

Assessment report
Limited Framework Programme Assessment

Master Environmental Sciences

Open University of the Netherlands

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1. Executive summary

In this executive summary, the panel presents the main considerations which led to the assessment of the quality of the Master Environmental Sciences programme of Open University of the Netherlands. The programme was assessed according to the standards of the limited framework, as laid down in the NVAO Assessment framework for the higher education accreditation system of the Netherlands, as published on 20 December 2016 (Staatscourant nr. 69458).

The panel considers the programme objectives to be sound and relevant. The programme distinguishes itself by educating students to be able to map, define and research environmental problems and to design interventions to solve these problems, and by training students in a range of academic and professional skills. Students are introduced to both the natural sciences and the social sciences dimensions of environmental and sustainability subjects and problems. The panel regards the programme profile to be relevant, the programme having a position of its own among the academic programmes in Environment and Sustainability Sciences in the Netherlands.

The objectives have been well translated into the intended learning outcomes. These are well articulated and appropriately reflect knowledge and understanding of the domain, research skills and academic and more professional skills. The panel noted the intended learning outcomes to be drafted in 2006 and considers them to some extent outdated. The panel recommends to update them. The intended learning outcomes conform to the master level.

The programme objectives are within the boundaries of the domain-specific reference framework for academic programmes in Environment and Sustainability Sciences. The panel is very positive about the effort by the joint academic programmes in Environment and Sustainability Sciences in the Netherlands to draft this framework and regards this to be a sound and up-to-date description of this domain.

The panel welcomes the regular discussions by programme management with the external Advisory Board to align the programme with the requirements of the professional field. The panel appreciates the programme objectives to train students for positions in this domain.

The panel regards the organisation of the programme to be appropriate.

The number of incoming students was diminishing the last years. Programme management expects the increase in student numbers, which is looked upon favourably by the panel.

The panel is very positive about the contents and coherence of the curriculum. The competencies stated in the intended learning outcomes serve as the framework for the curriculum and are all appropriately addressed in the curriculum. The curriculum adequately balances the cursory components and the Master thesis research parts. The courses are considered by the panel to be solid. The panel regards the study materials and literature to be up to standard, inviting programme management to keep these up-to-date.

The panel noted the vast majority of the lecturers in the programme to have PhDs and to be intensively engaged in current, relevant research. Their educational capabilities are regarded by the panel to be up to standard, as the proportion of BKO-certified lecturers is very substantial. The panel noted the lecturers to be much appreciated by students and to be easily approachable for students.

The panel approves of admission procedures and the admission requirements of the programme and welcomes the pre-master bridging programme, allowing more students to enter the programme.

The panel finds the educational concept of the programme appropriate and welcomes the structuring of tasks in the courses as well as the interaction with lecturers and fellow students, being accommodated by the yOUlearn learning system. The study methods in the programme, being self-study, learning through the yOUlearn learning system, virtual classes and face-to-face education are adequate. The study guidance by the lecturers and the study advisor is satisfactory.

The panel considers the examination and assessment policies for the programme to be up to standard. The position and the authority of the Examination Board are appropriate. This Board is active in monitoring the examinations and assessments quality.

The panel regards the selection of examination methods to be appropriate. The examination methods are in alignment with the course goals.

The panel considers the organisation of the Master thesis project to be up to standard. The supervision of the thesis process is appropriate. The assessment is organised adequately, involving two qualified examiners, who use elaborate scoring forms.

The panel regards the measures taken by programme management to ensure the examinations and assessments quality to be adequate. This may be seen from the introduction of assessment profiles, the peer-review of examinations, the requirements regarding examiners and the usage of answer keys and scoring models. The panel advises to introduce test matrices.

The panel assesses the course examinations to be up to standard. The panel agrees with the grades given by the programme examiners for the Master theses. The subjects covered in the Master theses generally align with the programme domain. Some of these projects were at the boundaries of the domain, although not outside of it. Programme management has implemented a new procedure to make the approval procedures for Master thesis subjects more strict, which is supported by the panel. The panel regards the Master theses to be well-structured and well-written. Programme graduates demonstrate being well-prepared for the professional field, having achieved rather elevated levels of knowledge and skills.

