Assessment report
Limited Framework Programme Assessment

**Master Chemistry**

University of Groningen

***Contents of the report***

# 1. Executive summary

In this executive summary, the panel presents the main considerations which led to the assessment of the quality of the Master Chemistry of the University of Groningen. 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 vision of the programme is to deliver chemists to the job market that are highly employable and knowledgeable and skilled in the core of chemistry as well as at the interface with adjacent disciplines (physics/materials, biology and chemical engineering). The programme aims to deliver exceptionally well-trained graduates. The panel considers the objectives of the programme to be sound and relevant. The programme is typically research-driven, with a strong focus on qualifying its students for professional and academic research. The learning outcomes are an adequate reflection of the objectives of the programme. They are geared towards pursuing a career in the industry or as a PhD student, are up to date, fit within relevant international frameworks and meet the academic requirements for a master in the field of chemistry.

The programme consists of common courses on Reaction Mechanisms, Structure Determination with Spectroscopic Methods, the Colloquium and the Final Exam, and five tracks: Advanced Materials; Chemical Biology; Catalysis and Green Chemistry; Science, Business and Policy track; and the Erasmus Mundus programme in Theoretical Chemistry and Computational Modelling. The curriculum complies with the intended learning outcomes. The tracks fit in the structure of the programme.

The content of the curriculum and the course materials are up-to-standards, or exceeding these. The educational methods are adequate. The programme pays much attention the development of research skills; students devote at least 50% of their time to research, especially in the master's Research project.

The admission requirements and admission procedures of the programme are well elaborated and appropriate. The programme has set reasonable admission criteria.

The programme is doable; the dropout is comparable to other programmes. The system of tutoring and the individual study plan are beneficial to the feasibility of the programme. To prevent delay or dropout, students are required to submit a study plan shortly after starting the programme. The panel appreciates the personal attention paid to the students' progress.

The lecturers are highly motivated and well appreciated by the students. Teachers are mainly drafted among researchers from the Stratingh Institute for Chemistry and adjacent institutes. All lecturers have a PhD and are actively involved in research. The research of the Stratingh Institute has been evaluated as excellent in the most recent research review. This academic track record clearly benefits the curriculum. Also, the didactical capabilities of the teachers are up-to-standard as demonstrated by the percentage of lecturers with a university teaching qualification. The number of teachers is currently adequate, but the panel wants to point out that the availability of teaching assistants at lab courses is a point of concern.

The examination and assessment policies are adequate. The Board of examiners is functioning corresponding to its formal tasks and takes its responsibility seriously. The Board has adequate procedures in place to ensure the validity and the reliability of assessments, exemplified by the course unit assessment overview and the peer review of assessments. The course unit assessment overviews and assessment matrices of the current courses are well elaborated and satisfactory. The reviewed assignments and tests are up to standard and reflect the desired level.

The assessment plan consists of a substantive final exam: an oral exam testing the ability of students to integrate their knowledge of general Chemistry. This is a unique feature of the programme. The panel has established that the purpose of the final exam is transparent to students and lecturers. Both seems to appreciate it.

The panel confirms that the learning outcomes are realized. The panel has reviewed fifteen final theses and concludes that they clearly demonstrate the intended level of the programme. The panel notes room for improvement in enhancing the consistency of the grading of the final thesis, as examiners can now give different weights to the items within a category on the assessment form. The panel also recommends that the first and second examiner of the thesis need to make independent judgments.

The panel also considers the satisfaction among alumni and representatives of the professional field an indication that the programme meets the demands of the professional field and that students achieve the desired level. Graduates of the programme appear to be in high demand. A recent survey shows 79% of the graduates had a job lined up immediately after graduating. 55% of the graduates continue in academia. The survey among alumni revealed that they rate the learning outcomes of the programme favourably: graduates appreciate the practical, transferable and theoretical skills and the level to which the programme prepares for their jobs.

The panel that conducted the assessment of the Master Chemistry programme of the University of Groningen 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, March 16th, 2019

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| Prof. dr. M.A. Cohen Stuart<br>(panel chair) | T.T. Lamers MSc<br>(panel secretary) |

## 2. Assessment process

The evaluation agency Certiked VBI received the request by University of Groningen (UG) to support the limited framework programme assessment process for the Master Chemistry 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 Chemistry and Chemical Engineering convened to discuss the composition of the assessment panel and to draft the list of candidates.

