Nutrition and Health

Faculty of Agricultural and Environmental Sciences, Wageningen University

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CONTENTS

This report was finalized on 20 November 2012

Report on the bachelor programme in Voeding en Gezondheid and the master programme in Nutrition and Health of Wageningen University

This report takes the NVAO's Assessment framework for limited programme assessments as a starting point.

Administrative data regarding the programmes

Bachelor programme in Voeding en Gezondheid (Nutrition and Health)

Name of the programme:	Voeding en Gezondheid
CROHO number:	56868
Level of the programme:	bachelor
Orientation of the programme:	academic
Number of credits:	180 EC
Specializations or tracks:	not applicable
Location(s):	Wageningen
Mode(s) of study:	full time
Expiration of accreditation:	31-12-2013

Master programme in Nutrition and Health

Name of the programme:	Nutrition and Health
CROHO number:	66868
Level of the programme:	master
Orientation of the programme:	academic
Number of credits:	120 EC
Specializations or tracks:	Epidemiology and Public Health Nutritional Physiology and Health Status Molecular Nutrition and Toxicology Sensory Science
Location(s):	Wageningen
Mode(s) of study:	full time
Expiration of accreditation:	31-12-2013

The visit of the assessment committee Nutrition and Health to the Faculty of Agricultural and Environmental Sciences of Wageningen University took place on 4 and 5 July 2012.

Administrative data regarding the institution

Name of the institution:	Wageningen University
Status of the institution:	publicly funded institution
Result institutional quality assurance assessment:	positive

Quantitative data regarding the programmes

The required quantitative data regarding the programmes are included in Appendix 5.

Composition of the assessment committee

The committee that assessed the bachelor programme in Voeding en Gezondheid and the master programme in Nutrition and Health consisted of:

- Prof. F. Zwarts (chair), professor at University of Groningen and professor and manager at University Campus Fryslân;
- Mrs. R.L. Prenen, MSc, independent educational adviser;
- Dr. K.H. Wagner, associate professor in Nutrition Sciences and Food Quality at the University of Vienna (Austria);
- Prof. J. Dierkes, professor of Clinical Nutrition at the University of Bergen (Norway);
- Mrs. K. Diem, BSc, student of the master programme Nutritional Sciences, Faculty of Life Sciences, University of Vienna (Austria).

The committee was supported by Dr. M.J.V. Van Bogaert, who acted as secretary.

Appendix 1 contains the curricula vitae of the members of the committee.

General information regarding Wageningen University

A total of 31 educational programmes of Wageningen University which could not be included in a national disciplinary assessment had to be assessed in 2012 in order to apply for reaccreditation. In consultation with QANU, Wageningen University decided to divide the work among fourteen committees in the period between March and July 2012. For each site visit different expert committee members were invited to assess the programmes. In addition to the expert committee members, two non-expert committee members were involved as core members in all site visits and programme assessments. These non-expert committee members were the chairman, Prof. F. Zwarts, and the educational expert, Mrs. R.L. Prenen, MSc. This construction was chosen to guarantee consistency between the fourteen assessments as well as to respect the diversity between the programmes. Prior to the site visits an extended kick-off meeting was held in February 2012, during which topics applicable to all programmes were discussed (for the programme, see Appendix 6). In addition to the core members of the committee, an expert member (Prof. E. Van Damme), a student member (Mrs. T.I.E. Veldkamp, BSc) and both secretaries to the committees (Dr M.J.V. Van Bogaert and Mrs. M. Maarleveld, MSc) were present. During the kick-off meeting, interviews were held with representatives of the Education Institute, Programmme Committees, study advisers, Examining Boards and alumni. The findings of the kick-off meeting were used as input for the fourteen site visits and are incorporated in the committee reports on the 31 educational programmes. Based on the information received in the first five site visits, the core committee members held another interview with the Examining Boards and a selection of study advisers. This meeting was held on 6 June 2012 and provided additional insight into the functioning of and relation between the Examining Boards and study advisers.

Wageningen University
Wageningen University is comprised of one faculty, the Faculty of Agricultural and Environmental Sciences. The Faculty consists of 80 chair groups, arranged in five departments. All educational programmes, bachelor and master, are organized by the Education Institute (OWI). The Board of the OWI is responsible for the content, quality and finances of the educational programmes. Every programme has a programme director and a Programme Committee, consisting of equal numbers of students and academic staff. The Programme Committee is responsible for the content and quality of the programme, though in a formal sense this is subject to approval by the Board of the OWI. The programme director is responsible for the realization of the programme.

The courses are provided by staff of the chair groups, the 'supply side'. The Programme Committees are considered the 'demand side', with the programme director being the 'matchmaker'.

Wageningen has four Examining Boards, usually consisting of five to eight people from different disciplines. Before the site visit period, these boards were in the process of strengthening the quality management of assessment processes and procedures.

Each programme has one or more study advisers, who are tasked with supporting students throughout their study career. Study advisers provide information and invite students for progress evaluations and meetings to plan the student's individual curriculum. Each student needs the study adviser's approval for the elective parts of the programme s/he has chosen.

Internationalization
Wageningen University has an international reputation, in terms of both research qualities and the number of international master students. The committee especially considered the latter point since there are both possible drawbacks and advantages to having many international students. Extensive discussions during the site visits made it clear to the committee that despite the fact that it will always be difficult to assess the quality of enrolling international students, the programme managements are well aware of the imperfections of its procedures and have tightened the selection in the past few years. Overall the committee thinks that the advantages of having many international students outweigh the disadvantages.

Working method of the assessment committee

Preparation
After receiving the critical reflection, the project manager checked the quality and completeness of the information provided. After approval, the critical reflection was forwarded to the committee, in both printed form and digitally. In addition, the committee members selected and read a total of 15 theses for each programme that was assessed (see Appendix 7).

Before the site visit the project manager created a draft programme for the interviews (see Appendix 6). The draft programme was discussed with the chair of the committee and the coordinator of the educational institute. As requested by QANU, the coordinators of the programmes carefully composed a select and representative panel for all interviews.

Site visit
During the initial meeting at the start of each site visit, the committee members discussed among themselves their findings regarding the critical reflection and the theses. They also discussed their task and working methods and the proposed domain-specific requirements (see Appendix 2).

During the site visit, interviews were held with representatives of the programme, students, staff members, the Educational Committee, and a study advisor. The Examining Boards were interviewed in the extended kick-off meeting, as can be read on page 6. The committee also received additional information, for example, study books and reports from the meetings of the Educational Committee. This information was examined during the site visit. When considered necessary, committee members could read additional theses during the site visit. A consultation hour was scheduled to give students and staff of the programmes the opportunity to talk to the committee. No requests were received for the consultation hour.

The committee used part of the site visit to discuss the assessment of the programmes and to prepare a preliminary presentation of the findings. The site visit concluded with an oral presentation by the chairman of the general assessment and several specific findings and impressions of the programme.

Report
After the site visit the project manager wrote a draft report based on the committee's findings. The draft was first commented upon by the committee members and then sent to the faculty to check for factual irregularities. All comments made by the faculty were discussed with the chair of the committee and, if necessary, with the other committee members. After revision, the report became official.

Decision rules
In accordance with the NVAO's Assessment Framework for Limited Programme Assessments (as of 22 November 2011), the committee used the following definitions for the assessment of each individual programme, both of the standards and the total programme.

Generic quality
The quality that can reasonably be expected in an international perspective from a higher education bachelor's or master's programme.

Unsatisfactory
The programme does not meet the current generic quality standards and shows serious shortcomings in several areas.

Satisfactory
The programme meets the current generic quality standards and shows an acceptable level across its entire spectrum.

Good
The programme systematically surpasses the current generic quality standards across its entire spectrum.

Excellent
The programme systematically well surpasses the current generic quality standards across its entire spectrum and is regarded as an (inter)national example.

Summary judgement

This report provides the findings and considerations of the Life Sciences Nutrition and Health committee on the bachelor and master programmes in Nutrition and Health at Wageningen University. The committee assessment is based on information in the critical reflection, interviews held during the site visit and a selection of theses.

Standard 1: Intended learning outcoumes
The bachelor programme aims to provide students with basic knowledge and understanding of the different aspects of human nutrition. It employs a broad definition of human nutrition, covering more than just dietary requirements or nutritional status. Biochemistry, cell biology and physiology provide the theoretical foundation to understand the relation between health and nutrition. Important areas in the domain are food composition, metabolic aspects, biomarkers and health status. Research on mechanisms underlying beneficial or adverse effects of nutrition and bio-active components is also part of the programme.

In the master programme, healthy nutrition is considered to be important for health and well-being at a global level. The objective of the programme is to train graduates who are both specialized in one of the fields in the domain and able to reach out to other fields within the domain. Graduates should be able to continue in academic research or be employed by industry, governmental organizations or research institutes with a strong focus on nutrition. The programme offers four specializations in all the important fields in the domain.

The committee is very impressed by the objectives and positioning of the programmes. The programme management has a clear focus on what it wants to achieve and how to accomplish this. Level and orientation are also good. Both programmes comply with the international requirements set by the professional field and discipline. They maintain close contact with the professional field. Future employers are fully aware of what the graduates are capable of.

Standard 2: Teaching-learning environment
Both programmes successfully translated the objectives and intended learning outcomes into impressive curricula with high-quality courses. The programme management consciously chose to provide many electives in the bachelor programme. This is accepted by the committee, but it advises the programmes to regularly take a step back and decide if this is still the optimal construction. As a result of the many free choice credits, the coherency of the full bachelor programme is difficult to assess. The individual bachelor programmes of students are coherent though, due to the efforts of study advisers. For the master programme, the individual specializations are coherent despite the many free choice credits.

For both programmes, student intake has increased strongly over the years, with the master programme growing from 14 students in 2002 to 150 students in 2010. It is impressive how the programme dealt with this growth without loss of quality. Future growth might, however, not be dealt with as easily.

The teaching methods are well balanced, both within and between courses. Despite the size of the programme, the teaching methods remain small-scale. The programme management is continuously and actively working on improving the programme. The Programme Committee could play a more proactive role in improving the programmes.

The committee was very impressed by the staff; their quantity, research quality and educational quality are very good to excellent. Especially impressive is the fact that despite the enormous growth of the programme, the quantity and quality of staff remained at this high level. Students greatly appreciate the close contact with staff members.

Facilities and student support are very good and remained so over the years, despite the increase in student numbers.

Standard 3: Assessment and achieved learning outcomes
The committee is very positive with regard to the initiatives Wageningen University is currently implementing in the bachelor and master programmes. The Examining Boards are in the process of strengthening their role in ensuring the quality of assessment and seem committed to formalizing the assessment system.

The committee was impressed with the mixture of assessment methods in both programmes. It is clear that the assessments are carefully designed to assess specific types of intended learning outcomes. All courses have a written exam. In addition, most courses have additional assessments, e.g. to assess writing skills or laboratory skills.

The committee read and assessed a selection of 15 theses for each programme and agreed with the grades given to them, at both the bachelor and master level. Overall, the theses are considered to be of high quality. Similar to the advice given to other bachelor programmes at Wageningen University, the committee recommends that the bachelor programme rethink the objectives and aims of the bachelor thesis. What does the programme management want to achieve with the bachelor thesis project?

The success rates are very good, for both programmes they are among the best of Wageningen University. Job opportunities for bachelor graduates are limited, and for master graduates it is becoming more difficult to find a good position due to the economic situation in the Netherlands. Nevertheless, most graduates are able to find jobs in their discipline, which is impressive. The committee is confident that the programmes perform very well on this standard.

Conclusion
The committee assesses the standards from the Assessment Framework for Limited Programme Assessments in the following way:

Bachelor programme in Voeding en Gezondheid:

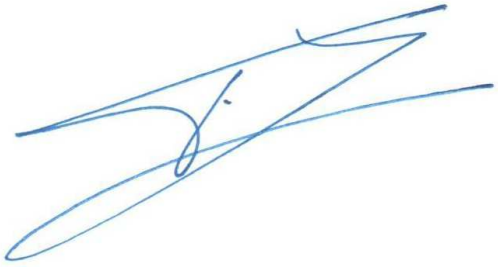
Standard 1: Intended learning outcomes	good
Standard 2: Teaching-learning environment	good
Standard 3: Assessment and achieved learning outcomes	good
General conclusion	good

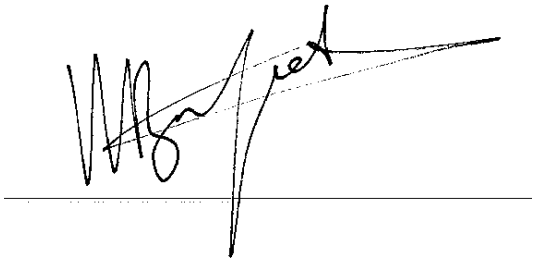
Master programme in Nutrition and Health:

Standard 1: Intended learning outcomes	good
Standard 2: Teaching-learning environment	good
Standard 3: Assessment and achieved learning outcomes	good
General conclusion	good

The chair and the secretary of the committee hereby declare that all members of the committee have studied this report and that they agree with the judgements laid down in it. They confirm that the assessment has been conducted in accordance with the criteria relating to independence.

Date: 20 November 2012





Prof. F. Zwarts

Dr. M.J.V. Van Bogaert

Description of the standards from the Assessment Framework for Limited Programme Assessments

Standard 1: Intended learning outcomes

The intended learning outcomes of the programme have been concretised with regard to content, level and orientation; they meet international requirements.

Explanation:
As for level and orientation (bachelor's or master's; professional or academic), the intended learning outcomes fit into the Dutch qualifications framework. In addition, they tie in with the international perspective of the requirements currently set by the professional field and the discipline with regard to the contents of the programme.

1.1 Findings

In this standard the committee assesses the programme's objectives and profile, intended learning outcomes, and level and orientation. Furthermore, the requirements of the professional field and discipline are described.

Programme objectives and profile

Bachelor programme
According to the critical reflection, the bachelor programme aims to provide students with basic knowledge and understanding of the different aspects of human nutrition. Human nutrition is studied from all possible perspectives, and students acquire a life sciences perspective that includes aspects of the social sciences. The programme aims at training graduates who can deal with multidisciplinary nutritional issues.

The programme uses a broad definition of human nutrition, covering more than just dietary requirements or nutritional status. Biochemistry, cell biology and physiology provide the theoretical foundation to understand the relation between health and nutrition. Important areas in the domain include food composition, metabolic aspects, biomarkers and health status. Research on mechanisms underlying beneficial or adverse effects of nutrition and bio-active components is also part of the programme.

The critical reflection stated that the programme is unique in the Netherlands, since comparable programmes do not study nutrition in the same depth as in Wageningen. From an international perspective, the programme is one of a limited number that offer students the option to study nutrition and health covering all disciplines, at the population, individual and molecular level.

The committee notes that the bachelor programme profile is indeed very broad, but this seems to work very well in the Wageningen context, which is research oriented. The research orientation is not only reflected in the master programme, as can be expected, but also in the bachelor programmes. This research orientation is heavily supported by infrastructure, the 'one Faculty' approach and the supporting strategies which are implemented at student level, e.g. buddy system and study advisers. Overall, the committee is impressed by its objectives and profile. With these systems students are scientifically directed towards their curriculum, which can only be successful in the environment Wageningen University offers, with tightened natural sciences focus. Furthermore, all Wageningen programmes are unique in their student-staff ratio, which remained the same in the Nutrition and Health programmes despite permanent increasing student numbers. The university had the potential to balance

this by implementing new staff position, which is unique in Nutrition curricula all over Europe.

Master programme
In the master programme, healthy nutrition is considered to be important for health and well-being at a global level. The knowledge and understanding acquired in the bachelor programme – and other comparable programmes – is deepened.

The objective of the programme is to train graduates who are specialized in one of the fields in the domain and are able to reach out to other fields within the domain. Graduates should be able to continue in academic research or be employed by industry, governmental organizations or research institutes with a strong focus on nutrition.

The programme offers specializations in all the important fields in the domain, making the programme unique in the Netherlands and one of a limited number worldwide that offers these specializations, according to the critical reflection. Students can choose one of the following four specializations:

1. **Epidemiology and Public Health**, which addresses nutrients, food, physical activity and other lifestyle factors as related to nutritional health and risk of disease. Students focus either on Nutritional Epidemiological Research or Public Health Nutrition.
2. **Nutritional Physiology and Health Status**, which focuses on the influence of nutrients from our diet on the health status of individuals. This can be done in different stages in life and in different geographical regions.
3. **Molecular Nutrition and Toxicology**, which studies the biological mechanisms underlying the relation between nutrition and health such as metabolic pathways and homeostatic control and how this is disturbed through nutrition and dietary components.
4. **Sensory Science**, which deals with the way humans perceive the world and act on sensory input. It addresses how sensory systems function, from stimulation and perception to cognition and behaviour.

Similar to the bachelor programme, the master programme is very broad according to the committee. The four specializations are considered to be well chosen in the Wageningen research context. The committee noted that the four specializations are rather independent and show few links to each other, but this is understandable since the programme comprises a broad field.