The panel is convinced students completing the programme have reached the intended learning outcomes and considers programme graduates to be very well prepared for positions in this domain on the labour market.

The panel that conducted the assessment of the Master Environmental Sciences programme of Open University of the Netherlands assesses this programme to meet the standards of the limited framework, as laid down in the NVAO Assessment framework for the higher education accreditation system of the Netherlands, judging the programme to be good. Therefore, the panel recommends NVAO to accredit this programme.

Rotterdam, 27 August 2018

Prof. dr. W.A. Hafkamp
(panel chair)

drs. W. Vercooteren
(panel secretary)

2. Assessment process

The evaluation agency Certiked VBI received the request by Open University of the Netherlands to support the limited framework programme assessment process for the Master Environmental Sciences programme of this University. The objective of the programme assessment process was to assess whether the programme would conform to the standards of the limited framework, as laid down in the NVAO Assessment framework for the higher education accreditation system of the Netherlands, published on 20 December 2016 (Staatscourant nr. 69458).

Management of the programmes in the assessment cluster Environment and Sustainability Sciences convened to discuss the composition of the assessment panel and to draft the list of candidates.

Having conferred with management of the Master Environmental Sciences programme of Open University of the Netherlands, Certiked invited candidate panel members to sit on the assessment panel. The panel members agreed to do so. The panel composition was as follows:

- Prof. dr. W.A. Hafkamp, full professor of Environmental Sciences, Erasmus University Rotterdam (panel chair);
- Prof. dr. M.C.E. van Dam-Mieras, emeritus professor Sustainable Development and Educational Innovation, Leiden University (panel member);
- Prof. dr. L. Hordijk, emeritus professor Environmental Systems Analysis, Wageningen University (panel member);
- P. Aarts BSc, student Master Biological Sciences, University of Amsterdam (student member).

On behalf of Certiked, drs. W. Vercoouteren served as the process coordinator and secretary in the assessment process.

All panel members and the secretary confirmed in writing being impartial with regard to the programme to be assessed and observing the rules of confidentiality. Having obtained the authorisation by the University, Certiked requested the approval of NVAO of the proposed panel to conduct the assessment. NVAO have given their approval.

To prepare the assessment process, the process coordinator convened with management of the programme to discuss the outline of the self-assessment report, the subjects to be addressed in this report and the site visit schedule. In addition, the planning of the activities in preparation of the site visit were discussed. In the course of the process preparing for the site visit, programme management and the Certiked process coordinator regularly had contact to fine-tune the process. The activities prior to the site visit have been performed as planned. Programme management approved of the site visit schedule.

Well in advance of the site visit date, programme management sent the list of final projects of graduates of the programme of the most recent years. Acting on behalf of the assessment panel, the process coordinator selected 15 final projects of programme graduates of the years 2013 – 2017. The grade distribution in the selection was ensured to conform to the grade distribution in the list, sent by programme management. No additional criteria applied.

The panel chair and the panel members were sent the self-assessment report of the programme, including appendices. In the self-assessment report, the student chapter was included. In addition, the expert panel members were forwarded a number of final projects of the programme graduates, these final projects being part of the selection made by the process coordinator.

A number of weeks before the site visit date, the assessment panel chair and the process coordinator met to discuss the self-assessment report provided by programme management, the procedures regarding the assessment process and the site visit schedule. In this meeting, the profile of panel chairs of NVAO was discussed as well. The panel chair was informed about the competencies, listed in the profile. Documents pertaining to a number of these competencies were presented to the panel chair. The meeting between the panel chair and the process coordinator served as the briefing for panel chairs, as meant in the NVAO profile of panel chairs.

Prior to the date of the site visit, all panel members sent in their preliminary findings, based on the self-assessment report and the final projects studied, and a number of questions to be put to the programme representatives on the day of the site visit. The panel secretary summarised this information, compiling a list of questions, which served as a starting point for the discussions with the programme representatives during the site visit.

