

Assessment report
Limited Framework Programme Assessment

Master Environmental Sciences

Wageningen University

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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 Wageningen University. 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 regards the programme objectives as sound and relevant. The programme distinguishes itself from other programmes by educating students to be able to address, analyse and solve complex environmental and sustainability issues and problems from natural, social and technological sciences perspectives. The programme is very interdisciplinary, which is applauded by the panel.

The objectives have been well translated into the intended learning outcomes of the programme. They are formulated in rather precise terms. The panel proposes to phrase the academic skills and self-development learning competencies more explicitly. 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 discussions by programme management with the External Advisory Committee to align the programme with the professional field requirements. The panel appreciates the programme objectives to train students to enter the labour market and to find positions at this level in this domain.

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

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 curriculum reflects the interdisciplinary objectives. The pathways ensure the coherence of the curriculum. The courses are solid. Students are given the opportunity to gain in-depth knowledge and understanding of any one of the ten thesis tracks offered. Although students acquire skills in courses, the Academic Master Cluster and internships, the panel advises to state the contents and goals of the skills and self-development pathways more clearly.

The lecturers in the programme are very motivated and are appreciated by students. They are practically all PhDs and intensively engaged in current, relevant research. Their educational capabilities are regarded by the panel to be up to standard as well. The panel advises to promote SKO-certification among lecturers. Although lecturers within chair groups and across chair groups meet regularly, the attendance of lecturers to the teaching days should be promoted.

The admission requirements and procedures of the programme are adequate.

The panel finds the educational concept and the study methods of the programme adequate, promoting student-activating learning. Study methods and teaching approaches being different across chair groups, the panel proposes to align these, in case of inconsistencies.

Students identify with the programme, though they may be in classes with students from other programmes. The panel advises programme management to investigate new, ICT-based study methods. The students-to-staff ratio and the number of hours of face-to-face education are adequate. The study guidance by the lecturers and the study advisor is appropriate, as is the system for assisting students in selecting the track of their preference. The panel suggests to improve the assistance of international students in finding internships. The panel advises to introduce a tracking system to monitor and improve student study progress. The student success rates are appropriate.

The panel considers the examination and assessment policies for the programme to be appropriate. The Examining Board is in control of the examinations and assessments of the programme.

The panel approves of the examination methods adopted in the programme. The panel approves of the measures taken to counter free riding. The panel proposes to test the academic skills and self-development learning competencies more explicitly and to add formative assessments, such as portfolios.

Students are offered appropriate supervision of both the internship and the Master thesis. The assessment processes are up to standard, involving one examiner with advice from the external supervisor in case of the internship and two examiners in case of the thesis. The assessment of both projects include elaborate scoring forms. The panel advises to add more extensive written comments to the assessment forms to substantiate the grades. The panel suggests to organise calibration sessions across chair groups.

The measures taken to ensure the validity and transparency of examinations and reliability of assessments are adequate. The panel appreciates the chair groups inviting external experts to review the examinations and the Examining Board inspecting the quality of the examinations and assessments of the chair groups. The fraud and plagiarism formalities are up to standard.

The panel regards the course examinations to be up to standard. The panel considers the theses to be very strong in terms of the research conducted and to be very strong scientifically, especially the natural and technological sciences perspectives. The theses are less pronounced in terms of social contexts, but these are more than compensated for in the internships. The panel supports the grades awarded to the Master theses.

The panel is convinced students completing the programme have reached the intended learning outcomes and regards graduates of this programme to be well prepared to enter the labour market and to find suitable positions in this domain. This is substantiated by information collected on graduates' careers.

The panel that conducted the assessment of the Master Environmental Sciences programme of Wageningen University 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, 3 September 2018

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

drs. W. Vercouteren
(panel secretary)

2. Assessment process

The evaluation agency Certiked VBI received the request by Wageningen University 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 Wageningen University, 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. Vercooteren 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 the final projects of 15 graduates from the last two years. The grade distribution in the selection was ensured to conform to the grade distribution in the list, sent by programme management. In the selection, the distribution across the tracks was taken into account.