A minor concern of the committee was whether it is sufficiently clear to outsiders what a master degree in Nutrition and Health comprises? In the interviews it became clear that the specialization is also mentioned on the diploma. It was also stated that employers are well aware of the differences between the specializations and know which skills and knowledge graduates of each specialization have. The committee was reassured that the breadth of the programme and the very different specializations do not lead to misinterpretations of the graduates' skills and knowledge by future employers.

Intended learning outcomes

Bachelor programme
Nutrition is a basic science based on biochemistry and physiology on the one hand, and the social and behavioural sciences on the other hand. This is described in detail in the subject-

specific reference framework in the critical reflection (see also Appendix 2). Therefore, the intended learning outcomes of the bachelor programme include understanding of (bio)chemistry and human and cellular physiology, basic food and nutrition concepts, and the social and behavioural context of nutrition.

The objective of the programme was translated by the programme committee into twelve intended learning outcomes, provided in table 1. It is considered important to provide students with a strong foundation in the disciplines and skills that are essential to study nutrition and health and to prepare them for research in this field.

As the domain changes, the intended learning outcomes are also expected to change. New topics will be added, other topics will receive less emphasis, and the required skills will change over time. The intended learning outcomes in table 1 are thus a reflection of the current ideas of the programme management regarding the bachelor programme in Nutrition and Health. The committee fully agrees with these intended learning outcomes and is positive that the intended learning outcomes are not static but will accommodate changes in the discipline when required.

Master programme
The objective of the master programme was translated into intended learning outcomes to provide students with all the competences and knowledge required to successfully proceed in further study or a career in the domain. The intended learning outcomes of the master programme are provided in table 2.

The learning outcomes cover the whole programme and are therefore quite generic as they are valid for all four specializations. This is understandable, but the committee is of the opinion that the specializations are of such diversity that the intended learning outcomes do not do justice to the objective and aims of the programme. It therefore advises having at least one of the intended learning outcomes make a distinction between the specializations. It learned that the Education Institute of Wageningen University imposes strict conditions on intended learning outcomes, e.g. they should be at the programme level. Nevertheless, the committee thinks that the programme would be even stronger if there was some differentiation between the intended learning outcomes of the four specializations.

	After successful completion of the programme graduates are expected to be able to:		Dublin descriptors
Domain-specific knowledge and understanding and applying that knowledge and understanding	1	Demonstrate understanding of (bio)chemistry and human and cellular physiology in order to understand the effect of nutrition on human health and disease from a biomedical perspective, including the underlying mechanisms	• Knowledge and understanding
	2	Demonstrate understanding of basic food and nutrition concepts*	• Knowledge and understanding • Applying knowledge and understanding
	3	Demonstrate understanding of the individual and environmental determinants of nutrition behaviour	• Knowledge and understanding • Applying knowledge and understanding
Scientific learning outcomes (research)	4	Judge scientific research publications in the domain of nutrition and health at the cell, individual and population level by critically reflecting on scientific research design**, methodology and results	• Making judgements
	5	Choose and carry out appropriate (statistical) data analysis and interpret the results (under supervision)	• Applying knowledge and understanding
	6	Write and conduct a (literature) research plan in the field	• Applying knowledge and understanding • Making judgements
Domain-specific skills	7	Apply domain-specific laboratory techniques and interpret the results (under supervision)	• Applying knowledge and understanding • Making judgements
	8	Apply nutritional assessment methods commonly used in nutrition research at individual human level and interpret the results (under supervision)	• Applying knowledge and understanding • Making judgements
General academic learning outcomes	9	Make judgements (under supervision) based on social and ethical issues that arise in work on or study of human nutrition	• Making judgements
	10	Co-operate in a team of students to achieve specific targets within courses, e.g. writing reports or solving problems	• Communication
	11	Communicate (verbally and in writing) the outcomes of learning, ideas, problems and solutions to both specialist and non-specialist audiences	• Communication
	12	Design and plan their own learning path based on reflection on personal knowledge, skills and performance	• Learning skills
* For example: macro- and micronutrient structure and function; energy and nutrient recommendations throughout the life cycle; nutritional assessment methods; digestion, absorption and transport of nutrients in the body; energy metabolism; energy balance; body composition; food composition; sensory science; science of epidemiology; dietary patterns; dietary behaviour; nutrition and chronic diseases; nutrient deficiencies; food-borne diseases/toxic compounds in foods; nutrition and medicines; dietary supplements; and functional foods. ** Designs and methods include e.g. controlled interventions (rcts), challenge tests, community intervention trials, ~omics methods, animal/cellular model studies, observational studies, etc.			

Table 1: Intended learning outcomes of the bachelor programme in Nutrition and Health and their relations with the Dublin descriptors.

	After successful completion of the programme graduates are expected to be able to:		Dublin descriptors
Domain-specific knowledge and understanding and applying that knowledge and understanding	1	Apply advanced and state-of-the-art knowledge on the role of nutrition on human health and disease as well as the relevant research designs within the chosen specialization	Knowledge and understanding Applying knowledge and understanding
	2	Understand concepts on the role of nutrition on human health and disease at the population, individual and cellular level	Knowledge and understanding
	3	Analyze advanced and complex concepts, approaches and methods and reflect upon scientific literature with special reference to the chosen specialization, as well as (closely) related disciplines	Applying knowledge and understanding Making judgements
Scientific learning outcomes (research)	4	Design a research plan within the topics of the chosen specialization and critically reflect (under supervision) on the phases of the scientific research process	Knowledge and understanding Applying knowledge and understanding Making judgements
	5	Carry out a research plan within the chosen specialization by using appropriate methods, research designs and techniques to collect data and critically interpret the results	Applying knowledge and understanding Making judgements
Domain-specific skills	6	Apply specialization-specific advanced laboratory and analytical techniques and statistical methods for the collection and analysis of data, and evaluate their suitability for addressing specific research questions and hypotheses	Applying knowledge and understanding Making judgements
General academic learning outcomes	7	Respond to social and ethical issues that arise in work on or study of human nutrition	Making judgements Communication
	8	Co-operate as a specialist in a multidisciplinary team to solve more complex problems	Applying knowledge and understanding Communication
	9	Communicate project outcomes, rationale, and methods convincingly to specialists and non-specialists using appropriate techniques	Communication
	10	Design and plan their own learning process based on evaluation of personal knowledge, skills, attitudes and performance	Learning skills

Table 2: Intended learning outcomes of the master programme in Nutrition and Health and relation with the Dublin descriptors.

Level and orientation

Bachelor programme
The critical reflection describes how students acquire academic knowledge, understanding, skills and attitudes and practice under supervision. The relation between the intended learning outcomes and the Dublin descriptors is provided. Students are taught how to use, evaluate and interpret the most common research techniques and how to perform their own research.

According to the critical reflection, the programme is an academic programme in which academic skills are practised. Under supervision, students do a literature study and learn to conduct their own research. The committee has no doubts that the level and orientation fit an academic bachelor programme.

Master programme
The learning outcomes are related to the Dublin descriptors for master pogrammes (see table 2). The master students acquire knowledge, understanding, skills and attitudes at an advanced

level. They learn how to use and evaluate state-of-the-art research techniques within their specialization and are able to design and conduct experiments, and to collect and analyze data, without direct supervision.

According to the critical reflection, the programme has a clearly defined academic orientation. About half of the students continue in a research setting in their first job. Annually, approximately 30% of the graduates are accepted into PhD programmes at different universities in the Netherlands and abroad. The committee furthermore noticed a clear difference between the bachelor and master programme.

Requirements of the professional field and discipline
The subject-specific reference framework (Appendix 2) describes the domain. According to the critical reflection, career options for nutrition scientists all require strong academic skills and a critical attitude, which are therefore strongly reflected in the intended learning outcomes.

Bachelor programme
A recent discussion between the programme management and the External Advisory Committee re-confirmed the finding that currently within the domain, there are no employment opportunities for graduates of the bachelor programme. The programme therefore focuses on preparing students for a start in an academic master programme.

From the critical reflection and from the interviews, the committee concluded that bachelor students are indeed not expected to enter the labour market after they graduate. At present, employers are not interested in hiring bachelor graduates; they choose either professional dieticians (hbo) or master graduates. Also, students are not interested in finding a job after graduation from the bachelor programme. The committee realises that this situation has developed historically, but emphasizes that employment prospects should already receive attention in the bachelor phase. Even if all the students decide to continue with a master programme, thinking about their future employment should help determine the choices they make in the bachelor programme. This is especially valid since the bachelor programme provides a lot of freedom to the students to specialize or broaden their scope.

Master programme
Graduates from all specializations are eligible for registration as a 'Registered Nutritionist A'. The External Advisory Committee has recently expressed its support for the programme and has confirmed that the programme prepares students for a career in academic research, (non)governmental organisations, research institutes and industry. Minor points of this preparation could be improved further, but specific skills could also be acquired during employee training courses.

The committee noted that many of the master students who were interviewed did not yet have a clear vision of their future career. It is of the opinion that, especially with the diverse specializations and many options, employability must be addressed in the programmes. Students must be aware of the wishes and demands of future employers, which should affect their choice of courses.

1.2 Considerations
The committee thinks that these two programmes are unique in the Netherlands and one of very few worldwide. Both programmes approach the field of nutrition and health from a very broad perspective, which is appreciated by the committee. It allows students to start generally

and subsequently specialize in a sub-field of their own interest. Wageningen University has the knowledge and qualities to provide such broad programmes.

The committee is very impressed by the objective and positioning of the programmes and their intended learning outcomes. The programme management has a clear focus on what it wants to achieve and how to accomplish this. The level and orientation are also good. The committee emphasizes that its remarks concerning the programmes all are minor issues and are clearly intended to make the programmes even better.

The intended learning outcomes of both programmes are good, but general. For the bachelor programme this is not a problem, since the programme primarily prepares students for further education. For the master programme the specializations are well chosen. However, the committee thinks that on paper more justice could be done to the diversity of the programme by identifying the specifics for each specialization in the intended learning outcomes. It approves the concept of the programme management that changes in the field are taken into consideration in order to keep the intended learning outcomes updated.

The programmes maintain close contacts with the professional field. Future employers are fully aware of what the graduates know and are capable of. Bachelor graduates have very limited job options, as employers prefer dieticians at the bachelor level. This is currently not an issue since almost all bachelor graduates continue on to a master programme. The committee points out that this situation might change in the future. If studying becomes more expensive, students might prefer to look for a job after graduating from a bachelor programme. Given that students also have a lot of free choice, employability should be dealt with in both the bachelor and master programme. Nevertheless, the committee fully understands that in the Netherlands there are hardly any job opportunities for bachelor graduates and thus agrees with the present focus of the bachelor programme on continuing with a master programme.

1.3 Conclusion

Bachelor programme in Voeding en Gezondheid: the committee assesses Standard 1 as **good.**
Master programme in Nutrition and Health: the committee assesses Standard 1 as **good**.

Standard 2: Teaching-learning environment

The curriculum, staff and programme-specific services and facilities enable the incoming students to achieve the intended learning outcomes.

Explanation:
The contents and structure of the curriculum enable the students admitted to achieve the intended learning outcomes. The quality of the staff and of the programme-specific services and facilities is essential to that end. Curriculum, staff, services and facilities constitute a coherent teaching-learning environment for the students.

2.1 Findings

Curriculum and coherency of the programmes

The academic year of Wageningen University consists of two semesters, each with 3 periods. In periods 1, 2 and 5 (six weeks each) two courses are taught, one in the morning and one in the afternoon. Periods 3 and 4 are short periods with 4 weeks of teaching and only one course each. Period 6 lasts nine weeks. Each year students can take one exam and two re-sits for each course. Currently, this system is being reviewed, concerning the number of re-sits and the timing of the exams.

Although differences exist between programmes, all Wageningen programmes provide a lot of freedom for the individual student, making the programmes student-centred. The chair groups and their research strongly influence the courses offered, making the programmes also course-oriented. This makes the position of the study advisor crucial and demands certain qualities of him/her. The committee thinks that the study advisor should be a member of the academic staff to be able to support students in their choice for certain courses.

Bachelor programme

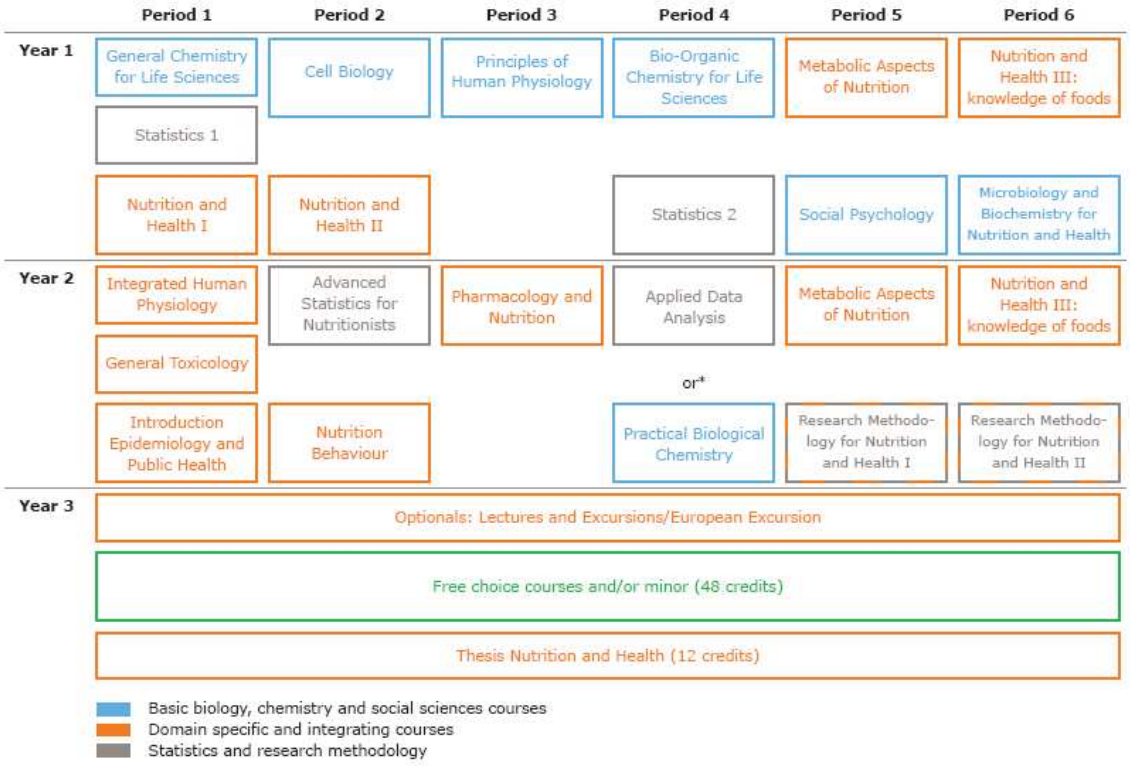
The intended learning outcomes have been translated into a curriculum (see figure 1), which consists of a common part, an optional part ('tracks') and the free choice (minor). A description of each course can be found in the Study Handbook, which was provided to the committee members and is available on the website of Wageningen University. The common part is worth 132 credits, and there are 48 free choice credits. The common part consists of basic courses on biology, chemistry and social sciences in order to acquire the level of knowledge and skills necessary for following the more advanced courses. In the Nutrition and Health courses, students obtain an overview of the field of nutrition and develop an understanding of basic food and nutrition concepts. Furthermore, two statistics courses are included among the common courses.

In the second year, students broaden and deepen their knowledge and skills. According to the critical reflection, by providing a wide range of courses in the first two years, students are able to select their minor and free choice courses for the third year. In the third year students write their thesis (12 credits) and follow electives (48 credits).

In the critical reflection the relationship between intended learning outcomes and the curriculum is provided in a matrix. It is difficult to present the elective part of the programme in the context of the matrix, but even without it, all intended learning outcomes are covered.

The committee was impressed by the curriculum of the bachelor programme. It is well thought through and makes use of the strong research position of Wageningen University in the field of nutrition and health. From course guides that were available during the site visit and on the Wageningen University website, it became clear that the courses provided are of

high quality. The quality of the study material, the literature used and the staff members is excellent. The committee noted that the bachelor programme provides more free choice than other Wageningen University bachelor programmes, 48 instead of 30 credits. Students can choose multiple subjects, or tackle one subject in depth. Should a bachelor graduate look for a job, it would be difficult for an employer to know and understand the curriculum that was followed without going into the individual courses. Although the quality of the courses is – without a doubt – very high, the committee concludes that the freedom results in a reduced coherency of the programme as a whole. For example, students depend on their free choice to follow advanced courses related to food. Due to close monitoring by the study adviser, the committee concludes that the programmes of individual students are coherent. During the interviews it became clear that the programme management considers the free choice to be an asset, and the committee agrees to a certain extent. The committee therefore does not advise reducing the free choice, but stimulates the programme management to continuously monitor the coherency of the entire programme.



* Students have to choose one of these two courses.