Having conferred with the management of the Master Chemistry programme of the University of Groningen, 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. M.A. Cohen Stuart, professor emeritus, chair of Physical Chemistry & Colloid Chemistry, Wageningen University, professor emeritus of Physical Surface Chemistry, University of Twente, professor East China University of Science and Technology, Shanghai, China (panel chair);
- Prof. dr. A.H.T. Boyen, associate professor emeritus, Faculty of Sciences and Bio-engineering Sciences, Faculty of Medicine and Pharmacy, Vrije Universiteit Brussel (panel member);
- Prof. dr. R.M.J. Liskamp, professor, chair Chemical Biology and Medicinal Chemistry, School of Chemistry, University of Glasgow, United Kingdom, professor of Molecular Medicinal Chemistry, Utrecht University (panel member);
- Prof. dr. ir. G.B. Marin, professor of Chemical Reaction Engineering, head Laboratory for Chemical Technology, Ghent University (panel member);
- Prof. dr. Valter Castelvetro, Professor in Industrial and Macromolecular Chemistry, University of Pisa (panel member);
- Prof. dr. Leonard Prins, professor of Organic Chemistry, University of Padova (panel member);
- Dr. P. Berben, senior research manager BASF, member leadership team BASF De Meern (panel member);
- A.E.M. Melcherts BSc, student Master Chemical Sciences: Nanomaterials Science, Utrecht University (student member).

On behalf of Certiked, drs. W. Vercouteren served as the process coordinator and T.T. Lamers MSc (independent advisor) as 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 theses of graduates of the programme of the last two complete years. Acting on behalf of the assessment panel, the process coordinator selected 15 final theses from this list. The grade distribution in the selection was ensured to conform to the grade distribution in the list, sent by the programme management.

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 theses of the programme graduates, these final theses 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 secretary discussed the self-assessment report provided by programme management, the procedures regarding the assessment process and the site visit schedule. 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 discussion 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 10 and 11 January 2019, the panel conducted the site visit on the University of Groningen campus. The site visit schedule was in accordance with the schedule as planned. In separate sessions, the panel was given the opportunity to meet with Faculty Board representatives, programme management, Examination Board representatives, lecturers 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. After correcting these factual inaccuracies, the final report was established by the chair at March 16th, 2019. Subsequently, the Certiked bureau sent the report to the University Board to accompany their request for re-accreditation of this programme.

# 3. Programme administrative information

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| Name programme in CROHO: | Chemistry |
| Orientation, level programme: | Academic Master |
| Grade: | MSc |
| Number of credits: | 120 EC |
| Tracks: | Advanced Materials, Catalysis and Green Chemistry, Chemical Biology, Theoretical Chemistry and Computational Modelling (Erasmus Mundus), Science Business and Policy |
| Location: | Groningen |
| Mode of study: | Full-time (language of instruction: English) |
| Registration in CROHO: | 21PC-66857 |
| | |
| Name of institution: | University of Groningen |
| 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

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| 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 vision of the programme is to deliver chemists to the job market that are highly employable and knowledgeable and skilled in the core of chemistry as well as at the interface with adjacent disciplines (physics/materials, biology and chemical engineering). The programme aims to deliver exceptionally well-trained graduates. Upon attaining their degree they are well prepared for jobs in industry or for a continuation in academia as PhD students.

Thus the programme has the objective that its graduates are able to carry out fundamental or applied scientific research in chemistry, as well as applying state-of-the-art scientific knowledge of chemistry in a wide variety of new practical situations. Besides, graduates have developed skills, knowledge and insight in a specialization area within the field of chemistry, with a focus on insight into and modes of approach to scientific problems. Furthermore, graduates should be able to clearly and concisely communicate their acquired knowledge to others, thus being able, for example, to work in a multi-disciplinary environment.

The management states that the programme roughly distinguishes itself from other programmes by building on reaction mechanisms and spectroscopy as a common core, but also featuring tracks that link to the adjacent disciplines mentioned above. This diversity of topics is supported by the spread of the research groups that cover a broad spectrum of chemistry.

The programme has defined its intended learning outcomes, specified by general academic skills and specific Chemistry-related knowledge and skills. The level of the programme is reflected in these learning outcomes and demonstrates that graduates have gained advanced academic skills and knowledge, and are able to function autonomously.