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 11 and 12 April 2018, the panel conducted the site visit on the Wageningen University campus. The site visit schedule was as planned. In a number of separate sessions, the panel was given the opportunity to meet with Board of Education representatives, programme management, Examining Board members, 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: 120 EC
Specialisations: N.A.
Location: Wageningen
Mode of study: Full-time (language of instruction is English)
Registration in CROHO: 21PI-60810

Name of institution: Wageningen University
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 programme is a two-year, research-based, interdisciplinary Master programme in the environment and sustainability sciences domain.

The programme objectives are to educate students to be able to contribute to sustainable solutions for environmental problems all over the world, taking their social, personal and ethical responsibilities seriously. Students are educated to find effective and innovative approaches to and sustainable solutions for environmental and sustainability problems. Students learn how to address, analyse and solve environmental and societal impacts and socio-economic causes of pollution and environmental degradation. The programme is strongly interdisciplinary, going into the natural sciences, social sciences and technological sciences perspectives of environmental and sustainability problems and integrating these perspectives. Within this domain, students may focus on subjects of environmental quality, systems analysis, environmental policy and economics or environmental technology.

The programme objectives have been translated into the intended learning outcomes of the programme. The intended learning outcomes specify, among others, knowledge and understanding of environmental and sustainability issues, interdisciplinary approaches for solving environmental problems, also in the practice of policy development, research skills, advisory and communication skills, ethical awareness and self-development learning 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 programme may be regarded to be positioned in the *Problem Solving for Sustainability* part, being at the intersection of the *Natural Systems Emphasis*, *Social Systems Emphasis* and *Sustainability Solutions Emphasis* parts of the Environment and Sustainability Sciences domain.

Programme management discusses on a regular basis the programme objectives and curriculum with the External Advisory Committee. This Committee judges the intended learning outcomes of the programme to meet the professional field requirements, especially welcoming the interdisciplinary problem-solving competencies as being very relevant in the professional practice.

Considerations

The panel considers the programme objectives to be sound and relevant. The programme distinguishes itself from other programmes by educating students to be able to address, analyse and solve complex environmental and sustainability issues and problems from natural, social and technological sciences perspectives. The programme may be considered to be very interdisciplinary, which is applauded by the panel. The programme differs from the Bachelor Environmental Sciences programme in aiming to study more complex systems and to be more solutions-oriented.

The objectives have been well translated into the intended learning outcomes of the programme. They cover the programme objectives appropriately. They are generally well articulated and are formulated in rather precise terms, although the panel proposes to phrase the academic skills and self-development learning competencies more clearly.

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 discussions by programme management with the External Advisory Committee to align the programme with the professional field requirements. The panel appreciates the programme objectives to train students to enter the labour market and to find positions at this level 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

Wageningen University is a one-faculty University. The Rector is assisted by the Dean of Research and the Dean of Education. The Dean of Education is the technical chair of the Board of Education. This Board, being composed of four professors and four students, is responsible for all programmes of the Faculty. The Dean of Education is also the head of the Department of Education and Student Affairs, being in this capacity responsible for facilitating education within the University. For this programme as for all other programmes of the Faculty, the Programme Committee is responsible for the contents and the quality of the programme. The Programme Committee is composed of an equal number of staff members and students. This responsibility is subject to the approval of the Board of Education. For each of the programmes, the programme director is responsible for the day-to-day management and support activities of the programme. Courses within the programme are part of the programme curriculum, but all of the courses are taught by chair groups within the University. Chair groups are part of one of the five Science Groups of the University. In chair groups, expertise on specific subjects is clustered. The programme director maintains contacts with chair groups regarding design, contents and quality of the courses they deliver. The learning goals, contents, teaching methods and assessment methods are subject to the approval of the Programme Committee and the Board of Education. Each year, in the Education Modification Cycle, these are discussed. For all of the programmes of the University, four Examining Boards are in place. For this programme, five Bachelor programmes and eight other Master programmes, the Examining Board Environment and Landscape has the authority to ensure the quality of examinations and assessments.