Figure 1: Curriculum of the bachelor programme in Nutrition and Health

Master programme

The curriculum and courses have been developed to achieve the intended learning outcomes provided under Standard 1 of this report. The critical reflection provides a matrix in which each course is related to the nine intended learning outcomes. A description of each course can be found in the Study Handbook.

The four specializations share a number of courses, although one course can be a specialization-specific course for one student and might be a 'broadening' course for another. The specializations share the main theme of study, nutrition and health, but differ in the research designs, methods and techniques used.

The basic courses are listed in table 3. They may be part of the master programme, or were taken during the bachelor degree. All students entering the programme must have a basic knowledge of the field of human nutrition, and therefore this aspect is not included in the basic skills courses. A compulsory part in every Wageningen master programme is the Academic Master Cluster. This includes the Academic Consultancy Training course and the Modular Skills Training course. Students also choose an internship or a second thesis. Within each of the four specializations a thesis is written, which is considered an essential element of the programme.

Basics for every student			
Statistics	**Research Methodology**	**Academic Skills & Competences**	
Basic Statistics	Methodology Nutrition Research	Modular Skills	
Advanced Statistics for Nutritionists	Introduction Epidemiology and Public Health	Scientific Skills Training	
	or Sensory Science I	Academic Consultancy Training	
Specialization A/B/C			
Specialization specific courses (CS)	Specific course(s) towards thesis-subject (RO1)	T-shaped: broadening within domain (RO2)	Supporting Techniques (RO3, only in spec. C)
Specialization D			
Specialization specific courses (CS)			
Individual (research) work			
Thesis with specialization			
Academic Internship within domain			

Table 3: Schematic structure of the master programme in Nutrition and Health

According to the committee, each specialization of the master programme is well chosen and, similar to the bachelor programme, makes use of the excellent research quality of the Chair Groups involved. Based on the interviews and the material provided during the site visit, the committee was impressed by the high quality of the courses.

The committee concluded that a lot of free choice is also provided in the master programme. Each specialization has few mandatory courses. In the master programme this seems to work very well due to the four specializations. Each specialization follows a coherent design. It was noted, however, that the four specializations hardly have any common courses. This is understandable to the committee, since the programme as a whole covers a broad field. As mentioned under standard 1, employers are well aware of the four specializations and know which graduate to hire for a specific function. The committee advises the programme to maintain these specializations in coming years.

Multidisciplinarity

Wageningen University aims to offer programmes with a multidisciplinary and holistic approach. This is meant to stimulate students to develop a broad view and a wide range of interests. Most of the courses are attended by students from different programmes, creating a setting that favours multidisciplinary education. This could also lead to a possible friction between breadth and depth. The committee assessed whether students receive a multidisciplinary programme with sufficient depth, making them experts in a specific discipline. The committee discussed the ways in which the programmes ensure a balance in breadth and depth in a multidisciplinary approach, and it has established that the progammes manage to do this very adequately. Both programmes are multidisciplinary in the way that students are taught to understand and work with other related disciplines. The committee would prefer to see more interaction with the food Chair Groups in the core parts of the programmes.

Student intake, study load
Students for the bachelor programmes are admitted on the basis of their pre-university qualifications. Individual admission of students who do not meet the standard requirements is centralized. The general admission requirements of master students are published on the internet, including detailed information on admission procedures. These requirements include a relevant bachelor degree, a grade point average of 70%, fluency in English, good skills in mathematics and statistics, and basic computer skills. Master students are admitted following approval by the Admission Committee. In total, there are four Admission Committees, reflecting the four domains. These Admission Committees consist of the relevant Programme Directors, supported by central staff. The four Admission Committees participate in the joint Admission Policy Committee. In total, approximately 5,600 applications are handled each year.

Bachelor programme
Students with a Dutch pre-university degree are admitted if they have a vwo diploma with a Nature & Engineering or a Nature & Health profile. Students with another profile need to have followed courses in chemistry and biology. For German students, special admittance criteria have been formulated. Students with a first-year certificate from a university of applied sciences are discouraged from entering the programme, since there is evidence that they will not be able to finish the programme successfully. In practice, more than 90% of enrolling students has a vwo diploma with one of the above-mentioned 'Nature' profiles.

The number of students starting the programme has increased enormously, from around 50 in 2004 to 110 in 2009. The programme expects this number to stabilize around 110-120 students, at least until 2012. Approximately 25% of the enrolling students initially wanted to study medicine, but were not selected due to the intake restriction quota. The committee was surprised by the steep increase in student numbers and prior to the site visit had major concerns about how the programme would deal with that. During the site visit it appeared that the programme was dealing very successfully with the high student numbers, partly because the Wageningen University financial model results in more funding when more students enrol. The committee is very impressed by this. According to the critical reflection, facilities, student-staff ratio, student-staff interaction and satisfaction of the students with the programme have not decreased over the years. However, the committee warns the programme that being able to deal with this growth of the programme in the past does not automatically mean it can deal with further future growth.

The number of contact hours is 674, 698 and 802 for the first, second and third year, respectively. Contact hours are defined as those hours where the student is face-to-face with a lecturer, e.g. contact hours for group work are only valid if a tutor is present, not the hours where the group works together without supervision. The contact hours for the third year are estimates as the courses differ for each individual student. Students reported a self-study load of 25 hours per week in addition to the contact hours. The committee considers this to be satisfactory.

Master programme
Graduates of the Nutrition and Health bachelor programme have unconditional admission to the master programme in Nutrition and Health. For all other students, admission is individual, based on their degree, their results and their motivation. Each application is assessed by the Programme Director, and final decisions are made by the Technology and Nutrition Admissions Committee. Admission with a linkage programme is possible for students who need specific knowledge and skills not taught in their degree course, e.g. in the

field of the basics of human nutrition. The linkage programme brings their knowledge up to standard for a maximum of 30 credits.

Similar to the bachelor programme, the number of enrolling students has increased strongly, from 14 students in 2002 to 150 students in 2012. In 2010 over 350 international candidates applied for admission, and 160 were admitted. Of those, only 35% actually enrolled, in part due to limited number of governmental scholarships available. The committee was impressed by the way the master programme has dealt with the increase. At the same time, even more than for the bachelor programme, the committee warns about the risks of a further increase. It will become more and more difficult to find high-quality supervisors for thesis projects and internships. Non-permanent staff was hired to deal with the increasing student numbers. There is a chance that these staff members will leave Wageningen University within a few years, which could harm the continuous improvement and development of the entire staff. The programme management and Chair Groups involved should be prepared for this eventuality. Furthermore, many thesis projects are part of a PhD project, and many PhD students are currently involved in the daily supervision of master students. This shows that the programme partly depends on success in research and being awarded grants. At the moment there is no problem, but a decrease in research funding will lead to fewer PhD students and more difficulties in providing research projects for master students.

The number of contact hours is 613 and 60 for the first and second year, respectively. The second year of the programme consists of a thesis project and an internship, with relatively few formal contact hours. There are no quantitative data available on the study load as perceived by the students, although informally the programme states that students consider it to be equivalent to working a full-time job, sometimes with long hours. This was confirmed by the students the committee talked to during the site visit; the programme requires a lot of input, but is feasible.

Teaching methods

Wageningen University strives to train its students to become academics with domain knowledge, a multidisciplinary attitude, interested in problem-solving, and an international orientation with a multicultural attitude. The programmes therefore work with small, diverse student groups to stimulate the interaction between students and lecturers. A variety of didactic and learning methods are offered, including lectures, tutorials, group work, practical training, excursion and individual papers. According to the critical reflection, the teaching methods prepare graduates to work in multidisciplinary teams as well as individually, and often in a global context.

The teaching methods used include lectures (BSc: 31%, MSc: 35%), tutorials (BSc: 16%, MSc: 13%), group work (BSc: 4%, MSc: 7%), practical training (BSc: 47%, MSc: 44%) and excursions (BSc: 4%, MSc: 1%). Furthermore, time is given to students for independent study. Each course provides a blend of teaching methods which is well balanced according to the committee.

The programmes have developed in-house digital learning material as part of the curricula. One of the strengths is that animations and visuals assist students in their learning. In addition, it is possible to provide education material tailored to the needs of individual students as well as to large groups of students. Although technically the materials can be used at home, a PC room is regularly scheduled, and staff is available for assistance. Many students make use of this computer rooms, as they prefer to discuss items with fellow students or ask the lecturer for further clarification. The hours for digital learning are included in the other

teaching methods. The committee was rather impressed by the way the digital learning material is incorporated in the programmes.

Improvements to the curriculum
The individual programme committees are responsible for improving the curricula, although occasionally improvements are introduced for all programmes jointly under the guidance of the Educational Institute. One example is the introduction of scheduling of electives in one semester, including minors.

Ideas for improvement usually come from online course evaluations. Detailed results are reported to the lecturers and Programme Committees. Summaries of the results are published on the intranet. In addition to the course evaluations, there are bachelor first-year evaluations, bachelor and master graduate evaluations, career surveys among alumni, and the Education Monitor.

The Programme Committees regularly discuss the outcomes of the evaluations and take action, when considered necessary. In addition to the online evaluations, many programmes hold panel meetings with students to obtain oral feedback on the courses and the programmes. Since many of the programmes are small and the attitude between students and lecturers is informal, many issues are often dealt with informally rather than in a formal procedure.

Not only were university-wide improvements made to the programme, the Programme Committee also introduced other improvements simultaneously. Often these changes were the result of feedback from students. Some examples of improvements are provided in the critical reflection, for example the social sciences fundamental course in the bachelor programme. In the master programme a new specialization, Sensory Science, was introduced. Furthermore, the master programme is now being recognized as a formal training for Epidemiologist A.

The committee noted that in both programmes the programme management is continuously working on improvement. From the interview the committee did notice that the Programme Committee is rather reactive in its functioning. The members of the Programme Committee are enthusiastic, and it is important to deal with the feedback received from students. However, the extent to which the Programme Committee has an overview of the programmes remains unclear to the committee, and if sufficient proactive input is provided.

Staff
Wageningen University staff members generally teach in several programmes, making it difficult to provide exact student-staff ratios. The estimated student-staff ratio is 7.6 for the bachelor programme and 7.0 for the master programme, which is about the Wageningen University average. The committee is pleased that the growth of the programmes over the past few years has not led to a significant increase in student-staff ratios and is very impressed with the large number of staff for these programmes.

Staff members are required to be both an expert in their discipline and a skilful lecturer. This combination allows them to make use of new scientific insights in their teaching. Most lecturers hold a PhD degree. Most staff members involved in the programmes are members of the VLAG graduate school (Nutrition, Food, Agrobiotechnology and Health). The research quality of most of the core Chair Groups received an 'excellent' score during the recent review of this graduate school. The committee is of the opinion that the research

qualities of staff members involved in the programmes are indeed very good, some even excellent. The Chair Groups involved provide an excellent basis for the research-oriented programmes. The committee was impressed by the high quality of the visibly motivated staff members they interviewed during the site visit.

Wageningen University introduced the University Teaching Qualification (Basis Kwalificatie Onderwijs, BKO) for new permanent staff and staff on tenured track positions. Quality of teaching is evaluated after each course, which also evaluates the course content, position of the course in the curriculum, presentation and examination. Results of these evaluations form input for the annual performance and development interviews of staff members. Tailor-made training courses are provided by the Educational Staff Development unit for those interested, or as a result of the course evaluation. The committee finds that the programmes have lecturers with excellent teaching qualities. It was especially impressed by the activities of the programmes regarding the creation of e-learning materials.

Programme specific services and student support
Wageningen University has chosen to centralize all teaching facilities like lecture rooms, labs, rooms for group work and the university library on the new campus. The main education building is the Forum. The Orion education building is under construction and will add to the existing facilities in 2013. Education in the Social Sciences is concentrated in the Leeuwenborch building. Most Chair Groups are – or will be – located on the campus.

The committee initially had some worries regarding the facilities, since the number of enrolling students (in both the bachelor and the master programme) has doubled over the past eight years. According to the critical reflection, investments have been made to update the equipment used during practicals. Also, rooms were adapted to allow practical teaching for the increasing number of enrolling students. The committee was impressed by the flexibility of the programmes to accommodate and facilitate the large number of students over the past few years.

The study advisers focuss on coaching the students and stimulating study success. Study advisers support students to make well-considered choices within their individual programmes, and track and stimulate study progress. Students meet with their superviser several times a year, starting from the annual introduction day, or even before that day for international students coming to Wageningen. Contact moments are arranged at the request of students and by the study advisers, e.g. to discuss choices in study programme. The study advisers also invite students for a talk if they evidence a study delay.

First-year bachelor students are given a mentor from a previous generation of students, to provide additional guidance during the first month at university. Students stated that they appreciate the support from the three (part-time) study advisers. The committee regards the student support and programme-specific services as well organized and adequate.

The committee was very impressed by the functioning of the study advisers. They clearly play an essential role in designing the individual programmes of the students. Students also stated that they are very satisfied with the situation.

2.2 Considerations
The committee has studied the various aspects of the teaching and learning environment of both programmes.

Both programmes successfully translated the objectives and intended learning outcomes into impressive curricula with high-quality courses. The committee assesses the programmes as very broad, but this seems to work very well in the Wageningen context. It intensively discussed the amount of free choice, especially in the bachelor programme. The many free options could generate the possibility of taking easy and not focussed courses, but this is not the case since the chosen courses must be motivated (including a letter of motivation) and accepted by the study adviser as well as the Examination Board. The programme management consciously chose this construction, which is accepted by the committee. Nevertheless, the committee advises the programmes to regularly take a step back and decide if this is still the optimal construction.

As a result of the many free choice credits, the coherency of the entire bachelor programme is limited, or at least difficult to assess. Although the individual bachelor programmes of students are coherent, due to the efforts of study advisers, the committee is not able to assess the coherency of the curriculum as a whole. This makes the position of the study advisor crucial and demands certain qualities of him/her. The committee believes that the study advisor should be a member of the academic staff to be able to support students in their choice for certain courses. Should a bachelor graduate look for a job, it would be difficult for an employer to know and understand the curriculum that was followed without going into the individual courses. For the master programme, the many free choice credits do not affect the coherence of the specializations.

Student intake has increased strongly over the years, rising for the master programme from 14 students in 2002 to 150 students in 2010. It is impressive how the programme has dealt with this growth, but the committee warns that further growth might not as easily dealt with.

The teaching methods are well balanced, both in and between courses. Despite the size of the programme, the teaching methods remain small scale. The development of e-learning materials is at an advanced stage compared to other Wageningen programmes, and further development is supported by the committee.

The programme management is continuously and actively working on improving the programme. The committee noticed that the functioning of the Programme Committee seemed rather reactive and primarily applied at the course level. The Programme Committee should play a more proactive role in improving the programmes.

The committee was very impressed by the staff; their quantity, research quality and educational quality are all very good to excellent. Especially impressive is the fact that despite the enormous growth of the programmes, the quantity and quality of staff remained at this high level. Students greatly appreciate the close contact with staff members.

Facilities and student support are very good and have remained so over the years, despite the increase in student numbers.

2.3 Conclusion

Bachelor programme in Voeding en Gezondheid: the committee assesses Standard 2 as **good**.
Master programme in Nutrition and Health: the committee assesses Standard 2 as **good**.

Standard 3: Assessment and achieved learning outcomes

The programme has an adequate assessment system in place and demonstrates that the intended learning outcomes are achieved.

Explanation:
The level achieved is demonstrated by interim and final tests, final projects and the performance of graduates in actual practice or in post-graduate programmes. The tests and assessments are valid, reliable and transparent to the students.

3.1 Findings

Assessment system

For each course the lecturers have to formulate five to eight intended learning outcomes, which are published in the Study Handbook and in course guides. The course guide is also obligatory for each course and explains what a course is about, how it is organized, and how students are expected to participate. Part of the course guide covers the assessment strategy for which requirements have been recently introduced. The assessment strategy makes clear how and when a learning outcome is assessed, who is involved in assessing students, and how the final mark will be determined. It also shows the transparency and validity of the assessment. To enhance the reliability of the assessment, examiners need to explain which elements in the student's answers lead to a certain mark. For multiple choice questions this is embodied in the answer key, and for open answer questions this is shown by model answers, assessment criteria or rubrics (for an example, see Appendix 9). The previous practice was similar to the new theory, but less formalized. Currently, all Wageningen programmes are in the transition phase from the previous practice to the new situation.

In general, the intended learning outcomes are assessed in the course where they are achieved. As all courses contribute to a number of learning outcomes, most courses include more than one assessment moment. Almost all courses in the bachelor programme conclude with a multiple choice or open-ended exam (written or computer-based). In addition, many courses assess practical skills through observation or through grading a written report/assignment. Practical skills can include laboratory skills, analytical skills or problem-solving skills. After all exams, students have access to the detailed grading of their exam, which provides feedback. Written feedback for reports is usually more exhaustive and is not provided extensively in all courses. The committee emphasizes the importance of both oral and written feedback to students, also for reports and presentations.