The programme shows how the learning outcomes relate to the internationally accepted descriptions for the Master's level, as demonstrated by the Dublin descriptors. Furthermore, it shows how the learning goals are aligned with, or exceeding criteria described in the Chemistry EuroMaster, a European framework describing the general contours of a chemistry Master programme.

*Considerations*
The panel considers the objectives of the programme to be sound and relevant. The programme is typically research-driven, with a strong focus on qualifying its students for professional and academic research.

According to the panel, the learning outcomes are an adequate reflection of the objectives of the programme. The intended learning outcomes are geared towards pursuing a career in the industry or as a PhD student. The learning outcomes are up to date and reflect current developments in the field of chemistry. They also fit within relevant international frameworks and meet the academic requirements for a master in the field of chemistry. This is exemplified by matching the Dublin descriptors for the master programme, the demands for the Chemistry EuroMaster and the Dutch national domain-specific framework.

The panel notices that the research focus is dominant in the intended learning outcomes. The programme has only limited objectives to also train for positions within business, societal organizations or secondary education.

The panel appreciates the broad nature of the programme, covering all relevant topics within the field of Chemistry, and the interdisciplinary learning outcomes. The panel feels it is comparable with some other master programmes in the field of chemistry in the Netherlands, and advises to make an explicit comparison with other programmes (inter)nationally, so the programme can sharpen its own profile.

*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

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| 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 programme consists of common courses on Reaction Mechanisms, Structure Determination with Spectroscopic Methods, the Colloquium and the Final Exam, and five tracks. Three of them are Advanced Materials, Chemical Biology, and Catalysis and Green Chemistry, which are aligned with the research foci defined in the nation-wide sector plans Physics and Chemistry. Besides, students can opt for the Science, Business and Policy track, which however attracts only very few students from the Master Chemistry.

The University of Groningen offers also a track in Theoretical Chemistry and Computational Modelling through an Erasmus Mundus programme. The curriculum of this programme is different, because of its focus on theoretical/computational chemistry. Furthermore, students complete an intensive course on theoretical chemistry and computational modelling, jointly with students from the other participating universities (Catholic University of Leuven; Autonomous University of Madrid; Universities of Perugia, Porto, Toulouse and Valencia) and students perform their research project abroad at one of these partner universities.

The programme has presented the mapping of the intended learning outcomes with the course unit, which demonstrates all learning outcomes are covered.

The programme mainly pays attention to research skills, in contrast to the Bachelor in Chemistry which focuses on practical skills. Students devote at least 50% of their time to research, especially in the master's Research project. Also employability is receiving attention, but the results of a recent questionnaire show this is not always visible to the student.

The methods used in the curriculum are primarily oral lectures and tutorials. In addition, practical courses entailing written reports on the experiments and oral communication are often employed modes of instruction. Staff is now experimenting with different methods like online voting and flipped classrooms.

Both staff and students regard the programme as intensive but feasible. Dropping out occurs only incidentally and is often the result of specific personal circumstances. According to the students, a careful planning is essential to prevent any delay. Students are therefore required to submit a study plan shortly after starting the programme. And as the research project appeared to be a major source of delay, students also need to draw up a plan for the project with their supervisors, specifying start and end dates.

Students with a Bachelor's degree in Chemistry from a university in the Netherlands are routinely accepted. The admission of students from other Dutch degree programmes (such as molecular biosciences, university colleges, etc.) as well as international students is by decision of the Admissions Board and is based on the goals and relevance of the curriculum of the completed Bachelor's degree programme, the applicant's academic record, research experience and proficiency in English. There is a special programme of 30 ECTS for students who come directly from a University of Applied Science (HBO) to remedy any deficiencies before entering the programme.

Students get guidance by the academic advisor in planning of the master programme. Furthermore, several meetings are organized to help students making informed choices regarding their track choice and future career.

Teachers are mainly drafted among researchers from the Stratingh Institute for Chemistry, but also from the Zernike Institute for Advanced Materials, the Engineering and Technology Institute Groningen and the Groningen Biomolecular Sciences and Biotechnology Institute. All lecturers have a PhD and are actively involved in research. According to the information of the management, about one in four academics associated with the programme have received ERC grants, moreover [redacted] was recipient of the Nobel Prize in Chemistry in 2016. The research of the Stratingh Institute has been evaluated as excellent in the most recent research review.