The number of incoming students in the programme was about 140 students in the period of 2013 to 2017, with the exception of 2014 (99 incoming students). The student intake is heterogeneous, being composed of about 40 % of Dutch students, about 20 % of the students coming from other European countries and about 40 % of the students coming from countries outside of Europe.

The curriculum has a study load of 120 EC and takes two years to complete. Programme management presented a table, mapping the intended learning outcomes to the curriculum components. The curriculum has been organised along four separate learning lines or pathways, being the integration, specialisation, skills and self-development pathways. The integration pathway consists of courses, scheduled in the beginning of the programme and the *Academic Master Cluster* (12 EC). In the introductory courses, students have to address and analyse complex environmental problems in small groups, approaching these problems from natural, social and technological sciences perspectives, and are taught research designs and research methods, pertaining to environment and sustainability sciences. In the Academic Master Cluster, students work together with students from other programmes as consultants in multidisciplinary teams on real-world projects for external organisations. In this programme, most students opt for the environment and sustainability version. In the specialisation pathway, students select one of the ten thesis tracks in the programme, offered by the chair groups involved in the programme. The tracks are composed of three to four 6 EC courses, the internship (24 EC) and the Master thesis (36 EC). The last two are scheduled in the second year. Part of the specialisation pathway are courses on research knowledge and skills. In the two to three *Thesis Preparatory* courses, students are prepared for their thesis research project.

The thesis itself is mainly geared towards students' research skills, but also contributes to analytic, communication and reflection skills. In the external internship, students learn to link research to the professional practice. The skills and self-development pathways learning activities include writing, presentation, negotiation and teamwork skills and designing students' own study path. The learning activities of both pathways have been integrated in the courses of the integration and specialisation pathways. In the curriculum, students may take some electives.

Students have opportunities to tailor their curriculum to their preferred orientation. Students may opt for the education or communication orientation, taking courses with this orientation and doing the minor thesis or internship with this orientation. Students may enrol in the Sustainable Development Diplomacy track, having been designed in collaboration with Dutch and international organisations. Students may take the Entrepreneurship Master Track, allowing them to develop as entrepreneurs in this domain. In the Climate-KIC programme, students focus on innovation in this field. Excellent students may take the SENSE honours programme, preparing them for PhDs.

About 82 lecturers are involved in the programme. As has been indicated, courses are offered by chair groups. Lecturers are active researchers, doing research within their chair group. Most lecturers are members of the Wageningen Institute for Environment and Climate Research, which was evaluated very good to excellent on the assessment criteria in the recent research assessment. Lecturers refer to their research in their lectures. About 96 % of the lecturers in the programme have PhDs. The proportion of lecturers being BKO-certified is 67 %. Lecturers within chair groups meet very regularly. Lecturers of different chair groups may teach in courses together. Teacher days are scheduled by programme management, but these are not intensively attended. Students expressed before the panel and in the student chapter to be very appreciative of the teaching qualities of the lecturers and their being easily contacted.

The entry requirements are a relevant Bachelor diploma, reasonable grades and proficiency in English. The admission committee decides about admission, having heard the advice of the study advisor. After having been admitted, students are counselled by the study advisors about the courses to take. Students may take linkage programmes of 12 EC to 30 EC prior to the curriculum to remedy deficiencies, if the deficiencies may be remedied in the linkage programme and if these students reported sufficiently high grades in their prior education.