In the master programme, the grading of the internship is based on the internship report, which reflects the agreed intended learning outcomes. In addition, local supervisors are invited to provide assessments of student performance. In the Academic Consultancy Training course, students get feedback on their initial project proposal in a special session and written feedback on the improved proposal. Students have to formulate their individual intended learning outcomes and write a reflection report.

The committee thinks that both programmes provide a balanced set of assessments, and it is impressed with the explicit attention paid to the relation between the cognitive level of the intended learning outcomes and the types of assessment.

With the changes in the Higher Education and Research Act, the position of the Examining Boards has changed. The Examining Boards are currently in the process of strengthening the role of assuring the quality assessment, both via interim course exams and the evaluation of

internships and theses. The new role of the Examining Boards has two elements. The first is that each examiner will be made explicitly responsible for ensuring that an assessment of a course is valid, reliable and transparent. This was made a regular part of the University Teaching Qualification. Wageningen University produced documents to help examiners and lecturers achieve this, and meetings between the Examining Boards and examiners were held in the spring of 2011. The second element is that the Examining Boards will visit chair groups on a regular basis to verify the quality of assessment of courses provided by the groups. Additional visits will take place when required, for example when indicated by the results of course evaluations.

The committee learned during the site visit that students can do many re-sits for each course if they don't pass the first time. Each year three exam possibilities are offered for each course, and students can retake the exam as often as needed to pass.

Quality and assessment of the thesis work
The thesis work is always graded by two assessors: the supervisor and the examiner. Both are present during the presentation and final discussion of the thesis. In the study year 2011-2012 the assessment procedure for the thesis was further improved by developing a rubric. A rubric is an assessment tool based on a set of criteria and standards linked to learning outcomes that is used to assess or communicate about product, process and performance. The rubric provides guidelines for the thesis evaluation. In Appendix 9 an example of a rubric is provided.

In general, the committee was impressed with the quality of the theses and sees the research qualities of the chair groups reflected in them. The committee wants to make a remark regarding the masterthesis assessment form. Of the final grade, 30% reflects practical performance, and 40% is based on scientific performance. Part of the scientific performance overlaps with the practical performance. The committee thinks that the report is the only sustainable proof of the research project after graduation and should make up a significant part of the final mark. The percentage of the final mark that is based on the written report does not become clear from the assessment form. The programme management agrees that the assessment form might be confusing, but claims that the written report forms a significant part of the final mark. The committee concludes that this indeed should be the case.

Bachelor programme
In 2010-2011 the inclusion of a thesis as the final part of the bachelor programme was initiated. For the assessment of a thesis, a standard form is used throughout Wageningen University. Criteria for the assessment of a bachelor thesis are: academic skills (20-50%), proposal and report (20-45%), self-reflection (10%), presentation (5%) and examination (5%). The weight of each criterion is determined after approval of the research/project proposal.

The thesis carries a total of 12 credits and is considered the final stage of the bachelor programme. Students have to analyse, investigate (literature) and report on a question, making use of competencies acquired during their programme. They write a research plan which has to be approved by their supervisor. After approval, students carry out the project. The results of their research are written in the form of a scientific article or scientific report. Finally, the students present the results of their work to their supervisor. Students are evaluated according to the quality of their research and of their report.

Prior to the site visit, the committee members received a total of 15 recent theses, selected from a list in the critical reflection of all theses from students who graduated during the last

two years. The selection was done by the secretary on behalf of the chairman of the committee. When selecting the theses, the grading and the graduation date were considered. Student numbers of the selected theses are provided in appendix 7. For all 15 theses, the committee read the thesis report. The use of the assessment form filled out by the supervisor has only recently been introduced, and therefore not all theses had one.

The committee agreed with the marks given to the bachelor theses, and is positive about the quality of most of them. None of the theses read were considered to be unsatisfactory. Despite this, the committee noticed major differences in layout, style, length and subject of the thesis reports. This led to the conclusion that the guidelines and instructions for students and supervisors might be overly general. The committee would like to help the programme in obtaining as much profit from the bachelor thesis as possible and thus advises it to rethink the objective and aims of the bachelor thesis, to make it more of a structured project. It should be clear to the programme management, supervisor and student what the objectives and aims of the bachelor thesis project are.

Master programme
For master programmes, the thesis, internship and Academic Master Cluster (AMC) form important parts of the learning outcomes. There is an extensive assessment format for the AMC and atelier to evaluate each student's individual contribution to the final product and collaborative process. It aims at securing grading reliability across the large number of teams participating each year. For the internship an assessment form is used which is common to all programmes. An external and an internal supervisor are appointed for the internship: the external supervisor advises on the quality of the student's performance, the internal supervisor grades the internship. For the thesis a university-wide assessment form has been designed, with which research competences, quality of the thesis report, the colloquium and the final oral examination are assessed. Recently, a rubric was developed for each component of the assessment form to describe the relation between the level of performance and the grades. The rubric can be found in appendix 10.

The weighing of the criteria for the assessment of the master's thesis differs slightly from that for the bachelor's thesis: research competencies (30%), thesis report (60%), colloquium (5%) and examination (5%). The thesis is always assessed by at least two assessors: the supervisor and the examiner.

Prior to the site visit, the committee members received a total of 15 recent theses, selected from a list in the critical reflection of all theses from students who graduated during the last two years. This selection was done by the secretary on behalf of the chairman of the committee. When selecting the theses, grading (the same number of high, middle and low scores were selected) and graduation date were considered. Student numbers of the selected theses are provided in Appendix 7. The committee was impressed by the high quality of the master theses. Good research was done, and most reports were coherent in their design, well worked out and written in very decent English. All grades were approved by the committee members.

Success rates and output

Bachelor programme
The critical reflection stated that the programme management is very pleased with the success rates: over one-third of the students who enter the second year complete their programme in the nominal duration, and 70% after 4 years. The committee confirms that these success rates

are very good, especially when taking into consideration that the requirement to finish a bachelor's degree before entering a master programme has not yet been formalized at Wageningen University. The relatively high drop-out rate in re-enrolment for the second year is partly due to the fact that many students leave because they were selected for Medicine at other universities. The committee understands that this is inevitable.

Most graduates enrol in a master programme, since the job market is not interested in academic bachelor graduates. Employers prefer hbo dieticians for positions at the bachelor level. Also, most bachelor graduates are not interested in finding a job and prefer to continue with a master programme. Not all students continue their study in the Nutrition and Health master programme. In 2010, 27% entered another master programme, either at Wageningen University or at another university.

Master programme
The success rates for the master programme are also very high: 97% of the students who started in 2007 completed their programme within three years. Drop-out rates are low. The committee is very positive about these figures and stimulates the programme to keep them as they are.

Many of the graduates (30-40%) start a PhD position after graduation. Most other graduates also find jobs within their field of study. Although there is a lot of competition for jobs and not many jobs are available, most graduates keep on finding good positions. The committee concludes that master graduates are well prepared to find a position both as a PhD student and in other organizations.

3.2 Considerations
The committee is very positive with regard to the initiatives Wageningen University is currently implementing in the bachelor and master programmes. The Examining Boards are in the process of strengthening their role in ensuring the quality of assessment and seem committed to formalizing the assessment system. The committee agrees that having only four Examining Boards is stimulating the consistency and equality of the procedures. However, these four Examining Boards are responsible for a total of 49 programmes.

The committee was impressed with the mixture of assessment methods in both programmes. It is clear that the assessments are carefully designed to evaluate specific types of intended learning outcomes. All courses have a written exam, and most courses have additional assessments, e.g. to gauge writing skills or laboratory practices.

The committee read and assessed a selection of 15 theses for each programme. It agreed with the grades given to the theses, at both the bachelor and master level. Overall, the theses are considered to be of high quality. Similar to the recommendations made for other bachelor programmes at Wageningen University, the committee advises the bachelor programme to rethink the objectives and aims of the bachelor thesis.

The success rates are very good, for both programmes they belong to the best of Wageningen University. Job opportunities for bachelor graduates are limited, while master graduates are finding it more difficult to obtain good positions due to the economic situation in the Netherlands. Nevertheless, most graduates are able to find jobs in their discipline, which is impressive. The committee is confident that the programmes perform very well on this standard.

3.3 Conclusion

Bachelor programme in Voeding en Gezondheid: the committee assesses Standard 3 as **good**.
Master programme in Nutrition and Health: the committee assesses Standard 3 as **good**.

General conclusion

The committee is impressed overall by both programmes. Excellent research provides a solid basis for high-quality programmes. Staff, students and programme management are dedicated to developing and maintaining good programmes and manage to do so.

During the site visit and in this report, the committee has made several minor remarks and recommendations to further improve the programmes. Despite these remarks, the committee is of opinion that both the bachelor and master programme in Nutrition and Health can be qualified as 'good'.

Conclusion

The committee assesses the *bachelor programme in Voeding en Gezondheid* as **good.**
The committee assesses the *master programme in Nutrition and Health* as **good.**

APPENDICES

Appendix 1: Curricula Vitae of the members of the assessment committee

Professor Frans Zwarts was Rector Magnificus of the University of Groningen between 2002 and 2011. He studied linguistics at the University of Amsterdam (1967-1973) and at the Massachusetts Institute of Technology (1974), and wrote a doctoral dissertation on Categorial Grammar and Algebraic Semantics (cum laude). He was appointed lecturer at the University of Groningen in 1975 and became Professor of Linguistics in 1987. He was the initiator of the European Summer School in Logic, Language and Information (ESSLLI) in 1989. In 1992, Zwarts was a visiting scholar at UCLA (University of California, Los Angeles). Between 1995 and 2002, he was chair of the Netherlands Steering Committee for Research on Developmental Dyslexia, initiated by the NWO as part of a multidisciplinary national research programme. In 1999, he became academic director of the Graduate School of Behavioural and Cognitive Neurosciences of the University of Groningen. In 2003, he and the Rector Magnificus of Uppsala University established a close partnership between Groningen and Uppsala. This was extended in 2006, when the Universities of Ghent, Göttingen, Groningen, and Uppsala decided to form the U4. In 2011 he was appointed professor and manager to realise the University Campus Fryslân. Zwarts was a member on several NQA assessment committees. He has been a Fellow of the Royal Netherlands Academy of Arts and Sciences (KNAW) since 1999.

Mrs. Renate Prenen, MSc, is educational advisor and independent entrepreneur educational advice. She studied Applied Educational Sciences at Twente University. She worked at Randstad employment agency as advisor and programme manager. Later, she worked at the Academic Medical Centre (AMC) of the University of Amsterdam, where she was educational advisor for the Board of the AMC. In September 2009 she started as an independent educational advisor. She has been a committee member on other QANU assessment committees.

Mrs. professor Jutta Dierkes is professor in Clinical Nutrition at the University of Bergen, Norway. She received her PhD in 1995 in Human Nutrition at Bonne University on 'Vitamin requirements for Homocysteine reductions in healthy young women'. She did her habilitation in 2002 at Magdenburg University. Dierkes worked as a post-doc at Unilever Research in the Netherlands before returning to a university setting as assistant professor at the Institute of Clinical Chemistry of the Otto-von-Guericke University Magdeburg, Germany. In 2009 she was professor in Nutrition Physiology at the Martin-Luther-University Halle-Wittenberg in Germany.

Professor Karl-Heinz Wagner is professor in Nutritional Sciences and Food Quality at the University of Vienna. Wagner is furthermore study Dean Nutritional Sciences, leader of the Research Platform 'Active Aging' and since 2010 Adjunct professor at Griffith University in Australia. Wagner did his PhD studies at the Institute of Nutritional Sciences on 'Impact of antioxidants on plant oils and fats and their mechanism of action at different temperatures' and did his Habilitation in 2004. He was associate professor for 'Nutritional Sciences and Food Quality" and post-doc researcher at the Heard Foundation Research Centre at the University of Queensland, Australia.

Mrs. Katharina Diem, BSc started the master programme in Nutritional Sciences at the University of Vienna in March 2010. Before this she finished the bachelor programme in Nutritional Sciences at the same university. She did internships at the 'Psychosomatisches Zentrum' in Eggenburg, 'Sowhat – Institut für Nenschen mit Esstörungen' and at the

University of Vienna, Department of Nutritional Sciences. Diem is currently scientific assistant and study assistant at this department.

Appendix 2: Domain-specific framework of reference

Nutrition is the study of nutrients and other bio-active components in food, how the body uses nutrients, and the relationship between dietary behaviour, health and disease. Nutritionists create and apply scientific knowledge to promote an understanding of the effects of diet on health and wellbeing of humans (British Nutrition Foundation; 2009).When looking at current patterns in disease and death, the importance of diet to health becomes obvious. The World Health Organization indicates that chronic diseases like heart disease, stroke, cancer and Diabetes Mellitus type II are the leading cause of death in the world. They affect countries and persons across all income groups. Nutrition is related to many of the underlying risk factors of these chronic diseases through e.g. an unhealthy diet, insufficient physical activity and overweight and obesity. On the other hand, many people continue to suffer from under- and mall-nutrition. Underweight is the largest cause of death in children under 5 years of age (WHO; 2009).

Addressing both fundamental and more applied questions and societal challenges in the field of nutrition and health requires multidisciplinary knowledge and skills. Nutrition is a basic science based on both (bio)chemistry and physiology on the one hand, and the social and behavioural sciences on the other hand (Bender DA; 2008). Topics that are covered in the study of human nutrition are e.g. the biological fate and function of macro- and micronutrients; idem of other bio-active components; digestion, absorption and transport of nutrients; dietary requirements; body composition, and; nutritional assessment methods. The role of nutrition is studied from a biomedical perspective at different levels. Disciplines like molecular nutrition, physiology and toxicology study the underlying beneficial and adverse effects at the sub-cellular (DNA), cellular and organ/organism levels. Intervention studies and Randomized Controlled Trials (preferably double blinded) are one of the tools to study the role of nutrition at the level of the human body. Sensory science also mainly studies nutrition at the individual level, but looks specifically at the way humans perceive the world and act upon sensory input (mainly taste and smell). Population level studies do also yield understanding of the role of nutrition and also this field has its own methodological tools to investigate health and disease at the population level. With understanding of the role of nutrition at the population level, we can study and design ways to influence nutritional and dietary behaviour, a field also called public health nutrition (adapted from Geissler and Powers; 2005). All these aspects are studied in both western society but also in developing countries, each with their own peculiarities.

Nutrition scientists have a wide range of career options:

- Nutritional Scientist in academia and research institutes. Many of them choose to do a PhD, as a starting point in this career.
- Nutrition Scientist in industry (large food retail chains/large food or beverage manufacturers). Nutrition scientists provide nutrient information, emphasise the benefits of the consumption of particular food groups or help to substantiate and gain approval for health claims.
- Nutrition scientist in the field of (international) public health nutrition. They can work as health promoter (public sector), policy officer (government institution), policy-supporting researcher (research institute) or development worker in low-income countries (non-governmental organization). Or they can work in (directing) evidence based communication about nutrition and lifestyle.
- Lecturer in initial or advanced training for vocational occupations like dietician.

To get an impression of the competences a nutrition scientist is expected to master, the box on the next page shows the criteria for registration as nutrition scientist (level A, MSc-level, there is also a level B, PhD-level) in the Netherlands (formulated by the Dutch Academy of Nutritional Sciences/Nederlandse academie van voedingswetenschappen)[1].

It is important to note that the domain of nutritional sciences is different from the domain of dietetics. In the Netherlands, dieticians are qualified health professionals that assess, diagnose and treat diet and nutrition problems mainly at the individual level. Dieticians translate the science of nutrition into practical advice and options for clients, patients, carers and colleagues (The British Dietetic Association). Nutritionists are not directly involved in treating or counselling.

Sources

- Association for Nutrition, United Kingdom (http://associationfornutrition.org)
- Bender DA (2008): Preface in *Introduction to Nutrition and Metabolism*, 4th edition. CRC Press, Boca Raton, Florida, USA.
- British Nutrition Foundation (2009) (http://www.nutrition.org.uk/)
- Dutch Academy for Nutritional Sciences (Nederlandse Academie van Voedingswetenschappen/NAV) (2010): Registratie-eisen voor wetenschappelijke voedingskundige A en B, versie 2.2 (http://www.voedingsacademie.nl)
- Mosdøl A and Brunner E (2005): Chapter 30. The Science of epidemiology in *Geissler C and Powers H:Human Nutrition, 11th edition.* Elsevier Limited, London, UK.
- The British Dietetic Association – Leaflet: Dietician? Nutritionist? Nutrition therapist? Diet expert? (http://www.bda.uk.com)
- WHO (2009): Global health risks – Mortality and burden of disease attributable to selected major risks. Geneva, Switzerland.

