms are used, both formative and summative. Another evaluation form used in this context (mainly during mock defences) is peer assessment. The master's thesis has to be defended in public before a jury.

In the period from 2006 – 07 to 2011 – 12, about 95% of the students finished the programme after two years. The study yield is slightly higher at KU Leuven (where only students of the second year register) than at VUB. This is mainly due to trajectory starters, who all have to register at VUB. In recent years a decrease in study yield has been reported, at KU Leuven as well as at VUB. This is mainly due to the fact that some students postpone the defence of their master's thesis till January of the next year.

Within the group of non-scholarship students a remarkably lower number of students graduate in time. Students without a scholarship perform in general less well because they often have to work to pay for their studies, accommodation and living costs. Among all students, but especially those without a scholarship, there is a tendency to spread their studies over longer periods of time.

Graduates are in high demand on the job market. Three sectors are major employers: public service/government, education and training and the medical/health care sector. Some of the graduates are active as advisors to policy makers on issues related to science in general and molecular biology/biotechnology in particular. Remarkably, hardly any of the graduates end up in industry. Graduates either go into the job market or continue their studies.

The panel has viewed a selection of exam questions and finds their quality satisfactory, focused on assessing knowledge and insight. Standard answering formats are sometimes used, but not (yet) overall. The panel finds feedback on evaluation somewhat lacking. The assessment panel has read a sample of 12 recently written master's theses. According to the panel, the quality of these master's theses is quite good and consistent with the awarded grades, but there are no clear criteria outlining how the final grade is made. The panel considers it necessary to create for the master's thesis an assessment form in the short term with a clear link to the learning outcomes. According to surveys among alumni, the employed graduates are in general (very) satisfied with their current job. There is a general agreement amongst the alumni that their education prepared them adequately for their current position.

Overall, the panel finds that the learning outcome targets are achieved. Nearly all alumni who responded to a questionnaire stated that the objectives of the programme had been

Pagina 4 van 9 reached. The quality of the master's theses and the high number of students enrolling in a PhD are indicators of success. It is not so clear to what extent capacity-building is achieved, in other words how many alumni eventually return home and will contribute to the development of their country.

Eindoordeel commissie

De commissie heeft vastgesteld dat de opleiding Master of Science in Molecular Biology (master) voldoet aan alle generieke kwaliteitswaarborgen. Ze beoordeelt de kwaliteit van de opleiding als voldoende.

Aanbevelingen commissie

De NVAO onderschrijft de aanbevelingen van de commissie.

- Het visitatierapport is opgesteld en onderbouwd overeenkomstig het toepasselijke Kader voor de opleidingsaccreditatie 2de ronde (8 februari 2013);
- De commissie heeft voor de externe beoordeling het visitatieprotocol gevolgd zoals vastgesteld door de Vlaamse Universiteiten en Hogescholen Raad (augustus 2013);
- Het visitatierapport geeft inzicht in de samenstelling van de commissie;
- Het visitatierapport bevat een onderzoek ten gronde naar de aanwezigheid van voldoende generieke kwaliteitswaarborgen.

Besluit¹

betreffende de accreditatie van de Master of Science in Molecular Biology (master) van de Vrije Universiteit Brussel in samenwerking met de Katholieke Universiteit Leuven en de Universiteit Antwerpen.

De NVAO,
Na beraadslaging,
Besluit:

Met toepassing van de Codex Hoger Onderwijs, in het bijzonder de artikelen II.133-II.149, besluit de NVAO accreditatie te verlenen aan de opleiding Master of Science in Molecular Biology (master) georganiseerd door de Vrije Universiteit Brussel in samenwerking met de Katholieke Universiteit Leuven en de Universiteit Antwerpen. De opleiding wordt aangeboden te Brussel en Leuven zonder afstudeerrichtingen. De kwaliteit van de opleiding is voldoende.

De accreditatie geldt van 1 oktober 2016 tot en met 30 september 2024.

Den Haag, 30 september 2016

De NVAO
Voor deze:



Marc Luwel
(bestuurder)

¹ Het ontwerp accreditatiebesluit werd aan de instelling bezorgd voor eventuele opmerkingen en bezwaren. Bij e-mail van 27 september 2016 heeft de instelling van de gelegenheid gebruik gemaakt om te reageren. Dit heeft niet geleid tot aanpassingen.

De onderstaande tabel geeft per generieke kwaliteitswaarborg het globaal oordeel van de NVAO weer, alsook het eindoordeel.