The programme educational concept is to promote active learning on the part of the students. The study methods adopted in the programme are selected in line with this concept and mostly include lectures, tutorials, lab sessions, group work and practical field work. Courses in the programme may be offered to joint groups of students of different programmes. Programme-specific tutorials are, however, scheduled. The number of hours of face-to-face education in the programme is appropriate. The students-to-staff ratio is 24 : 1. Students are guided through the programme and are advised on choices to be made by the study advisors. Being advised by the study advisor, the Examining Board approves the individual study programmes of students. Early in the first year, students are informed by the chair groups about the tracks offered. In consultation with the study advisors, students decide for one of the tracks. Students find the social sciences courses quite demanding. The student success rates are on average 61 % after two years (figures for 2010 to 2015 cohorts) and on average 85 % after three years (figures for 2010 to 2014 cohorts).

Considerations

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

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 curriculum reflects the interdisciplinary objectives. The pathways in the curriculum ensure the clear organisation and the coherence of the curriculum. The courses are solid. Students are given the opportunity to select one of the ten thesis tracks, allowing them to gain in-depth knowledge and understanding about any one of these specialisations. Although students acquire skills in courses, the Academic Master Cluster and internships, the panel advises to state the contents and goals of the skills and self-development learning pathways more clearly.

The panel regards the lecturers in the programme to be very motivated and to be appreciated by the students. They are practically all PhDs and they are intensively engaged in current, relevant research, referring to their research in their lectures. Their educational capabilities are regarded by the panel to be up to standard as well, although the proportion of BKO-certified lecturers may be increased. The panel advises to promote SKO-certification among lecturers. Although lecturers within chair groups and across chair groups meet regularly, the teaching days organisation should be improved to attract more lecturers.

The admission requirements and procedures of the programme are adequate.

The panel finds the educational concept and the study methods of the programme adequate, promoting student-activating learning. Study methods and teaching approaches being different across chair groups, the panel proposes to align these, in case of inconsistencies. Students identify with the programme, although they may be in classes with students from other programmes. The panel encourages programme management to investigate new, ICT-based study methods. The students-to-staff ratio and the number of hours of face-to-face education are adequate. The study guidance by the lecturers and the study advisor is appropriate, as is the system for assisting students in selecting the track of their preference. The panel suggests to improve the assistance of international students in finding internships. The panel advises to introduce a tracking system to monitor and improve student study progress. The student success rates are appropriate.

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.
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Findings

The examinations and assessments in the programme are governed by the Education and Examination Regulations of Wageningen University and the Rules and Regulations of the Examining Boards of the University. As has been indicated, the Examining Board Environment and Landscape has the authority to ensure the quality of examinations and assessments of the programme.

Examination methods in the programme include written examinations, individual and group assignments, reports of practical exercises and field work. Examination methods are selected to conform to the course goals. In most courses, multiple examinations are scheduled, to allow for different course goals to be adequately assessed. In case of group assignments, peer review among students is taken into account to counter free-riding effects. The Examining Board checks the peer review reports and ensures group work not to have too much weight in the final grades for the courses.

At the start of the internship, the external and internal, university supervisors are appointed. They decide on the internship goals. At the end the university supervisor assesses the internship results, taking the advice of the external supervisor into account. The Master thesis is an empirical study in the field of the specialisation or thesis track. Thesis processes are monitored by thesis coordinators in chair groups. The thesis process extends over thesis preparatory courses and the thesis writing process itself. In the thesis process, students are guided by their supervisor. In some of the chair groups, students take part in thesis rings. In thesis rings, students comment on each others thesis work in progress, being guided by staff members. The theses are assessed on the basis of the written report, a presentation of colloquium and the final discussion between student, supervisor and second reader. The assessment is based upon the research competencies (30 % to 60 %), the written report (30 % to 60 %), the colloquium (5 %) and the final discussion (5 %). The weights are determined within the chair group and depend upon the nature of the thesis. The thesis is assessed by the supervisor and the second reader, using both a scoring form and a rubrics form. The supervisor and second reader may add comments. Theses assessments are calibrated within chair groups, but as a rule not in calibration sessions across chair groups.