1 Registration is currently only possible for graduates of the regular Master 'Nutrition and Health, all specializations' (Wageningen University), research Master 'Nutrition and Metabolism – fundamental and clinical aspects' (Maastricht University), regular Master 'Physical Activity and Health, specialization Metabolism and Nutrition' (Maastricht University) or the regular Master 'Health Sciences, differentiation Nutrition and Health' (VU Amsterdam University

Box 1 Criteria for registration as nutritional scientist (level A) as formulated by the Dutch Academy of Nutritional Sciences (2010). Translated from Dutch to English. Terms for recognition as nutritional scientist (level A)

The candidate has knowledge and skills in the domain of nutritional sciences among which:

- Theoretical knowledge of food and nutrition in relation to human health (45 ECTS of which at least 15 ECTS at Master's level):

Terms:
The candidate needs to demonstrate that he/she has acquired the following terms at Bachelor's or Master's level:

- Have knowledge of – and insight in – general aspects that play a role in human nutrition, as well as the relationships between these aspects:
  - Food composition and food availability
  - Food consumption
  - Food habits and determinants of food choice
  - Digestion and absorption of nutrients from the diet (physiological and biochemical)
  - Dietary requirements, nutritional status and disturbances in nutritional status
  - Promotion and disturbance of health status through nutrition
  - Main bioregulatory principles and mechanisms among which: stimulus-response system, feedback, rhythms, homeostasis and adaptation.

- Be able to judge scientific literature in the field of nutrition or related disciplines.
- Have knowledge of different accepted definitions of health, the differences and similarities between these definitions, and the consequences of using these definitions in the field of health promotion.
- Have knowledge of nutrition interventions available for health promotion.
- The candidate needs to demonstrate that he/she has acquired the following terms at Master's level (*at least* 15 ECTS):
- Analyse and structure problems in the field of nutrition and health in an interdisciplinary way. Be able to reformulate these problems in questions and contribute to solving them.
- Be able to interpret socially relevant issues from and applications of nutritional sciences in terms of cause and function.

and

Research experience in nutritional sciences

- Have knowledge of and be able to apply methods and techniques in nutritional sciences.

Terms:
The candidate needs to demonstrate that he/she has acquired the following terms at Master's level (*at least* 30 ECTS):

- Have knowledge of research designs and be able to apply biostatistics.
- Be able to independently design, execute, analyse and report research.

Appendix 3: Intended learning outcomes

Bachelor programme in Voeding en Gezondheid

		After successful completion of the programme graduates are expected to be able to:	Dublin Descriptors
Domain specific knowledge and understanding and applying that knowledge and understanding	1	Demonstrate understanding of (bio)chemistry and human and cellular physiology in order to understand the effect of nutrition on human health and disease from a biomedical perspective, including the underlying mechanisms	Knowledge and understanding
	2	Demonstrate understanding of basic food and nutrition concepts*	Knowledge and understanding Applying knowledge and understanding
	3	Demonstrate understanding of the individual and environmental determinants of nutrition behaviour	Knowledge and understanding Applying knowledge and understanding
Scientific learning outcomes (research)	4	Judge scientific research publications in the domain of nutrition and health at cell, individual and population level by critically reflecting on scientific research design**, methodology and results	Making judgements
	5	Choose and carry out appropriate (statistical) data analysis and interpret the results (under supervision)	Applying knowledge and understanding
	6	Write and conduct a (literature) research plan in the field of nutrition and health and report the results in a scientific manner (under supervision)	Applying knowledge and understanding Making judgements
Domain specific skills	7	Apply domain specific laboratory techniques and interpret the results (under supervision)	Applying knowledge and understanding Making judgements
	8	Apply nutritional assessment methods commonly used in nutrition research at individual human level and interpret the results (under supervision)	Applying knowledge and understanding Making judgements
General academic learning outcomes	9	Make judgements (under supervision) based on social and ethical issues that arise in work on or study of human nutrition	Making judgements
	10	Co-operate in a team of students to achieve specific targets within courses, e.g. writing reports or solving problems	Communication
	11	Communicate (verbally and in writing) the outcomes of learning, ideas, problems and solutions to both specialist and non-specialist audiences	Communication
	12	Design and plan their own learning path based on reflection on personal knowledge, skills and performance	Learning skills

* For example: macro- and micronutrient structure and function; energy and nutrient recommendations throughout the life cycle; nutritional assessment methods; digestion, absorption and transport of nutrients in the body; energy metabolism; energy balance; body composition; food composition; sensory science; science of epidemiology; dietary patterns; dietary behaviour; nutrition and chronic diseases; nutrient deficiencies; food borne diseases/toxic compounds in foods; nutrition and medicines; dietary supplements, and; functional foods.

** Designs and methods include a.o. controlled interventions (rcts), challenge tests, community intervention trials, ~omics methods, animal/cellular model-studies, observational studies, etc.

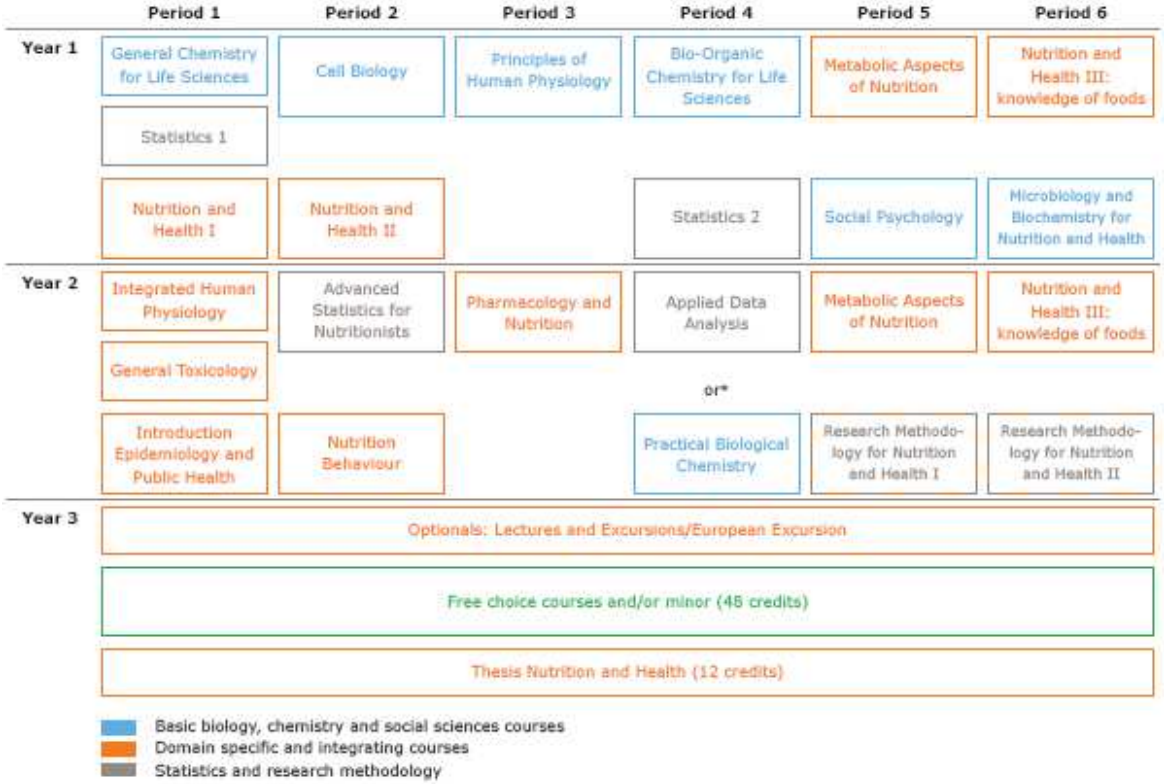
Master programme in Nutrition and Health

		After successful completion of the programme graduates are expected to be able to:	Dublin Descriptors
Domain specific knowledge and understanding and applying that knowledge and understanding	1	Apply advanced and state-of-the-art knowledge on the role of nutrition on human health and disease as well as the relevant research designs within the chosen specialization	• Knowledge and understanding • Applying knowledge and understanding
	2	Understand concepts on the role of nutrition on human health and disease at the population, individual and cellular level	• Knowledge and understanding
	3	Analyze advanced and complex concepts, approaches and methods and reflect upon scientific literature with special reference to the chosen specialization, as well as (closely) related disciplines	• Applying knowledge and understanding • Making judgements
Scientific learning outcomes (research)	4	Design a research plan within the topics of the chosen specialization and critically reflect (under supervision) on the phases of the scientific research process	• Knowledge and understanding • Applying knowledge and understanding • Making judgements
	5	Carry out a research plan within the chosen specialization by using appropriate methods, research designs and techniques to collect data and critically interpret the results	• Applying knowledge and understanding • Making judgements
Domain specific skills	6	Apply specialization-specific advanced laboratory and analytical techniques and statistical methods for the collection and analyses of data, and evaluate their suitability for addressing specific research questions and hypotheses	• Applying knowledge and understanding • Making judgements
General academic learning outcomes	7	Respond to social and ethical issues that arise in work on or study of human nutrition	• Making judgements • Communication
	8	Co-operate as a specialist in a multidisciplinary team to solve more complex problems	• Applying knowledge and understanding • Communication
	9	Communicate project outcomes, rationale, and methods convincingly, to specialists and non-specialists using appropriate techniques	• Communication
	10	Design and plan their own learning process based on evaluation of personal knowledge, skills, attitudes and performance	• Learning skills

Appendix 4: Overview of the curricula

Bachelor programme in Voeding en Gezondheid

Schematic figure of the bachelor curriculum



Overview of the bachelor courses

	Course	Credits	Compulsory/ Restricted Optional (RO)	Year	Period
HNE-10306	Nutrition and Health I: an Introduction to the Field	6	Compulsory	BSc-1	1
MAT-15303	Statistics 1	3	Compulsory	BSc-1	1
PCC-12803	General Chemistry for the Life Sciences	3	Compulsory	BSc-1	1
CBI-10306	Cell Biology	6	Compulsory	BSc-1	2
HNE-10806	Nutrition and Health II: Primer to Nutrition Research	6	Compulsory	BSc-1	2
HAP-10306	Principles of Human Physiology	6	Compulsory	BSc-1	3
MAT-15403	Statistics 2	3	Compulsory	BSc-1	4
ORC-13803	Bio-organic Chemistry for Life Sciences	3	Compulsory	BSc-1	4
HNE-20806	Metabolic Aspects of Nutrition	6	Compulsory	BSc-1	5
MCB-10806	Social Psychology	6	Compulsory	BSc-1	5
HNE-11306	Nutrition and Health III: Knowledge of Foods	6	Compulsory	BSc-1	6
MIB-11306	Microbiology and Biochemistry for Nutrition and Health	6	Compulsory	BSc-1	6
HAP-21303	Integrated Human Physiology	3	Compulsory	BSc-2	1
HNE-24806	Introduction to Epidemiology and Public Health	6	Compulsory	BSc-2	1
TOX-20303	General Toxicology	3	Compulsory	BSc-2	1
HNE-20306	Nutrition Behaviour	6	Compulsory	BSc-2	2
MAT-24306	Advanced Statistics for Nutritionists	6	Compulsory	BSc-2	2
HNE-23306	Pharmacology and Nutrition	6	Compulsory	BSc-2	3
CBI-20306	Cell Biology and Health	6	Compulsory	BSc-2	5
HNE-25806	Research Methodology for Nutrition and Health I	6	Compulsory	BSc-2	5
HNE-22806	Food and Health: Practice and Theory	6	Compulsory	BSc-2	6
HNE-26306	Research Methodology for Nutrition and Health II	6	Compulsory	BSc-2	6
BIC-10306	Practical Biological Chemistry	6	RO1	BSc-2	4
HNE-37306	Applied Data Analysis (in Human Nutrition and Health Research)	6	RO1	BSc-2	4
YNH-80312	BSc Thesis Nutrition and Health	12	Compulsory	BSc-3	any
HNE-23801	Lectures and Excursion	1	RO2	BSc-3	any
HNE-22402	European Excursion	2	RO2	BSc-3	6

Note: From RO1, a student has to select 1 course, RO2 are courses that the student can participate in, but participation is not mandatory.

Master programme in Nutrition and Health

Schematic figure of the master programme

'Basics' for every student			
Statistics	**Research Methodology**	**Academic Skills & Competences**	
Basic Statistics	Methodology Nutrition Research	Modular Skills	
Advanced Statistics for Nutritionists	Introduction Epidemiology and Public Health	Scientific Skills Training	
	or Sensory Science I	Academic Consultancy Training	
Specialization A/B/C			
Specialization specific courses (CS)	**Specific course(s) towards thesis-subject (RO1)**	**T-shaped: broadening within domain (RO2)**	**Supporting techniques (RO3, only in spec. C)**
specialization specific, see further			
Specialization D			
Specialization specific courses (CS)			
Individual (research) work			
Thesis within specialization (36 credits)			
Academic Internship within domain (24 credits)			

Overview of the master courses

Course		Credits	Compulsory/ Restricted Optional (RO)	Year	Period
Common Part					
ECS-20806	Didactic Skills	6	RO-1A	MSc-1	1
ECS-32306	Teaching as a Profession	6	RO-1A	MSc-1	2
YMC-60303	Modular Skills Training (MOS)	3	RO-1B	MSc-1	1
YMC-60809	Academic Consultancy Training	9	RO-1B	MSc-1	1
YMC-60303	Modular Skills Training (MOS)	3	RO-1C	MSc-1	1
YMC-61303	Scientific Skills Training	3	RO-1C	MSc-1	1
CBI-70424	MSc Internship Cell Biology and Immunology	24	RO-2	MSc-2	1
COM-70424	MSc Internship Communication and Innovation Studies	24	RO-2	MSc-2	1
HAP-70424	MSc Internship Human and Animal Physiology	24	RO-2	MSc-2	1
HNE-70924	MSc Internship Human Nutrition	24	RO-2	MSc-2	1
HNE-71024	MSc Internship Nutrition and Pharmacology	24	RO-2	MSc-2	1
HNE-71424	MSc Internship Epidemiology and Public Health	24	RO-2	MSc-2	1
HNE-72424	MSc Internship Metabolism and Nutrigenomics	24	RO-2	MSc-2	1
HNE-73824	MSc Internship Sensory Science and Eating Behaviour	24	RO-2	MSc-2	1
TOX-70424	MSc Internship Toxicology	24	RO-2	MSc-2	1
Specialization A: Epidemiology and Public Health					
HNE-31006	Study Design and Interpretation in Epidemiology and Public Health	6	Compulsory	MSc-1	3
HNE-37306	Applied Data Analysis (in Human Nutrition and Health Research)	6	Compulsory	MSc-1	4
HNE-24806	Introduction to Epidemiology and Public Health	6	RO-0	MSc-1	1
MAT-14303	Basic Statistics	3	RO-0	MSc-1	1
HNE-24306	Methodology Nutrition Research	6	RO-0	MSc-1	2
MAT-24306	Advanced Statistics for Nutritionists	6	RO-0	MSc-1	2
HNE-32806	Exposure Assessment in Nutrition and Health Research	6	RO-1	MSc-1	5
HNE-33806	Public Health Practice	6	RO-1	MSc-1	5
HNE-30806	Analytical Epidemiology	6	RO-1	MSc-1	6
HNE-33306	Public Health Nutrition: Policies and Programmes	6	RO-1	MSc-1	6
HNE-36406	Food and Nutrition Security in Developing Countries: Monitoring and Evaluation	6	RO-1	MSc-1	6
COM-36806	Advances in Health Promotion	6	RO-2	MSc-1/2	1
HNE-30506	Sensory Science I: Principles of Sensory Science	6	RO-2	MSc-1/2	1
HAP-30306	Nutritional Physiology	6	RO-2	MSc-1/2	2
HNE-35206	Human Pathology	6	RO-2	MSc-1/2	2
HNE-34306	Advanced Metabolic Aspects of Nutrition	6	RO-2	MSc-1/2	3
HNE-35306	General Medicine	6	RO-2	MSc-1/2	4
TOX-30306	Food Toxicology	6	RO-2	MSc-1/2	4
COM-30306	Health Communication and Behavioural Change	6	RO-2	MSc-1/2	5
HNE-30306	Psychobiology of Food Choice and Eating Behaviour	6	RO-2	MSc-1/2	5
HNE-32306	Clinical Nutrition	6	RO-2	MSc-1/2	5
HNE-36806	Nutrition and Sports	6	RO-2	MSc-1/2	5
HNE-39806	Hidden Hunger: Micronutrient Deficiencies in Developing Countries	6	RO-2	MSc-1/2	5
HNE-80936	MSc Thesis Human Nutrition	36	RO-3	MSc-2	1
HNE-81436	MSc Thesis Epidemiology and Public Health	36	RO-3	MSc-2	1
HNE-38802	Concepts and Methods in Epidemiology	2	RO-4	MSc-2	1