Shortly before the site visit date, the complete panel met to go over the preliminary findings concerning the quality of the programme. During this preliminary meeting, the preliminary findings of the panel members, including those about the final projects were discussed. The procedures to be adopted during the site visit, including the questions to be put to the programme representatives on the basis of the list compiled, were discussed as well.

On 6 April 2018, the panel conducted the site visit on the Open University campus. The site visit schedule was in accordance with the schedule as planned. In a number of separate sessions, the panel was given the opportunity to meet with Faculty Board representatives, programme management, Examination Board representatives, lecturers and final projects examiners, and students and alumni.

In a closed session at the end of the site visit, the panel considered every one of the findings, weighed the considerations and arrived at conclusions with regard to the quality of the programme. At the end of the site visit, the panel chair presented a broad outline of the considerations and conclusions to programme representatives.

Clearly separated from the process of the programme assessment, the assessment panel members and programme representatives met to conduct the development dialogue, with the objective to discuss future developments of the programme.

The assessment draft report was finalised by the secretary, having taken into account the findings and considerations of the panel. The draft report was sent to the panel members, who studied it and made a number of changes. Thereupon, the secretary edited the final report. This report was presented to programme management to be corrected for factual inaccuracies. Programme management were given two weeks to respond. Having been corrected for these factual inaccuracies, the Certiked bureau sent the report to the University Board to accompany their request for re-accreditation of this programme.

3. Programme administrative information

Name programme in CROHO: M Environmental Sciences
Orientation, level programme: Academic Master
Grade: MSc
Number of credits: 60 EC
Specialisations: None
Location: Heerlen (main office)
Mode of study: Part-time, online education (instruction language Dutch and English)
Registration in CROHO: 22NC-60164

Name of institution: Open University of the Netherlands
Status of institution: Government-funded University
Institution's quality assurance: Approved

4. Findings, considerations and assessments per standard

4.1 Standard 1: Intended learning outcomes

The intended learning outcomes tie in with the level and orientation of the programme; they are geared to the expectations of the professional field, the discipline, and international requirements.

Findings

The objectives of this programme are to educate students to be able to scientifically map and define environmental problems (diagnostic competency area), to investigate these problems scientifically and to report on them to informed audiences (research competency area) and to design strategies for sustainable solutions for environmental issues (intervention competency area). In addition, the programme objectives include training students in academic and professional skills, such as collaboration skills in multi- and interdisciplinary teams, reflection on the environmental professional's role and addressing divergent perspectives. The programme may be regarded to be directed to both natural sciences and social sciences. Students are educated to enter the labour market and to take up positions in this domain, such as positions as consultants, policy makers, water or nature managers, corporate officers or researchers and/or to improve their position on the labour market.

The programme objectives have been translated into the intended learning outcomes of the programme. The intended learning outcomes specify knowledge and skills with regard to the three competency areas, allowing students the insights into the nature, extent, causes of environmental issues, research knowledge and skills and professional and academic skills.

Programme management drafted a table from which the correspondence of the intended learning outcomes to the Dublin descriptors for master programmes may be inferred.

The objectives of the programme conform to the domain-specific reference framework for academic programmes in Environment and Sustainability Sciences, which has been drafted by the joint programmes in the Netherlands. In this domain-specific reference framework, reference has been made to international frameworks and benchmark statements. This Open University programme may be regarded to be positioned in the *Natural Systems Emphasis* part of the Environment and Sustainability Sciences domain. The social sciences perspectives are, however, also clearly represented in the programme objectives.

For the programme, an external Advisory Board has been installed. Programme management discusses on a regular basis the programme objectives and curriculum from the professional field perspective with this Board.

Considerations

The panel considers the programme objectives to be sound and relevant. The programme distinguishes itself by educating students to be able to map, define and research environmental problems and to design interventions to solve these problems, and by training students in a range of academic and professional skills. Students are introduced to both the natural sciences and the social sciences dimensions of environmental and sustainability subjects and problems. The panel regards the programme profile to be relevant, the programme having a position of its own among the academic programmes in Environment and Sustainability Sciences in the Netherlands.