Generieke kwaliteitswaarborg	Oordeel
1. Beoogd eindniveau	Voldoende
2. Onderwijsproces	Goed
3. Gerealiseerd eindniveau	Voldoende
Eindoordeel opleiding	Voldoende

Naam instellingen	Vrije Universiteit Brussel Katholieke Universiteit Leuven Universiteit Antwerpen
Adres instellingen	– Pleinlaan 2 B-1050 BRUSSEL – Naamsestraat 22, bus 5000 B-3000 Leuven – Prinsstraat 13 B-2000 Antwerpen
Aard instellingen	ambtshalve geregistreerd
Naam associaties	Universitaire Associatie Brussel, Associatie Universiteit & Hogescholen Antwerpen, Associatie KU Leuven
Naam opleiding (Graad, kwalificatie, specificatie)	Master of Science in Molecular Biology
Niveau en oriëntatie	Master
Bijkomende titel	geen
Opleidingsvarianten: – Afstudeerrichtingen – Studietraject voor werkstudenten	geen
Onderwijstaal	Engels
Vestigingen opleiding	Brussel en Leuven
Studieomvang (in studiepunten)	120
Vervaldatum accreditatie, tijdelijke erkenning of erkenning nieuwe opleiding	30 september 2016
Academieja(a)r(en) waarin opleiding wordt aangeboden ²	2015 - 2016
(Delen van) studiegebied(en)	Toegepaste biologische wetenschappen
ISCED benaming van het studiegebied	Natural sciences, mathematics and statistics - Biological and related sciences

² Betreft het lopende academiejaar, op het ogenblik van de accreditatieaanvraag

De leerresultaten van deze master bouwen voort op deze van de bachelor in de bio-ingenieurswetenschappen.

1. Over een brede en diepgaande kennis beschikken van biologische processen op het moleculaire niveau, en van het functioneren van levende organismen.
2. Over een diepgaande kennis beschikken van, en inzicht hebben in de toepasbaarheid van de moleculaire biologie met het oog op het verbeteren van de menselijke gezondheid, de dierlijke productie of de gewasproductie.
3. ICT gebruiken in 'data mining', in het verwerken van gegevens, en in wetenschappelijke communicatie.
4. Over de praktische vaardigheden beschikken om onderzoek in de moleculaire biologie te plannen en uit te voeren.
5. Functioneren als lid van een interdisciplinair team.
6. Door onderzoek in de moleculaire biologie een bijdrage kunnen leveren aan problemen in ontwikkelingslanden.
7. Kritisch kunnen reflecteren op gekende en nieuwe theorieën binnen de specialisatie.
8. Wetenschappelijke en sociale aspecten van toegepaste moleculaire biologie kunnen beoordelen.
9. Eigen onderzoek, ideeën en opinies kunnen presenteren en rapporteren, zowel mondeling als schriftelijk, aan vakgenoten en een breder publiek.
10. Over de nodige kennis beschikken om bij te dragen tot het opzetten van nationale en internationale samenwerkingsverbanden.
11. De verworven kennis in zijn/haar land en/of streek kunnen verspreiden door onderwijs- en onderzoeksactiviteiten.
12. Zich bewust zijn van de ethische dimensie in onderzoek en publicatie.

Voorzitter:

- Prof.dr.ir. Wim Rulkens, em. hoogleraar Milieutechnologie, Wageningen University.

Leden:

- Prof.dr.ir. Akke van der Zijpp, em. hoogleraar Dierlijke Productiesystemen, Wageningen University;
- Prof.dr. Gerrit Heil, Director Undergraduate School bètawetenschappen, Utrecht University;
- Dr.ir. Jaak Lenvain, ontwikkelingsexpert voor VLIR-UOS;
- Prof.dr. Dietrich Knorr, hoogleraar Food technology, Berlin University of Technology;
- Prof. Guy Garrod, Reader in Environmental Economics, Newcastle University;
- Dr. Karin Scager, senior adviseur, Interfacultair Instituut voor Lerarenopleiding, Onderwijsontwikkeling en Studievaardigheden, Universiteit Utrecht (onderwijsdeskundige);
- Thomas Alderweireldt, 1MA bio-ingenieurswetenschappen, UGent (student-lid).

Tot projectbegeleider van de visitatie en secretaris van de commissie worden benoemd:

- Wouter Teerlinck, stafmedewerker kwaliteitszorg;
- Peter Daerden, stafmedewerker kwaliteitszorg;
- Jasper Stockmans, stafmedewerker kwaliteitszorg.