Course		Credits	Compulsory/ Restricted Optional (RO)	Year	Period
Specialization B: Nutritional Physiology and Health Status					
HAP-30306	Nutritional Physiology	6	Compulsory	MSc-1	2
HNE-37306	Applied Data Analysis (in Human Nutrition and Health Research)	6	Compulsory	MSc-1	4
HNE-24806	Introduction to Epidemiology and Public Health	6	RO-0	MSc-1	1
MAT-14303	Basic Statistics	3	RO-0	MSc-1	1
HNE-24306	Methodology Nutrition Research	6	RO-0	MSc-1	2
MAT-24306	Advanced Statistics for Nutritionists	6	RO-0	MSc-1	3
HNE-30506	Sensory Science I: Principles of Sensory Science	6	RO-1	MSc-1	1
HNE-30306	Psychobiology of Food Choice and Eating Behaviour	6	RO-1	MSc-1	5
HNE-32306	Clinical Nutrition	6	RO-1	MSc-1	5
HNE-32806	Exposure Assessment in Nutrition and Health Research	6	RO-1	MSc-1	5
HNE-36806	Nutrition and Sports	6	RO-1	MSc-1	5
HNE-39806	Hidden Hunger: Micronutrient Deficiencies in Developing Countries	6	RO-1	MSc-1	5
FCH-21806	Food Related Allergies and Intolerances	6	RO-2	MSc-1/2	2
HNE-35206	Human Pathology	6	RO-2	MSc-1/2	2
HNE-34306	Advanced Metabolic Aspects of Nutrition	6	RO-2	MSc-1/2	3
HNE-35306	General Medicine	6	RO-2	MSc-1/2	4
TOX-30306	Food Toxicology	6	RO-2	MSc-1/2	4
HNE-33806	Public Health Practice	6	RO-2	MSc-1/2	5
HNE-30806	Analytical Epidemiology	6	RO-2	MSc-1/2	6
HNE-33306	Public Health Nutrition: Policies and Programmes	6	RO-2	MSc-1/2	6
HNE-36406	Food and Nutrition Security in Developing Countries: Monitoring and Evaluation	6	RO-2	MSc-1/2	6
HAP-80436	MSc Thesis Human and Animal Physiology	36	RO-3	MSc-2	1
HNE-80936	MSc Thesis Human Nutrition	36	RO-3	MSc-2	1
HNE-81436	MSc Thesis Epidemiology and Public Health	36	RO-3	MSc-2	1
HNE-83836	MSc Thesis Sensory Science and Eating Behaviour	36	RO-3	MSc-2	1
Specialization C: Molecular Nutrition and Toxicology					
HAP-30306	Nutritional Physiology	6	Compulsory	MSc-1	2
HNE-34306	Advanced Metabolic Aspects of Nutrition	6	Compulsory	MSc-1	3
HNE-24806	Introduction to Epidemiology and Public Health	6	RO-0	MSc-1	1
MAT-14303	Basic Statistics	3	RO-0	MSc-1	1
HNE-24306	Methodology Nutrition Research	6	RO-0	MSc-1	2
CBI-30306	Human and Veterinary Immunology	6	RO-1	MSc-1	1
TOX-30306	Food Toxicology	6	RO-1	MSc-1	4
HNE-34806	Nutritional Genomics and Genetics	6	RO-1	MSc-1	5
HNE-39306	Pharmacological Aspects of Nutrition	6	RO-1	MSc-1	6
HAP-31806	Molecular Regulation of Health and Disease	6	RO-2	MSc-1	1
HNE-30506	Sensory Science I: Principles of Sensory Science	6	RO-2	MSc-1/2	1
FCH-21806	Food Related Allergies and Intolerances	6	RO-2	MSc-1/2	2
HNE-35206	Human Pathology	6	RO-2	MSc-1/2	2
HNE-35306	General Medicine	6	RO-2	MSc-1/2	4
HNE-30306	Psychobiology of Food Choice and Eating Behaviour	6	RO-2	MSc-1/2	5
HNE-32306	Clinical Nutrition	6	RO-2	MSc-1/2	5
HNE-36806	Nutrition and Sports	6	RO-2	MSc-1/2	5
HNE-39806	Hidden Hunger: Micronutrient Deficiencies in Developing Countries	6	RO-2	MSc-1/2	5
HNE-33306	Public Health Nutrition: Policies and Programmes	6	RO-2	MSc-1/2	6
EZO-31804	Laboratory Animal Science Course	4	RO-3	MSc-1/2	1
MOB-20306	Gene Technology	6	RO-3	MSc-1/2	1
MOB-30306	Control of Cellular Processes and Cell Differentiation	6	RO-3	MSc-1/2	1
SSB-20306	Bioinformation Technology	6	RO-3	MSc-1/2	1

Appendix 5: Quantitative data regarding the programmes

Data on intake, transfers and graduation

Bachelor programme in Voeding en Gezondheid

Success rates

Cohort	2003	2004	2005	2006	2007	2008	2009	2010
Size at the outset	49	44	63	70	101	95	114	116
Size of re-enrolment T+1	*45*	*31*	*48*	*61*	*83*	*76*	*90*	
Diploma after 3 years (%)	53	42	27	31	47			
Diploma after 4 years (%)	76	74	69	74				
Diploma after 5 years (%)	91	84	81					
Diploma after 6 years (%)	96	87						
Diploma after 7 years (%)	98							
Drop-outs 1 October 2010 (%)	*2*	*10*	*6*	*5*	*7*	*1*		

Master programme in Nutrition and Health

Success rates

Cohort	2003	2004	2005	2006	2007	2008	2009	2010
Size at the outset	53	63	48	65	71	80	96	150
Diploma after 2 years (%)	68	67	73	51	82	75		
Diploma after 3 years (%)	91	94	92	91	97			
Diploma after 4 years (%)	92	95	94	95				
Diploma after 5 years (%)	92	95	96					
Drop-outs 1 October 2010 (%)	*8*	*5*	*4*	*5*	*1*	*4*		

Teacher-student ratio achieved

For Wageningen University the average student/staff ratio lies between 5.5 and 12.5 for bachelor programmes, and between 5.5 and 10 for master programmes.

For the bachelor programme in Nutrition and Health the student/staff ratio is 7.6. For the master programme in Nutrition and Health the student/staff ratio is 7.

Average amount of face-to-face instruction per stage of the study programme

Number of programmed contact hours

Year	Contact hours	Contact hours (% of 1680)
B1	674	40.1 %
B2	698	41.5 %
B3	802	47.7 %
M1	613	36.5 %
M2	60	3.6 %

Appendix 6: Programme of the site visit

4 July 2012

16.30 – 18.00 **Preparatory meeting committee (in Hotel)**

5 July 2012

9.00 – 10.00 **Management (responsible for content of the programme)**
Prof Dr R.F. (Renger) Witkamp (Chair-holder Nutrition & Pharmacology, boardmember Education Institute)
Ir R.C.L. (Rolf) Marteijn (Programme Director)

10.00 – 10.15 **Break**

10.15 – 11.15 **Students BVG-MNH**
C.J.(Carina) Rietema (BSc 3rd year)
M.(Marie-Louise) Puhlmann (BSc 2nd year)
B.(Bart) Lagerwaard (BSc 2nd year)
J.(Junyi) Zhang (MSc 1st year)
S.J.(Sauli) Epimack (MSc 1st year)
A.B.(Amber) Ouweneel (MSc 1st year)
E.C.A.(Edith) van den Bergh (MSc 2nd year)
F.B.C.(Francy) Vennemann (MSc 1st year)

11.15 – 12.15 **Lecturers BVG-MNH**
Prof.dr ir J. (Jaap) Keijer (Chair-holder Human and Animal Physiology)
Dr.ir L.A. (Lydia) Afman (Assistant Professor Nutrition, Metabolism and Genomics)
Dr.M. (Marijn) de Bruin (Assistant Professor Communication Strategy)
Dr. J.M. (Marianne) Geleijnse (Associate Professor Nutrition and Epidemiology)
Dr. M.R. (Marco) Mensink (Assistant Professor Nutrition and Health)
Dr .G. (Gerry) Jager (Assistant Professor Sensory Science and Eating Behaviour)
Prof.dr.ir E. (Ellen) Kampman (Personal Professor Nutrition and Epidemiology)
Dr.ir.M.C. (Cora) Busstra (Lecturer Nutrition and Epidemiology)

12.15 – 13.00 **Lunch**

13.00 – 13.30 **Programme Committee BVG-MNH**
Dr.ir. J.A.M. (Jeanne) de Vries (Assistant Professor Nutrition and Health and Committee member)
Dr.ir. A. (Ans) Punt (Assistant Professor Toxicology and Committee member)
I.(Imke) Bareman (BSc 1st year student and Committee member)
M.H.J.(Mandy) Hendriks (BSc 2nd year student and Committee member)
M.D.(Marjanne) van der Hoek (MSc 1st year student and Committee member)
A.B.(Berdien) Post (BSc 3rd year student and Committee member)
R.A.(Rosella) Koning (BSc 4th year student and former Committee member)
M.A.C.(Maartje) Schreurs (BSc 2nd year student and Committee member)

14.00 – 14.45 **Final meeting with Management (final responsibility for programme)**

Prof.dr. R.F. (Renger) Witkamp (Chair-holder Nutrition & Pharmacology, boardmember Education Institute)
R.C.L. (Rolf) Marteijn, MSc (Programme Director)

15.45 – 16.00 **Presentation of the preliminary findings by committee chair**

Programme for Kick-off meeting, 21 February: Common part of critical reflections

09.00 – 09.15 **Welcome by the Rector and the Director of the EI**[1]
09.15 – 11.00 **Preparatory meeting of assessment panel**
11.00 – 12.15 **General management programmes**:
P. (Paulien) Poelarends (member, Board of the EI)
R.A. (Rosella) Koning (member, Board of the EI)
Prof. T.W.M. (Thom) Kuyper (member, Board of the EI)
Prof. L.E. (Leontine) Visser (member, Board of the EI)
Prof. E.W. (Pim)Brascamp (Director of the EI)
J.J. (Jan) Steen (Quality assurance and enhancement officer)
12.15 – 12.45 Lunch
12.45 – 13.30 **Study Advisers:**
Dr. A.E.M. (Anja) Janssen (BSc and MSc Food Technology, Food Safety, Food Quality Management)
C.M. (Neeltje) van Hulten (BSc and MSc Agriculture and Bioresource Engineering)
C.Q.J.M. (Stijn) Heukels (BSc and MSc Landscape Architecture and Planning)
W.T. (Willy) ten Haaf (MSc Geo-Information Science)
Dr. W. (Wouter) Hazeleger (MSc Animal Sciences) [not present]
R.N.M. (Gineke) Boven (BSc Management and Consumer Studies)
13.30 – 14.30 **Examining boards**:
Dr. P.B.M. (Paul) Berentsen (secretary, EB[2] Social Sciences)
Dr. M.C.R. (Maurice) Franssen (secretary, EB Technology and Nutrition)
C.P.G.M. (Lisette) de Groot (chair, EB Technology and Nutrition)
Dr. D. (Dick) van der Hoek (secretary, EB Environment and Landscape)
Dr. K. (Klaas) Swart (secretary, EB Life Sciences)
Prof. W (Willem) Takken (chair, EB Life Sciences)
14.30 – 14.45 Break
14.45 – 15.45 **Lecturers of Programme Committees:**
Dr. A.J.B. (Ton) van Boxtel (Biotechnology and Bioinformatics)
Dr. J. (Jan) den Ouden (Forest and Nature Conservation)
Dr. K.B.M. (Karin) Peters (Leisure, Tourism and Environment)
Dr. W.A.H. (Walter) Rossing (Organic Agriculture)
Dr. R. (Rico) Lie (International Development Studies)
Dr. W.T. (Wilma) Steegenga (Nutrition and Health)
15.45 – 17.15 **Meeting of assessment panel**: evaluation and first findings
17.15 – 18.00 **Graduates**:
Francesco Cecchi, MSc (MSc International Development Studies)
Prof. Charlotte de Fraiture (MSc International Land and Water Management)
Dr. Dinand Ekkel (MSc Animal Sciences)
Loes Mertens (MSc Organic Agriculture)
M. Visser (MSc Forest and Nature Conservation)

[1] EI = Education Institute
[2] EB = Examining Board

Appendix 7: Theses and documents studied by the committee

Prior to the site visit, the committee studied the theses of the students with the following student numbers:

Bachelor programme	*Master programme*
890618114100	870210156010
891230469090	721106173060
900607661070	860630584060
900220797060	810818616010
880818490110	780909758070
890419714080	870608262030
860426736130	811111508090
870110219030	860925643110
880811157070	721113644030
860722473130	870624297010
870619660040	861103583080
880101314040	811021693040
880513597080	780731825120
870913535050	870907853010
840120712080	780711972040

During the site visit, the committee studied the following documents (partly as hard copies, partly via the institute's electronic learning environment):

- Reports of consultations with relevant committees / organs (programme committee and examinations committee, relevant ad-hoc committees);
- Examination tasks with associated evaluation criteria and standard (answer keys) and a representative selection of completed examinations (presentations, internship and/or research reports, portfolios, etc.) and their evaluations;
- List of required literature;
- Summary and analysis of recent evaluation results and relevant management information;
- Thesis regulations and guidelines for preparing projects;
- Internship regulations/handbooks;
- Course, staff and curriculum evaluations, student satisfaction survey(s), etc.;
- Alumni/exit questionnaires;
- Material about the student associations;
- Documentation on teaching staff satisfaction.

Appendix 8: Declarations of independence

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DECLARATION OF INDEPENDENCE AND CONFIDENTIALITY

TO BE SUBMITTED PRIOR TO THE ASSESSMENT OF THE PROGRAMME

THE UNDERSIGNED

NAME: FRANS ZWARTS

HOME ADDRESS: PETRUS CAMPERSINGEL 253
9713 AP GRONINGEN

HAS BEEN ASKED TO ASSESS THE FOLLOWING PROGRAMME AS AN EXPERT / ~~SECRETARY~~:

LIFE SCIENCES, SEE ATTACHMENT

APPLICATION SUBMITTED BY THE FOLLOWING INSTITUTION:

WAGENINGEN UNIVERSITY

HEREBY CERTIFIES TO NOT MAINTAINING ANY (FAMILY) CONNECTIONS OR TIES OF A PERSONAL NATURE OR AS A RESEARCHER / TEACHER, PROFESSIONAL OR CONSULTANT WITH THE ABOVE INSTITUTION, WHICH COULD AFFECT A FULLY INDEPENDENT JUDGEMENT REGARDING THE QUALITY OF THE PROGRAMME IN EITHER A POSITIVE OR A NEGATIVE SENSE;

1

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HEREBY CERTIFIES TO NOT HAVING MAINTAINED SUCH CONNECTIONS OR TIES WITH THE INSTITUTION DURING THE PAST FIVE YEARS;

CERTIFIES TO OBSERVING STRICT CONFIDENTIALITY WITH REGARD TO ALL THAT HAS COME AND WILL COME TO HIS/HER NOTICE IN CONNECTION WITH THE ASSESSMENT, INSOFAR AS SUCH CONFIDENTIALITY CAN REASONABLY BE CLAIMED BY THE PROGRAMME, THE INSTITUTION OR NVAO;

HEREBY CERTIFIES TO BEING ACQUAINTED WITH THE NVAO CODE OF CONDUCT.