The objectives have been well translated into the intended learning outcomes of the programme. These are well articulated and appropriately reflect knowledge and understanding of the domain, research skills and academic and more professional skills. The panel noted the intended learning outcomes to be drafted in 2006 and considers them to some extent outdated. The panel recommends to update them.

The intended learning outcomes conform to the master level. This is exemplified by the Dublin descriptors criteria for master level programmes matching the intended learning outcomes.

The programme objectives are within the boundaries of the domain-specific reference framework for academic programmes in Environment and Sustainability Sciences, this programme having a clear profile within this framework. The panel is very positive about the effort by the joint academic programmes in Environment and Sustainability Sciences in the Netherlands to draft this framework and regards this to be a sound and up-to-date description of this domain.

The panel welcomes the regular discussions by programme management with the external Advisory Board to align the programme with the requirements of the professional field. The panel appreciates the programme objectives to train students for positions in this domain.

Assessment of this standard

These considerations have led the assessment panel to assess standard 1, Intended learning outcomes, to be satisfactory.

4.2 Standard 2: Teaching-learning environment

The curriculum, the teaching-learning environment and the quality of the teaching staff enable the incoming students to achieve the intended learning outcomes.

Findings

The Master Environmental Sciences programme is a programme of the Faculty of Management, Science & Technology of Open University. The Faculty offers four Bachelor and five Master programmes. On behalf of the Dean, the Director of Education is responsible for the quality of this and the other programmes of the Faculty. The programme leader of the Master programme supervises programme contents and programme quality on a day-to-day basis. The programme leader will consult the Curriculum Committee, being composed of all lecturers in the programme, every two months on the programme curriculum. The Programme Committee, consisting of lecturers and students, advises programme management on the programme quality. The Examination Board is responsible for overseeing the quality of examinations and assessments.

The Curriculum Committee, Programme Committee and Advisory Board are shared by this and the Bachelor Environmental Sciences programmes. The Examination Board has the authority for all programmes of the Faculty.

Over the years 2013 to 2017, the number of incoming students was relatively stable at about 15 students per year. The influx of students diminished over the years to recover in 2016 and 2017. Programme management has set the target at 20 incoming students per year.

Programme management presented a table to demonstrate the alignment of the curriculum to the intended learning outcomes. Diagnostic, research and intervention competencies and academic and professional skills are represented in the curriculum. The curriculum consists of the introduction and reflection phase, the differentiation phase and the research phase. The *Introduction and Reflection Phase* (15 EC) consists of three mandatory courses, introducing students to main concepts and teaching them how to structure complex environmental problems, allowing students to work with students from other Universities in European countries in describing, analysing and proposing solutions for a contemporary environmental problem and teaching them to analyse environmental issues in a broader societal context and reflecting on the relation between science and politics. The *Differentiation Phase* (10 EC) allows students to tailor the curriculum to their preferences, selecting courses on climate change, environmental policy in Europe or environmental health sciences. In addition, they may select an elective course from Open University or other Universities. In the *Research Phase*, students draft the Master thesis research proposal (5 EC), write their Master thesis (25 EC), and engage in the process of publication articles based on the outcomes of their Master thesis research (5 EC). Within the curriculum, students are required to perform three tasks, meaning to promote personal reflection.

Prospective students are informed about the programme through the Open University website or the Open University study centres. Students from the Open University Bachelor Environmental Sciences programme are admitted directly. All other applicants must file official requests. The admission committee of the programme, working under the authority of the Examination Board, reviews these requests. Students, having any deficiencies in knowledge or academic skills, may be directed to the pre-master bridging programme. The bridging programme has been introduced only recently and is expected to raise the number of students in the programme.