In the programme, measures are taken to ensure the validity, reliability and transparency of examinations and assessments. The Examining Board appoints the examiners, who should be involved in the courses as lecturers or coordinators and who should be BKO-certified. Every four to five years, the Examining Board reviews the examinations and assessments of each of the chair groups, contributing to the programme, to verify if these meet quality requirements. Every two to three years, each of the chair groups invites external experts to review the course contents and the course examinations. The grade distributions of examinations and theses are submitted to the Examining Board. The Board will inspect the examinations in more detail in case of deviant distributions. Examiners are required to present model answers, assessment criteria and rubrics to substantiate the assessments and grades given. Students may inspect their own work and may request feedback on their work. The Examining Board handles cases of fraud or plagiarism and imposes sanctions. The number of cases in this programme has been very low.

Considerations

The panel considers the examination and assessment policies for the programme to be appropriate, these being in line with the Wageningen University rules and regulations. The position and authority of the Examining Board for this programme are adequate, the Board being in control of the examinations and assessments of the programme.

The panel approves of the examination methods adopted in the programme, as these are consistent with the goals and the contents of the courses. The panel considers the measures taken to counter free riding to be adequate. The panel proposes to test the academic skills and self-development learning competencies more explicitly and to add formative assessments, such as portfolios.

The supervision and assessment procedures of both the internship and the Master thesis are adequate. Students are offered appropriate supervision. The assessment processes are up to standard, involving one examiner with advice from the external supervisor in case of the internship and two examiners in case of the thesis. The assessment of both projects are conducted, using elaborate scoring forms. The panel advises to add more extensive written comments to the assessment forms to substantiate the grades. The panel suggests to organise calibration sessions across chair groups.

The measures taken to ensure the validity and transparency of examinations and reliability of assessments are adequate. The panel appreciates the chair groups inviting external experts to review the examinations and the Examining Board inspecting the quality of the examinations and assessments of the chair groups. The fraud and plagiarism formalities are up to standard.

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.

The panel also reviewed the Master theses of fifteen graduates of the programme with different grades. All tracks were evenly represented in this sample.

In the Master thesis, students have to demonstrate being able to design, plan and execute research in their specialisation or thesis track field. The entire research cycle is to be covered. The average grade for the Master theses is 7.6 (figure for all graduates from 2015 to 2017).

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.

Figures about this programme, gathered for the period 2003 to 2016, show graduates of this programme to find positions in education and research (32 %), consultancy (21 %), trade and industry (19 %) or government (14 %). Graduates find suitable jobs rather easily. About 18 % of the programme graduates continue their careers with PhDs.

Considerations

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

The panel supports the grades awarded to the Master theses. The theses certainly were not graded too high. The panel considers the theses to be very strong in terms of the research conducted and to be very strong scientifically, especially with regard to the natural and technological sciences perspectives. The theses are less pronounced in terms of social contexts, but these are more than compensated for in the internships.

The panel is convinced the students completing the programme have reached the intended learning outcomes and regards the graduates of this programme to be well prepared to enter the labour market and to find suitable positions in this domain. This is substantiated by information collected on graduates' careers.

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 phrase the academic skills and self-development competencies more clearly in the intended learning outcomes, to state the contents and the goals of these skills and competencies more clearly in the curriculum and to test them more explicitly.
- To promote SKO-certification among lecturers.
- To promote lecturers attending the programme teaching days.
- To align study methods and teaching approaches in the programme across chair groups, in case of inconsistencies.
- To investigate new, ICT-based study methods.
- To improve the assistance to international students in finding internships.
- To introduce a tracking system to monitor and improve student study progress.
- To add more extensive written comments to the assessment forms of Master theses to substantiate the grades.
- To organise calibration sessions about thesis assessments across chair groups.