PLACE: Wageningen DATE: March 30, 2012

SIGNATURE:

2

Bijlage bij onafhankelijkheidsverklaring

Visitatiebezoek	Opleiding (CROHO-nummer):	Variant:
A. Food Technology	B Levensmiddelentechnologie (BLT; 56973)	Voltijd
	M Food Safety (MFS; 60112)	Voltijd
	M Food Technology (MLT; 66973)	Voltijd
	M Food Quality Management (MQ; 60109)	Voltijd
B. Biotechnology en Bio-Informatics	B Biotechnologie (BBT; 56841)	Voltijd
	M Biotechnology (MBT; 66841)	Voltijd
	M Bioinformatics (MBF; 60106)	Voltijd
C. Agricultural and Bioresource Engineering	B Agrotechnologie (BAT; 56831)	Voltijd
	M Agricultural and Bioresource Engineering (MAB; 66831)	Voltijd
D. Forest and Nature conservation	B Bos- en Natuurbeheer (BBN; 56219)	Voltijd
	M Forest and Nature Conservation (MFN; 66219)	Voltijd
E. International Land and Water Management	B Internationaal Land- en Waterbeheer (BIL; 50100)	Voltijd
	M International Land and Water Management (MIL; 60104)	Voltijd
F. Landscape, Architecture and Planning	B Landschapsarchitectuur en ruim. Planning (BLP; 56848)	Voltijd
	M Landscape, Architecture and Planning (MLP; 66848)	Voltijd
G. Leisure, Tourism and Environment	M Leisure, Tourism and Environment (MLE; 60111)	Voltijd
H. Geo-Information Science	M Geo-Information Science (MGI; 60108)	Voltijd
I. Plant Sciences	B Plantenwetenschappen (BPW; 56835)	Voltijd
	M Plant Sciences (MPS; 66835)	Voltijd
	M Organic Agriculture (MOA; 69300)	Voltijd
	M Plant Biotechnology (MPB; 60105)	Voltijd
J. Animal Sciences	B Dierwetenschappen (BDW; 56849)	Voltijd
	M Animal Sciences (MAS; 66849)	Voltijd
K. Climate Studies	M Climate Studies (MCL; 60107)	Voltijd
L. International Development Studies	B Internationale Ontwikkelingsstudies (BIN; 56837)	Voltijd
	M International Development Studies (MID; 66837)	Voltijd
	M Development and Rural Innovation (MDR; 60103)	Voltijd
M. Management, Economics and Consumer Studies	B Bedrijfs- en Consumentenwetenschappen (BBC; 56836)	Voltijd
	M Management, Economics and Consumer Studies (MME; 66836)	Voltijd
N. Nutrition and Health	B Voeding en Gezondheid (BVG; 56868)	Voltijd
	M Nutrition and Health (MNH; 66868)	Voltijd

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DECLARATION OF INDEPENDENCE AND CONFIDENTIALITY

TO BE SUBMITTED PRIOR TO THE ASSESSMENT OF THE PROGRAMME

THE UNDERSIGNED

NAME: RENATE PRENEN

HOME ADDRESS: Simon Stevinweg 21
1401 TB Bussum

HAS BEEN ASKED TO ASSESS THE FOLLOWING PROGRAMME AS AN EXPERT / ~~SECRETARY~~:

LIFE SCIENCES - SEE ATTACHMENT

APPLICATION SUBMITTED BY THE FOLLOWING INSTITUTION:

WAGENINGEN UNIVERSITY

HEREBY CERTIFIES TO NOT MAINTAINING ANY (FAMILY) CONNECTIONS OR TIES OF A PERSONAL NATURE OR AS A RESEARCHER / TEACHER, PROFESSIONAL OR CONSULTANT WITH THE ABOVE INSTITUTION, WHICH COULD AFFECT A FULLY INDEPENDENT JUDGEMENT REGARDING THE QUALITY OF THE PROGRAMME IN EITHER A POSITIVE OR A NEGATIVE SENSE;

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HEREBY CERTIFIES TO NOT HAVING MAINTAINED SUCH CONNECTIONS OR TIES WITH THE INSTITUTION DURING THE PAST FIVE YEARS;

CERTIFIES TO OBSERVING STRICT CONFIDENTIALITY WITH REGARD TO ALL THAT HAS COME AND WILL COME TO HIS/HER NOTICE IN CONNECTION WITH THE ASSESSMENT, INSOFAR AS SUCH CONFIDENTIALITY CAN REASONABLY BE CLAIMED BY THE PROGRAMME, THE INSTITUTION OR NVAO;

HEREBY CERTIFIES TO BEING ACQUAINTED WITH THE NVAO CODE OF CONDUCT.

PLACE: Wageningen DATE: 29-03-'12

SIGNATURE:

Bijlage bij onafhankelijkheidsverklaring

Visitatiebezoek	Opleiding (CROHO-nummer):	Variant:
A. Food Technology	B Levensmiddelentechnologie (BLT; 56973)	Voltijd
	M Food Safety (MFS; 60112)	Voltijd
	M Food Technology (MLT; 66973)	Voltijd
	M Food Quality Management (MQ; 60109)	Voltijd
B. Biotechnology en Bio-Informatics	B Biotechnologie (BBT; 56841)	Voltijd
	M Biotechnology (MBT; 66841)	Voltijd
	M Bioinformatics (MBF; 60106)	Voltijd
C. Agricultural and Bioresource Engineering	B Agrotechnologie (BAT; 56831)	Voltijd
	M Agricultural and Bioresource Engineering (MAB; 66831)	Voltijd
D. Forest and Nature conservation	B Bos- en Natuurbeheer (BBN; 56219)	Voltijd
	M Forest and Nature Conservation (MFN; 66219)	Voltijd
E. International Land and Water Management	B Internationaal Land- en Waterbeheer (BIL; 50100)	Voltijd
	M International Land and Water Management (MIL; 60104)	Voltijd
F. Landscape, Architecture and Planning	B Landschapsarchitectuur en ruim. Planning (BLP; 56848)	Voltijd
	M Landscape, Architecture and Planning (MLP; 66848)	Voltijd
G. Leisure, Tourism and Environment	M Leisure, Tourism and Environment (MLE; 60111)	Voltijd
H. Geo-Information Science	M Geo-Information Science (MGI; 60108)	Voltijd
I. Plant Sciences	B Plantenwetenschappen (BPW; 56835)	Voltijd
	M Plant Sciences (MPS; 66835)	Voltijd
	M Organic Agriculture (MOA; 69300)	Voltijd
	M Plant Biotechnology (MPB; 60106)	Voltijd
J. Animal Sciences	B Dierwetenschappen (BDW: 56849)	Voltijd
	M Animal Sciences (MAS; 66849)	Voltijd
K. Climate Studies	M Climate Studies (MCL; 60107)	Voltijd
L. International Development Studies	B Internationale Ontwikkelingsstudies (BIN; 56837)	Voltijd
	M International Development Studies (MID; 66837)	Voltijd
	M Development and Rural Innovation (MDR; 60103)	Voltijd
M. Management, Economics and Consumer Studies	B Bedrijfs- en Consumentenwetenschappen (BBC; 56836)	Voltijd
	M Management, Economics and Consumer Studies (MME; 66836)	Voltijd
N. Nutrition and Health	B Voeding en Gezondheid (BVG; 56868)	Voltijd
	M Nutrition and Health (MNH; 66868)	Voltijd

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DECLARATION OF INDEPENDENCE AND CONFIDENTIALITY

TO BE SUBMITTED PRIOR TO THE ASSESSMENT OF THE PROGRAMME

THE UNDERSIGNED

NAME: Karl-Heinz Wagner

HOME ADDRESS: Aderstal Objekt 9 A 16 14 ; 1030 Wien A

HAS BEEN ASKED TO ASSESS THE FOLLOWING PROGRAMME AS AN EXPERT / ~~SECRETARY~~:

Life Sciences BSc + MSc in Nutrition and Health

APPLICATION SUBMITTED BY THE FOLLOWING INSTITUTION:

Wageningen University

HEREBY CERTIFIES TO NOT MAINTAINING ANY (FAMILY) CONNECTIONS OR TIES OF A PERSONAL NATURE OR AS A RESEARCHER / TEACHER, PROFESSIONAL OR CONSULTANT WITH THE ABOVE INSTITUTION, WHICH COULD AFFECT A FULLY INDEPENDENT JUDGEMENT REGARDING THE QUALITY OF THE PROGRAMME IN EITHER A POSITIVE OR A NEGATIVE SENSE;

1

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HEREBY CERTIFIES TO NOT HAVING MAINTAINED SUCH CONNECTIONS OR TIES WITH THE INSTITUTION DURING THE PAST FIVE YEARS;

CERTIFIES TO OBSERVING STRICT CONFIDENTIALITY WITH REGARD TO ALL THAT HAS COME AND WILL COME TO HIS/HER NOTICE IN CONNECTION WITH THE ASSESSMENT, INSOFAR AS SUCH CONFIDENTIALITY CAN REASONABLY BE CLAIMED BY THE PROGRAMME, THE INSTITUTION OR NVAO;

HEREBY CERTIFIES TO BEING ACQUAINTED WITH THE NVAO CODE OF CONDUCT.

PLACE: Wageningen DATE: 04.02.12

SIGNATURE:

2

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DECLARATION OF INDEPENDENCE AND CONFIDENTIALITY

TO BE SUBMITTED PRIOR TO THE ASSESSMENT OF THE PROGRAMME

THE UNDERSIGNED

NAME: Jutta Dierkes

HOME ADDRESS:

Nye Sædalsveien 155, 5099 Bergen, Norway /
Institut of Medicine, Postbox 7804, 5020 Bergen, Norway

HAS BEEN ASKED TO ASSESS THE FOLLOWING PROGRAMME AS AN EXPERT / SECRETARY:

Wageningen University, Nutrition and Health

APPLICATION SUBMITTED BY THE FOLLOWING INSTITUTION:

NVAO

HEREBY CERTIFIES TO NOT MAINTAINING ANY (FAMILY) CONNECTIONS OR TIES OF A PERSONAL NATURE OR AS A RESEARCHER / TEACHER, PROFESSIONAL OR CONSULTANT WITH THE ABOVE INSTITUTION, WHICH COULD AFFECT A FULLY INDEPENDENT JUDGEMENT REGARDING THE QUALITY OF THE PROGRAMME IN EITHER A POSITIVE OR A NEGATIVE SENSE;

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nederlands - vlaamse accreditatieorganisatie

HEREBY CERTIFIES TO NOT HAVING MAINTAINED SUCH CONNECTIONS OR TIES WITH THE INSTITUTION DURING THE PAST FIVE YEARS;

CERTIFIES TO OBSERVING STRICT CONFIDENTIALITY WITH REGARD TO ALL THAT HAS COME AND WILL COME TO HIS/HER NOTICE IN CONNECTION WITH THE ASSESSMENT, INSOFAR AS SUCH CONFIDENTIALITY CAN REASONABLY BE CLAIMED BY THE PROGRAMME, THE INSTITUTION OR NVAO;

HEREBY CERTIFIES TO BEING ACQUAINTED WITH THE NVAO CODE OF CONDUCT.

PLACE: Bergen DATE: 12. Sept. 2011

SIGNATURE:

2

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DECLARATION OF INDEPENDENCE AND CONFIDENTIALITY

TO BE SUBMITTED PRIOR TO THE ASSESSMENT OF THE PROGRAMME

THE UNDERSIGNED

NAME: Katharina Diem

HOME ADDRESS:

HAS BEEN ASKED TO ASSESS THE FOLLOWING PROGRAMME AS AN EXPERT / ~~SECRETARY~~:

Life Sciences - BSc and MSc in Nutrition and Health

APPLICATION SUBMITTED BY THE FOLLOWING INSTITUTION:

Wageningen University

HEREBY CERTIFIES TO NOT MAINTAINING ANY (FAMILY) CONNECTIONS OR TIES OF A PERSONAL NATURE OR AS A RESEARCHER / TEACHER, PROFESSIONAL OR CONSULTANT WITH THE ABOVE INSTITUTION, WHICH COULD AFFECT A FULLY INDEPENDENT JUDGEMENT REGARDING THE QUALITY OF THE PROGRAMME IN EITHER A POSITIVE OR A NEGATIVE SENSE;

1

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HEREBY CERTIFIES TO NOT HAVING MAINTAINED SUCH CONNECTIONS OR TIES WITH THE INSTITUTION DURING THE PAST FIVE YEARS;

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HEREBY CERTIFIES TO BEING ACQUAINTED WITH THE NVAO CODE OF CONDUCT.

PLACE: VIENNA DATE: 16.01.2012

SIGNATURE: Katharina Diem

2

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DECLARATION OF INDEPENDENCE AND CONFIDENTIALITY

TO BE SUBMITTED PRIOR TO THE ASSESSMENT OF THE PROGRAMME

THE UNDERSIGNED

NAME: MEG VAN BOGAERT

HOME ADDRESS: CATHARYNESINGEL 56
3511 GE UTRECHT

HAS BEEN ASKED TO ASSESS THE FOLLOWING PROGRAMME AS AN ~~EXPERT~~ / SECRETARY:

LIFE SCIENCES, SEE ATTACHMENT

APPLICATION SUBMITTED BY THE FOLLOWING INSTITUTION:

WAGENINGEN UNIVERSITY

HEREBY CERTIFIES TO NOT MAINTAINING ANY (FAMILY) CONNECTIONS OR TIES OF A PERSONAL NATURE OR AS A RESEARCHER / TEACHER, PROFESSIONAL OR CONSULTANT WITH THE ABOVE INSTITUTION, WHICH COULD AFFECT A FULLY INDEPENDENT JUDGEMENT REGARDING THE QUALITY OF THE PROGRAMME IN EITHER A POSITIVE OR A NEGATIVE SENSE;

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nvao
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CERTIFIES TO OBSERVING STRICT CONFIDENTIALITY WITH REGARD TO ALL THAT HAS COME AND WILL COME TO HIS/HER NOTICE IN CONNECTION WITH THE ASSESSMENT, INSOFAR AS SUCH CONFIDENTIALITY CAN REASONABLY BE CLAIMED BY THE PROGRAMME, THE INSTITUTION OR NVAO;

HEREBY CERTIFIES TO BEING ACQUAINTED WITH THE NVAO CODE OF CONDUCT.

PLACE: UTRECHT DATE: 20/3/12

SIGNATURE:

2

Bijlage bij onafhankelijkheidsverklaring

Visitatiebezoek	Opleiding (CROHO-nummer):	Variant:
A. Food Technology	B Levensmiddelentechnologie (BLT; 56973)	Voltijd
	M Food Safety (MFS; 60112)	Voltijd
	M Food Technology (MLT; 66973)	Voltijd
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B. Biotechnology en Bio-Informatics	B Biotechnologie (BBT; 56841)	Voltijd
	M Biotechnology (MBT; 66841)	Voltijd
	M Bioinformatics (MBF; 60105)	Voltijd
C. Agricultural and Bioresource Engineering	B Agrotechnologie (BAT; 56831)	Voltijd
	M Agricultural and Bioresource Engineering (MAB; 66831)	Voltijd
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	M Forest and Nature Conservation (MFN; 66219)	Voltijd
E. International Land and Water Management	B Internationaal Land- en Waterbeheer (BIL; 50100)	Voltijd
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	M Landscape, Architecture and Planning (MLP; 66848)	Voltijd
G. Leisure, Tourism and Environment	M Leisure, Tourism and Environment (MLE; 60111)	Voltijd
H. Geo-Information Science	M Geo-Information Science (MGI; 60108)	Voltijd
I. Plant Sciences	B Plantenwetenschappen (BPW; 56835)	Voltijd
	M Plant Sciences (MPS; 66835)	Voltijd
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	M Animal Sciences (MAS; 66849)	Voltijd
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L. International Development Studies	B Internationale Ontwikkelingsstudies (BIN; 56837)	Voltijd
	M International Development Studies (MID; 66837)	Voltijd
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M. Management, Economics and Consumer Studies	B Bedrijfs- en Consumentenwetenschappen (BBC; 56836)	Voltijd
	M Management, Economics and Consumer Studies (MME; 66836)	Voltijd
N. Nutrition and Health	B Voeding en Gezondheid (BVG; 56868)	Voltijd
	M Nutrition and Health (MNH; 66868)	Voltijd

Appendix 9: Rubric for the assessment of a MSc-thesis

Author: Arnold F. Moene, Meteorology and Air Quality Group, Wageningen University
Version: 1.1 (December 15, 2010)

Item	Mark for item					
	2-3	**4-5**	**6**	**7**	**8**	**9-10**
1. Research competence (30-60%) *						
1.1. Commitment and perseverance	Student is not motivated. Student escapes work and gives up regularly	Student has little motivation. Tends to be distracted easily. Has given up once or twice	Student is motivated at times, but often, sees the work as a compulsory task. Is distracted from thesis work now and then.	The student is motivated. Overcomes an occasional setback with help of the supervisor.	The student is motivated and/or overcomes an occasional setback on his own and considers the work as his "own" project.	The student is very motivated, goes at length to get the most out of the project. Takes complete control of his own project. Considers setbacks as an extra motivation.
1.2. Initiative and creativity	Student shows no initiative or new ideas at all.	Student picks up some initiatives and/or new ideas suggested by others (e.g. supervisor), but the selection is not motivated.	Student shows some initiative and/or together with the supervisor develops one or two new ideas on minor parts of the research.	Student initiates discussions on new ideas with supervisor and develops one or two own ideas on minor parts of the research.	Student has his own creative ideas on hypothesis formulation, design or data processing.	Innovative research methods and/or data-analysis methods developed. Possibly the scientific problem has been formulated by the student.
1.3. Independence	The student can only perform the project properly after repeated detailed instructions and with direct help from the supervisor.	The student needs frequent instructions and well-defined tasks from the supervisor and the supervisor needs careful checks to see if all tasks have been performed.	The supervisor is the main responsible for setting out the tasks, but the student is able to perform them mostly independently	Student selects and plans the tasks together with the supervisor and performs these tasks on his own	Student plans and performs tasks mostly independently, asks for help from the supervisor when needed.	Student plans and performs tasks independently and organizes his sources of help independently.
	No critical self-reflection at all.	No critical self-reflection at all.	Student is able to reflect on his functioning with the help of the supervisor only.	The student occasionally shows critical self-reflection.	Student actively performs critical self-reflection on some aspects of his functioning	Student actively performs critical self-reflection on various aspects of his own functioning and performance.
1.4. Efficiency in working with data Note: depending on the characteristics of the thesis work, not all three aspects	**Experimental work** Student is not able to setup and/or execute an experiment.	Student is able to execute detailed instructions to some extent, but errors are made often, invalidating (part of) the experiment.	Student is able to execute an experiment that has been designed by someone else (without critical assessment of sources of error and uncertainty).	Student is able to execute an experiment that has been designed by someone else. Takes sources of error and uncertainty into account in a qualitative sense.	Student is able to judge the setup of an existing experiment and to include modifications if needed. Takes into account sources of error and uncertainty quantitatively.	Student is able to setup or modify an experiment exactly tailored to answering the research questions. Quantitative consideration of sources of error and uncertainty. Execution of the experiment is flawless.