In the programme, 18 lecturers are involved. Some lecturers have academic positions at other Universities as well. About 78 % of them have PhDs. Final responsibility for courses and examination always lies with a lecturer with a PhD. Lecturers in the programme spend 30 % of their time on research. Most of them are members of the Department of Science within the Faculty. They conduct their research mainly as part of the Faculty research programme, *Learning and Innovation in Resilient Systems*. The proportion of lecturers having obtained BKO-certificates is 89 %. Students expressed to be very content about the teaching capabilities of the lecturers. Lecturers may easily be contacted by students.

The educational concept of the programme is in line with the Open University educational principles, being named NOM (New Educational Model) and implying studying in cohorts, active learning on the part of students, organising courses in well-defined tasks and intensifying moments of contact between lecturers and students and among students.

The study methods are self-study, learning through the Open University learning system yOUlearn and, in each of the 5 EC courses, three virtual classes and one face-to-face session. The learning system includes course schedules, course materials and learning tasks. The system allows to ask questions to the lecturers and to upload assignments and papers. The students-to-staff ratio is 13 : 1 for the Bachelor and Master Environmental Sciences together. Study advisors assist students in designing study paths and selecting electives and in case of other questions or problems. They track students' study progress. The average number of students completing the programme, is about 5 to 10 students per year.

Considerations

The panel regards the organisation of the programme to be appropriate.

Programme management expects the increase in student numbers, which is looked upon favourably by the panel.

The curriculum matches the intended learning outcomes of the programme. The panel is very positive about the contents and the coherence of the curriculum. The competencies stated in the intended learning outcomes serve as the framework for the curriculum and are all appropriately addressed in the curriculum. The curriculum adequately balances the cursory components and the Master thesis research parts. The courses are considered by the panel to be solid. The panel regards the study materials and literature to be up to standard, inviting the programme to keep these up-to-date.

The panel noted the vast majority of the lecturers in the programme to have PhDs and to be intensively engaged in current, relevant research, both at Open University and in other Universities. Their educational capabilities are regarded by the panel to be up to standard, as the proportion of BKO-certified lecturers is very substantial. The panel noted the lecturers to be much appreciated by students and to be easily approachable for students.

The panel approves of admission procedures and the admission requirements of the programme and welcomes the pre-master bridging programme, allowing more students to enter the programme.

The panel finds the educational concept of the programme appropriate and welcomes the structuring of tasks in the courses as well as the interaction with lecturers and fellow students, being accommodated by the yOUlearn learning system. The study methods in the programme, being self-study, learning through the learning system, virtual classes and face-to-face education are adequate. The study guidance by the lecturers and the study advisor is satisfactory.

Assessment of this standard

These considerations have led the assessment panel to assess standard 2, Teaching-learning environment, to be good.

4.3 Standard 3: Student assessment

The programme has an adequate system of student assessment in place.

Findings

The programme examination and assessment regulations correspond to the Open University examination framework and the Faculty assessment policy plan. The Faculty Examination Board has the authority to ensure and monitor the quality of the examinations and assessments of this programme. The chair of the Board has an independent position vis-à-vis the Faculty.

In the courses, examination methods are predominantly assignments. These assignments may be group assignments or individual assignments. One of the courses has a written examination on the basis of multiple-choice database questions.

The Master thesis is the individual final project of the programme. Students draft the research proposal for the thesis in the preceding course. Most Master thesis research projects are done at external institutions. The project is supervised by the external supervisor and the Open University supervisor. The Open University supervisor ensures the academic quality of the project. Supervisors check the thesis subjects to be within the domain of the programme. Students are expected to contact their supervisors for guidance. The Master thesis is graded on the basis of the research process (40 %), written report (50 %) and oral presentation (10 %). The thesis is assessed by two examiners, being the Open University supervisor and the Open University second reader. The second reader may only assess the written report. The examiners use the thesis assessment form, which specifies assessment criteria.