Most of the staff members (80%) have a university teaching qualification (UTQ). Of the staff members who do not, the majority have only recently been appointed and are currently in the process of attaining this qualification. As a rule, at least one of the examiners of each course unit has obtained the UTQ.

According to the recent Dutch national student survey (NSE), 92% of the students are (very) satisfied with the staff of the programme.

The student to staff ratio is 15:1 for the academic year 2018-2019.

According to the management and teachers, the workload of individual teachers has increased substantially due to the recent rise in bachelor and master student numbers in both the Chemistry and Chemical Engineering programmes. The panel learnt from the discussions that the increase could pose a risk in the near future to the supervision of practicals (due to lack of lab space and PhD students to supervise). Management is aware of the teacher's workload.

During research projects students are provided with a fully equipped work space in the lab and have access to state-of-the-art research equipment. The programme management is considering several scenarios about the development of the student population size, to be able to continue the provision of sufficient facilities (lab infrastructure, etc.).

*Considerations*
The panel has established that the curriculum of the programme complies with the intended learning outcomes. The panel has reviewed the curriculum and course materials and concludes that they are up-to-standard or exceeding it. The courses are solid, well balanced and provide in-depth knowledge and skills in the field of Chemistry.

The panel regards the tracks on Advanced Materials, Chemical Biology, and Catalysis and Green Chemistry and the Erasmus Mundus programme to fit in the structure of the curriculum. The track on Science, Business and Policy is faculty-wide offered, but attracts hardly any students from this programme.

The panel finds the educational methods of the programme adequate, promoting student-activating learning, and aligned with the demands of the student population.

The admission requirements and admission procedures of the programme are well elaborated and appropriate. The programme has set reasonable admission criteria. Based on the interviews with students, the panel has established that their ambition fits with the programme and the information provided by the study programme ensures the right expectations by students.

The panel considers the programme doable; the dropout is comparable to other programmes. The system of tutoring and the individual study plan are beneficial to the feasibility of the programme. The panel appreciates the personal attention paid to the students' progress.

The panel regards the lecturers of the programme as highly motivated and to be well appreciated by the students. The teaching staff has an excellent academic track record, which clearly benefits the curriculum. Also, their didactical capabilities are up-to-standard as demonstrated by the percentage of lecturers with a UTQ. The number of teachers is currently adequate, but the panel wants to point out that the availability of teaching assistants at lab courses, is a point of concern.

Overall, the panel regards the teaching and learning environment as surpassing common levels, in particular due to the content of the courses, the structuring of the tracks, the personal attention with regard to the study plan, and the excellent track record of the staff.

*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 programme has formulated its principles with regard to assessment: different forms of assessment are used, the mode(s) of assessment match the nature of the course unit, the academic skills are all assessed, and the assessment provides feedback to the teachers.

The programme has an assessment plan, which comprises the learning outcomes of the programme, the examiners and modes of assessment of all course units, a list of individual research project supervisors, and a matrix clarifying the relationship between the learning outcomes and the course units of the curriculum.

For each course, a course unit assessment overview is available, which comprises a systematic description of the links between learning outcomes, modes of instruction and modes of assessment and marking, as well as the students' backgrounds and the position of the course unit within the curriculum.

The programme aims to ensure the quality of each test by means of a test matrix and peer review. The use of a test matrix is required for each course. Teachers told the panel they appreciate this. And as a rule, exams and assignments are always drafted or checked by two lecturers (peer review) to ensure that the exam questions are clear, unambiguous and sufficiently assess whether the various learning outcomes of the course unit have been attained.

The assessment plan consists of a substantive final exam. It takes place as an oral exam testing general understanding of Chemistry, so not repeating the content of individual courses, but assessing the ability of students to integrate their knowledge of general Chemistry. The final exam is scheduled upon request by the student, usually half a year before graduating. It takes one hour and is carried out by three professors, who also give immediate feedback after the exam. The student gets additional education if any deficiencies are found. The panel has learnt that lecturers and students consider the final exam as a license of passage. Lecturers especially note the opportunity to assess the students' overview over the field of study, while students note that the final exam is also a good preparation for tests of general chemical knowledge, as happens in the industry (for example, in job interviews).