Item	Mark for item					
	2-3	**4-5**	**6**	**7**	**8**	**9-10**
(experimental work, data analysis and model development) may be relevant and some may be omitted	**Data analysis** Student is lost when using data. Is not able to use a spreadsheet program or any other appropriate data-processing program.	Student is able to organize the data, but is not able to perform checks and/or simple analyses	Student is able to organize data and perform some simple checks; but the way the data are used does not clearly contribute to answering of the research questions and/or he is unable to analyze the data independently.	Student is able to organize the data, perform some basic checks and perform basic analyses that contribute to the research question	Student is able to organize the data, perform commonly used checks and perform some advanced analyses on the data	Student is able to organize the data, perform thorough checks and perform advanced and original analyses on the data.
	Model development Student is not able to make any modification/addition to an existing model.	Student modifies an existing model, but errors occur and persist. No validation.	Student is able to make minor modifications (say a single formula) to an existing model. Superficial validation or no validation at all.	Student is able to make major modifications to an existing model, based on literature. Validation using some basic measures of quality.	Student is able to make major modifications to an existing model, based on literature or own analyses. Validation using appropriate statistical measures.	Student is able to develop a model from scratch, or add an important new part to an existing model. Excellent theoretical basis for modelling as well as use of advanced validation methods.
1.5. Handling supervisor's comments and development of research skills	Student does not pick up suggestions and ideas of the supervisor	The supervisor needs to act as an instructor and/or supervisor needs to suggest solutions for problems	Student incorporates some of the comments of the supervisor, but ignores others without arguments	Student incorporates most or all of the supervisor's comments.	Supervisor's comments are weighed by the student and asked for when needed.	Supervisor's comments are critically weighed by the student and asked for when needed, also from other staff members or students.
	Knowledge and insight of the student (in relation to the prerequisites) is insufficient and the student is not able to take appropriate action to remedy this	There is some progress in the research skills of the student, but suggestions of the supervisor are also ignored occasionally.	The student is able to adopt some skills as they are presented during supervision	The student is able to adopt skills as they are presented during supervision and develops some skills independently as well	The student is able to adopt new skills mostly independently, and asks for assistance from the supervisor if needed.	The student has knowledge and insight on a scientific level, i.e. he explores solutions on his own, increases skills and knowledge where necessary.
1.6. Keeping to the time schedule	Final version of thesis or colloquium more than 50% of the nominal period overdue without a valid reason (force majeure)	Final version of thesis or colloquium at most 50% of the nominal period overdue (without a valid reason).	Final version of thesis or colloquium at most 25% of nominal period overdue (without valid reason)	Final version of thesis or colloquium at most 10% of nominal period overdue (without valid reasons)	Final version of thesis or colloquium at most 5% of nominal period overdue (without good reasons)	Final version of thesis and colloquium finished within planned period (or overdue but with good reason).
	No time schedule made.	No realistic time schedule.	Mostly realistic time schedule, but no timely adjustment of time schedule.	Realistic time schedule, with some adjustments (but not enough or not all in time) in times only.	Realistic time schedule, with timely adjustments. of times only.	Realistic time schedule, with timely adjustments of both time and tasks.

Item	Mark for item					
	2-3	**4-5**	**6**	**7**	**8**	**9-10**
2. Thesis report (30-60%) *						
2.1. Relevance research, clearness goals, delineation research	No link is made to existing research on the topic. No research context is described.	The context of the topic at hand is described in broad terms but there is no link between what is known and what will be researched.	The link between the thesis research and existing research does not go beyond the information provided by the supervisor.	Context of the research is defined well, with input from the student. There is a link between the context and research questions.	Context of the research is defined sharply and to-the-point. Research questions emerge directly from the described context.	Thesis research is positioned sharply in the relevant scientific field. Novelty and innovation of the research are indicated.
	There is no researchable research question and the delineation of the research is absent	Most research questions are unclear, or not researchable and the delineation of the research is weak	At least either the research questions or the delineation of the research are clear	The research questions and the delineation are mostly clear but could have been defined sharper at some points	The research questions are clear and researchable and the delineation is clear.	The research questions are clear and formulated to-the-point and limits of the research are well-defined.
2.2. Theoretical underpinning, use of literature	No discussion of underlying theory.	There is some discussion of underlying theory, but the description shows serious errors.	The relevant theory is used, but the description has not been tailored to the research at hand or shows occasional errors.	The relevant theory is used, and the description has been tailored partially successful to the research at hand. Few errors occur.	The relevant theory is used, it is nicely synthesized, and it is successfully tailored to the research at hand.	Clear, complete and coherent overview of relevant theory on the level of an up-to-date review paper. Exactly tailored to the research at hand.
	No peer-reviewed/primary scientific papers in reference list except for those already suggested by the supervisor	Only a couple of peer-reviewed papers in reference list.	Some peer-reviewed papers in reference list but also a significant body of grey literature.	Relevant peer-reviewed papers in reference list but also some grey literature or text books. Some included references less relevant.	Mostly peer-reviewed papers or specialized monographs in reference list. An occasional reference may be less relevant.	Almost exclusively peer-reviewed papers in reference list or specialized monographs (not text books). All papers included are relevant.
2.3. Use of methods and data	No description of methods and/or data.	Research is not reproducible due to insufficient information on data (collection and/or treatment) and analysis methods	Some aspects of the research regarding data-collection, data-treatment, models or the analysis methods are described insufficiently so that that particular aspect of the research is not reproducible.	Description of the data (collection, treatment) or models as well as the analysis methods used is lacking in a number of places so that at most a more or less similar research could be performed.	Description of the data (collection, treatment) or models as well as the analysis methods used is mostly complete, but exact reproduction of the research is not possible due to lack of some details.	Description of the data (collection, treatment) or models as well as the analysis methods is complete and clear so that exact reproduction of the research is possible.
2.4. Critical reflection on the research performed (discussion)	No discussion and/or reflection on the research. Discussion only touches trivial or very general points of criticism.	Only some possible weaknesses and/or weaknesses which are in reality irrelevant or non-existent have been identified.	Most weaknesses in the research are indicated, but impacts on the main results are not weighed relative to each other.	Most weaknesses in the research are indicated and impacts on the main results are weighed relative to each other.	All weaknesses in the research are indicated and weighed relative to each other. Furthermore, (better) alternatives for the methods used are indicated.	Not only all possible weaknesses in the research are indicated, but also it is indicated which weaknesses affect the conclusions most.

Item	Mark for item					
	2-3	**4-5**	**6**	**7**	**8**	**9-10**
	No confrontation with existing literature.	Confrontation with irrelevant existing literature.	Only trivial reflection vis-a-vis existing literature.	Only most obvious conflicts and correspondences with existing literature are identified. The value of the study is described, but it is not related to existing research.	Minor and major conflicts and correspondences with literature are shown. The added value of the research relative to existing literature is identified.	Results are critically confronted with existing literature. In case of conflicts, the relative weight of own results and existing literature is assessed. The contribution of his work to the development of scientific concepts is identified.
2.5. Clarity of conclusions and recommendations	No link between research questions, results and conclusions.	Conclusions are drawn, but in many cases these are only partial answers to the research question. Conclusions merely repeat results.	Conclusions are linked to the research questions, but not all questions are addressed. Some conclusions are not substantiated by results or merely repeat results.	Most conclusions well-linked to research questions and substantiated by results. Conclusions are mostly formulated clearly but with some vagueness in wording.	Clear link between research questions and conclusions. All conclusions substantiated by results. Conclusions are formulated exact.	Clear link between research questions and conclusions. Conclusions substantiated by results. Conclusions are formulated exact and concise. Conclusions are grouped/ordered in a logical way.
	No recommendations given.	Recommendations are absent or trivial.	Some recommendations are given, but the link of those to the conclusions is not always clear.	Recommendations are well-linked to the conclusions.	Recommendations are to-the-point, well-linked to the conclusions and original.	Recommendations are to-the-point, well-linked to the conclusions, original and are extensive enough to serve as project description for a new thesis project.
2.6. Writing skills	Thesis is badly structured. In many cases information appears in wrong locations. Level of detail is inappropriate throughout.	Main structure incorrect in some places, and placement of material in different chapters illogical in many places. Level of detail varies widely (information missing, or irrelevant information given).	Main structure is correct, but lower level hierarchy of sections is not logical in places. Some sections have overlapping functions leading to ambiguity in placement of information. Level of detail varies widely (information missing, or irrelevant information given).	Main structure correct, but placement of material in different chapters illogical in places. Level of detail inappropriate in a number of places (irrelevant information given).	Most sections have a clear and unique function. Hierarchy of sections is mostly correct. Ordering of sections is mostly logical. All information occurs at the correct place, with few exceptions. In most places level of detail is appropriate.	Well-structured: each section has a clear and unique function. Hierarchy of sections is correct. Ordering of sections is logical. All information occurs at the correct place. Level of detail is appropriate throughout.
	Formulations in the text are often incorrect/inexact inhibiting a correct interpretation of the text.	Vagueness and/or inexactness in wording occur regularly and it affects the interpretation of the text.	The text is ambiguous in some places but this does not always inhibit a correct interpretation of the text.	Formulations in text are predominantly clear and exact. Thesis could have been written more concisely.	Formulations in text are clear and exact, as well as concise.	*Textual* quality of thesis (or manuscript in the form of a journal paper) is such that it could be acceptable for a pear-reviewed journal.

Item	Mark for item					
	2-3	**4-5**	**6**	**7**	**8**	**9-10**
3. Colloquium (5%) *						
3.1. Graphical presentation	Presentation has no structure.	Presentation has unclear structure.	Presentation is structured, though the audience gets lost in some places.	Presentation has a clear structure with only few exceptions.	Presentation has a clear structure. Mostly a good separation between the main message and side-steps.	Presentation clearly structured, concise and to-the-point. Good separation between the main message and side-steps.
	Unclear lay-out. Unbalanced use of text, graphs, tables or graphics throughout. Too small font size, too many or too few slides.	Lay-out in many places insufficient: too much text and too few graphics (or graphs, tables) or vice verse.	Quality of the layout of the slides is mixed. Inappropriate use of text, tables, graphs and graphics in some places.	Lay-out is mostly clear, with unbalanced use of text, tables, graphs and graphics in few places only.	Lay-out is clear. Appropriate use of text, tables, graphs and graphics.	Lay-out is functional and clear. Clever use of graphs and graphics.
3.2. Verbal presentation and defense	Spoken in such a way that majority of audience could not follow the presentation.	Presentation is uninspired and/or monotonous and/or student reads from slides: attention of audience not captured	Quality of presentation is mixed: sometimes clear, sometimes hard to follow.	Mostly clearly spoken. Perhaps monotonous in some places.	Clearly spoken.	Relaxed and lively though concentrated presentation. Clearly spoken.
	Level of audience not taken into consideration at all.	Level of audience hardly taken intro consideration.	Presentation not at appropriate level of audience.	Level of presentation mostly targeted at audience.	Level of presentation well-targeted at audience. Student is able to adjust to some extent to signals from audience that certain parts are not understood.	Clear take-home message. Level well-targeted at audience. Student is able to adjust to signals from audience that certain parts are not understood.
	Bad timing (way too short or too long).	Timing not well kept (at most 30% deviation from planned time).	Timing not well kept (at most 20% deviation from planned time).	Timing is OK (at most 10% deviation from planned time).	Timing is OK.	Presentation finished well in time.
	Student is not able to answer questions.	Student is able to answer only the simplest questions	Student answers at least half of the questions appropriately.	Student is able to answer nearly all questions in an appropriate way.	Student is able to answer all questions in an appropriate way, although not to-the-point in some cases.	Student is able to give appropriate, clear and to-the-point answers to all questions.

Item	Mark for item					
	2-3	**4-5**	**6**	**7**	**8**	**9-10**
4. Examination (5%) *						
4.1. Defense of the thesis	Student is not able to defend/discuss his thesis. He does not master the contents	The student has difficulty to explain the subject matter of the thesis.	Student is able to defend his thesis. He mostly masters the contents of what he wrote, but for a limited number of items he is not able to explain what he did, or why.	Student is able to defend his thesis. He masters the contents of what he wrote, but not beyond that. Is not able to place thesis in scientific or practical context.	Student is able to defend his thesis, including indications where the work could have been done better. Student is able to place thesis in either scientific or practical context.	Student is able to freely discuss the contents of the thesis and to place the thesis in the context of current scientific literature and practical contexts.
4.2. Knowledge of study domain	Student does not master the most basic knowledge (even below the starting level for the thesis).	The student does not understand all of the subject matter discussed in the thesis.	The student understands the subject matter of the thesis on a textbook level.	The student understands the subject matter of the thesis including the literature used in the thesis.	Student is well on top of subjects discussed in thesis: not only does he understand but he is also aware of current discussions in the literature related to the thesis topic.	Student is well on top of subjects discussed in thesis: not only does he understand but he is also aware of discussions in the literature beyond the topic (but related to) of the thesis.

Manual for use of the thesis evaluation form and the MSc-thesis assessment rubric (version 1.1) of Wageningen University

User instructions

- Grading the thesis work is generally done by two persons, the daily supervisor and the second reviewer/examiner. For the sake of grading uniformity, it is highly recommended by the Exam Boards that the second reviewer within a chair group is always the same person. Preferably it is the head of the group.
- The thesis evaluation form has four categories. The research competence category can only be filled in by the daily supervisor as this person has worked with the student. The Thesis report category can most objectively be filled in by the second reviewer who was not involved in the thesis process, as grading the thesis report should not be biased by positive or negative experiences with the student. The daily supervisor who has these experiences can take these into account when grading the research competence.
- Use of the comment fields on the thesis evaluation form is highly recommended. It is an extra feedback for the student.
- The assessment rubric has the form of an analytic rubric (see e.g. Andrade (2005), Reynolds *et al.* (2009), URL1, URL2). Each line discusses one **criterion** for assessment. Each column gives a **level** for the grading. Each cell contains the **descriptor** of the level for that criterion.
- The criteria in the rubric exactly follow the items presented in the Excel worksheet "Thesis evaluation Wageningen University" constructed by the Exam Boards. In a few cases the criteria in the original thesis evaluation document were split into two or more parts because the description of the criteria clearly covered different subjects.
- Since the final mark is composed of so many criteria, the scores on individual criteria should be discriminative. Not all levels are equally broad in marks. Since the final marks of theses usually range between 6 and 9, in the rubric individual levels have been established for the marks of 6, 7 and 8. When performance is at the 9-10 level, decide whether the student is on the low edge (9) or high edge (10) of this level. Descriptions at the 9-10 level tend to describe the ultimate performance (10). Hence, if a student performs well above 8, but below the description at the 9-10 level, a 9 would be the appropriate mark.
- Keep in mind that each line in the rubric should be read independently: it could be that a student scores a 2-3 on one criterion and a 9-10 on another.
- Always start at the lowest mark in the rubric, and test if the student should be awarded the next higher mark. In some cases achievements of a next lower level are not repeated at the higher level (i.e. the lower level achievements are implicit in the higher levels). Furthermore, if a level has a range of marks, choose the most appropriate one (consider the description of the level of performance as a continuum, rather than a discrete description).
- Wherever the student is indicated as 'he', one can also read 'she'.

Remarks

- This rubric has been validated by a number of supervisors by comparing the original grade of a number of theses to the grade resulting from this rubric.

- The main intention of using a rubric is enhance homogeneity of assessments and the ability to communicate about assessments both with students and with colleagues. Furthermore, it clarifies to students the expectations of the supervisor and helps the supervisor to structure feedback during the process of thesis research. Although the intention is to homogenize the process of assessment, it should be noted that even with the use of a rubric some arbitrariness will remain.

- The two main categories on the thesis evaluation form (research competence and thesis report) should have an assessment of 'sufficient' (i.e. ≥ 5.5) before the total thesis work can be considered as sufficient. So, no compensation between these main categories is possible to obtain the lowest final mark of 6.0.
- Please report any positive or negative experiences with and suggestions for the rubric to arnold.moene@wur.nl.

- Author of the rubric: Arnold F. Moene (Meteorology and Air Quality Group, Wageningen University), with valuable contributions from Ellis Hofland, Edwin Peeters, Tamar Nieuwenhuizen, Maarten Holtslag, George Bier, Gerard Ros, Lijbert Brussaard, Judith Gulikers and Paul Berentsen.

References

Andrade, H.G, 2005. Teaching With Rubrics: The Good, the Bad, and the Ugly. *College Teaching* **53**, p. 27-31.

Reynolds, J., R. Smith, C. Moskovitz and A. Sayle, 2009. BioTAP: A Systematic Approach to Teaching Scientific Writing and Evaluating Undergraduate Theses. *Bioscience* **59**, p. 896-903.

URL1: http://jonathan.mueller.faculty.noctrl.edu/toolbox/rubrics.htm (last visited November 17, 2009).

URL2: http://en.wikipedia.org/wiki/Rubric_(academic) (last visited November 17, 2009).