For all of the courses, assessment profiles have been drafted, specifying the relations between course learning goals and examination methods. Test matrices for examinations are not yet implemented. This programme and all other programmes of the Faculty intends to do so per September 2018. In all courses, examinations are peer-reviewed by fellow examiners. The examiners are appointed by the Examination Board and must be BKO-certified. Multiple-choice examinations are generated automatically from a large database of questions and are assessed automatically as well. For open questions examinations and assignments, answer keys and scoring models are drafted. Oral examinations are assessed by two examiners. Calibration sessions for examiners to compare and discuss assessments are scheduled. The Examination Board inspects examinations and theses of this and other programmes every four years. The Board reviews specific types of examinations. Fraud and plagiarism procedures are strict. Cases are handled by the Examination Board.

Considerations

The panel considers the examination and assessment policies for the programme to be up to standard. The position and the authority of the Examination Board are appropriate. This Board is active in monitoring the examinations and assessments quality.

The panel regards the selection of examination methods to be appropriate. The examination methods are in alignment with the course goals.

The panel considers the organisation, supervision and assessment of the Master thesis project to be up to standard. The supervision of the thesis process is appropriate. The assessment is organised adequately, involving two qualified examiners, using elaborate scoring forms.

The panel regards the measures taken by programme management to ensure the examinations and assessments quality to be adequate. This may be seen from the introduction of assessment profiles, the peer-review of examinations, the requirements regarding examiners and the usage of answer keys and scoring models. The panel advises to introduce test matrices.

Assessment of this standard

The considerations have led the assessment panel to assess standard 3, Student assessment, to be satisfactory.

4.4 Standard 4: Achieved learning outcomes

The programme demonstrates that the intended learning outcomes are achieved.

Findings

The panel studied the examinations of a number of courses of the programme as well as a number of Master Theses, being the final projects of the programme.

The average grade for the Master Theses is 7.6 (figure for all graduates from 2013 to 2017). Over the period of 2013 to 2017, eleven or about 35 % of the programme graduates succeeded in having articles published in journals or presented at conferences.

Management of the joint academic programmes in Environment and Sustainability Sciences in the Netherlands very recently conducted a survey among employers of graduates of these programmes. This survey shows graduates of academic programmes in this domain to have at present appropriate job opportunities and career prospects. The survey explains students will continue to have favourable positions on the labour market in the foreseeable future. The survey also shows academic programmes in this domain to adequately prepare students for the professional field in this domain.

Programme management conducted a survey among recent alumni. The alumni were generally content about the results of the programme, as identified by them as personal development opportunities, gain in knowledge, and improved job performance or career chances. Completing the programme opens up job opportunities, the programme graduates told the panel. Although programme management did not systematically survey alumni careers, programme graduates may be said to obtain suitable positions at consultancies, at research institutes, in education or at government agencies. In addition, eight graduates went on to pursue PhD-trajectories, five of whom actually succeeded in obtaining their PhDs.

Considerations

The panel assesses the course examinations, which were reviewed by the panel, to be up to standard.

The panel agrees with the grades given by the programme examiners for the Master theses. The subjects covered in the Master theses generally align with the programme domain. Some of these projects were at the boundaries of the domain, although not outside of it. Programme management plans to make the approval procedures for Master thesis subjects more strict, which is supported by the panel. The panel regards the Master theses to be well-structured and well-written. Programme graduates demonstrate being well-prepared for the professional field and show having achieved rather elevated levels of knowledge and skills.

The panel is convinced students completing the programme have reached the intended learning outcomes and considers programme graduates to be very well prepared for positions in this domain on the labour market.

Assessment of this standard

The considerations have led the assessment panel to assess standard 4, Achieved learning outcomes, to be good.

5. Overview of assessments

Standard	Assessment
Standard 1. Intended learning outcomes	Satisfactory
Standard 2: Teaching-learning environment	Good
Standard 3: Student assessment	Satisfactory
Standard 4: Achieved learning outcomes	Good
Programme	Good

6. Recommendations

In this report, a number of recommendations by the panel have been listed. For the sake of clarity, these have been brought together below.

- To update the intended learning outcomes to better meet the current state of the domain.
- To introduce test matrices for the examinations.
- To improve the alignment of the Master theses with the programme domain, like programme management is planning to do.