The Board of Examiners deals with all four programmes in the field of Chemistry and Chemical Engineering. The Board has intensified its proceedings since the previous audit. Three years ago, also an external member with educational expertise was added to the Board. The Board has taken measures to ensure the quality of the assessment. For example, the Board has set guidelines regarding oral assessment, stipulating that a transcript must be made. The Board annually checks the assessments of a number of course units; each course is checked once in three years. Furthermore, the Board is yearly reviewing a sample of theses. In its latest review, the Board has found that supervisors of theses could elaborate more on the justification of marks on the assessment form; it has asked for attention to this.

Besides, the Board of Examiners has to give its approval to any individual deviation from the structure of the programme and ensures all learning objectives have been met. This especially concerns students who go studying abroad; approval needs to be requested (and granted) beforehand. In addition, the committee conducts an individual check six months before graduation to determine whether all qualifications will be met, so as to avoid any surprises. In case of any deficiencies, students have sufficient time for remedies.

*Considerations*
The panel considers the examination and assessment policies for the programme as adequate. The Board of examiners is functioning corresponding to its formal tasks and takes its responsibility seriously.

According to the panel, the Board of Examiners has procedures in place to ensure that the validity and reliability of assessments are adequate. This is exemplified by the course unit assessment overview and the peer review of assessments. The panel has reviewed the course unit assessment overviews and assessment matrices of the current courses and finds them well elaborated and satisfactory.

The panel has also reviewed assignments and considers them to be up to standard. The tests clearly reflect the desired level.

The panel has learnt the final exam is testing the ability of students to integrate knowledge on chemistry. This is a unique feature of the programme. The panel has established the purpose of the final exam is transparent to students and lecturers, and that both seem to appreciate it.

The panel concludes that the assessments are valid, reliable and sufficiently independent. The quality of interim and final examinations is sufficiently safeguarded. The system of assessment properly determines whether students have attained the intended learning outcomes.

*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. |
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*Findings*
The programme demonstrates the achievement of the learning outcomes by the final theses and by the success of graduates in their following study or career.

The final thesis is based on an individual research project. The average grade for Master research projects was 7.9.

The programme uses a form for assessment of the thesis. The form comprises a grading scheme. Two assessors make the evaluation and fill in the form after debating the examination. If any external supervisor is involved, he or she has only an advisory role and can give written comments, while the final decision and the grading is done by the examiner of the programme.

A survey was conducted among the 80 most recent alumni. Of the respondents 79% had a job lined up immediately after graduating. 55% of the graduates continue in academia, even in the increasingly international PhD job market. About two thirds of them choose to pursue a PhD in Groningen.

The survey among alumni revealed that they rate the learning outcomes of the programme favourably: graduates appreciate the practical, transferable and theoretical skills, and the level to which the programme prepares for their jobs.

The members of the external Advisory Board, appear to be satisfied with the level of the graduates. Graduates of the programme are well appreciated by the professional field.

*Considerations*
The panel has reviewed fifteen recent final projects and determines that they all clearly demonstrate the intended level of the programme. The panel considers these theses as very solid, they show both good theoretical reasoning and experimental work.

The panel has concluded that the assessment forms are completed. Assessors use the same form, with a fixed weight for the different categories of assessment. The panel has noticed room for improvement in the accumulation of the items within the categories. Apparently, different examiners can give different weights to the items within a category on the assessment form. The panel recommends improving the consistency of this.

In addition, the panel recommends that the first and second examiners make independent judgments, by each filling in an assessment form before debating the final grading. This increases the effect of the four eyes principle.

Furthermore, the panel considers the achievement of the intended learning outcomes as demonstrated by the enrolment in (prestigious) PhD programmes and their entrance to the labour market as trained professionals. Graduates of this programme appear to be in high demand.

The panel recommends the programme management to get more data on the career paths of alumni, to allow better judgement of achieved learning outcomes.

*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 |
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| 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 make an explicit comparison with other programmes (inter)nationally, to sharpen the profile of the programme.
- To assure the availability of teaching assistants, even in the context of increasing student numbers.
- To improve the consistency of the grading of the final thesis, as examiners can now give different weights to the items within a category on the assessment form.
- To have the first and second examiner of the final thesis make independent judgments, by each filling in an assessment form prior to debating the final grading.
- To gather more data on the career paths of alumni.