Hobeon

ASSESSMENT REPORT

Limited programme assessment

Master programme
Applied Nanotechnology
Full time

Saxion University of Applied Sciences

De kracht van kennis.

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ASSESSMENT REPORT

Limited programme assessment

Master programme
Applied Nanotechnology
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Saxion University of Applied Sciences

Croho registration: 49097

Hobéon Certificering
9th of April 2021

Audit Committee
Ir. A.T. de Bruijn
MSc. F. Feenstra
Prof.dr.ir.J.E. ten Elshof
BSc. K. Verhagen

Secretary / co-ordinator:
V. Bartelds MBA

CONTENT

1. GENERAL AND QUANTITATIVE DATA

Name Institution	Saxion University of Applied Sciences
Status	Funded body for higher education
Outcomes of Institutional Quality Assessment	Positive
Name of programme in Central Register of Higher Professional Education (CROHO)	Applied Nanotechnology
ISAT-code CROHO	49097
Domain/sector croho	Techniek
Orientation and level	Professional
Level	Master
Orientation and level	Master of Science
Number of credits	120 EC
Location	Enschede
Variant	Full-time
Language	English
Date site visit	8th and 14th of January 2021

2. SUMMARY

Nanotechnology is a field of expertise that is combining aspects of engineering and life sciences. Graduated bachelor students of Applied Sciences from both fields form the influx of the programme, together with a limited number of foreign students. The master programme of Applied Nanotechnology is unique in The Netherlands and plays a pioneering role in this upcoming expertise.

Standard 1. Intended Learning Outcomes

The nano-engineer solves or contributes to advanced design problems, selecting and executing (advanced) analysis methodologies, and dealing with complex structures, or questions in which several disciplines are incorporated like electrical engineering, physics, chemistry, mechanical engineering and biology.
The intended learning outcomes of the programme are clustered around the following competences:

- The ability to improve and innovate within a new or unfamiliar environment
- To analyze an engineering problem in the field of micro/nano technology
- To design an engineering solution that deals with different system of an applied product or process
- To implement a product, system or process that fulfils specific requirements
- To independently guide the students professional development

Research is of imminent importance in this programme. Throughout the curriculum research competences are instrumental for every student.

Internationalization is on the one hand an extremely obvious aspect of the programme.
The niche field of nanotechnology is international by nature: literature and professional context transcend all borders. On the other hand the programme expresses the ambition to further exploit the added value of internationalization: the benefits of an international classroom and the intercultural competences that enhance the students possibilities in the globalized workfield in nanotechnology.
The audit panel is convinced that the programme fulfils the professional demand for nanotechnological engineers in this region and specific industry. The niche character of this programme is typical for technological innovation, according to the auditors. The close cooperation with academic education, the research groups of Saxion and the employers that cofounded this programme in 2016 are clear indicators of a real need for applied nanotechnology master graduates.
The programme balances both the interdisciplinary width and in-depth expertise and thus intends to train T-shaped professionals.
The intended learning outcomes seamlessly reflect the Master level and orientation, bridging the academic research and the needs of the professional field. The learning outcomes have been formulated in close ties with them and are subject of discussion constantly.
As nanotechnology is a very specific expertise, the benchmark is international by nature, for example supported by the influx of foreign students.
Therefore the audit panel judges the programme meets the requirements of this standard.

Standard 2. Teaching-learning environment

The audit panel considers the curriculum design and didactical approach fitting for the professional master level enabling students to reach the intended learning outcomes.
The auditors appreciate the challenge for the programme to integrate students from different bachelor programmes and cultural backgrounds into a functioning learning community. Both by the documentation, the study products and the conversation with students and staff the audit

panel has been fully convinced that the curriculum is both challenging and supporting the development of students towards the intended level of achievements.
The team of lecturers and staff is very committed, both to the programme, other lecturers, the professional field and most importantly to the participating students. The qualification level and international experience of lecturers safeguard the proficiency in English. The audit panel appreciates the in-depth expertise of the teaching team and the intertwining of the research groups forms an asset of the programme.
The limited size of the programme in students and teaching team entails vulnerability concerning career changes and illness.
The audit panel experienced an approach towards internationalization that can be intensified.
The auditors deem the physical facilities of the programme as state-of-the-art.
Information availability and student counselling are up to standards and the bond with the programme of students is generally strong. The audit panel supports the view of the student counsellor that guidance of master students is different from bachelor students, but not unnecessary.
Therefore the audit panel judges the programme meets the requirements of this standard.

Standard 3. Student assessment

In general the system of assessment is satisfactory. The panel met qualified examiners, intrinsically motivated both to safeguard the professional and educational standards and to support and provide the students they assess with formative feedback. The audit panel asks attention to the vulnerability of the multitude of combined tasks in a small learning community. The consistent assessment system, the quality of the assessments and the intrinsically motivated approach towards assessment, combined with the strong examination board convinces the audit panel that the programme meets the requirements of this standard.

Standard 4. Achieved learning outcomes

The audit panel considers the graduation projects reflecting the international master level in the professional context. The intended profile of innovation was visible in the graduation projects. Professional partners of the programme were important actors in the national and regional context and expressed their satisfaction with the programme. Their enthusiasm showed in hiring multiple alumni.
The audit panel weighs its own judgement of the graduation projects, combined with the satisfaction of employers and alumni, and judges the programme meets the requirements of this standard.

Recommendation
The audit panel recommends the programme to broaden its cooperation with other institutes, academically and professionally, especially abroad. The current close regional ties are very beneficial for the programme but it is a small group in an international environment of specialists. By broadening the basis of the programme it would become more interesting for foreign students and less vulnerable because of the small size of the programme.

Overall conclusion:

The programme of Applied Nanotechnology functions truly in line with the ambition: bridging the academic progress with the needs of the professional context for executive application in product development.

The panel evaluates all Standards as meeting the requirements. Hence, following NVAO regulations the overall judgement on the Master Programme of Applied Nanotechnology of Saxion University of Applied Sciences reads: positively meeting the requirements.

Therefore, the panel recommends the NVAO to award accreditation for another six years to the Master Programme of Applied Nanotechnology of Saxion University of Applied Sciences.

Upon agreement with the panel members the chair adopted this report on the 9th of April 2021.

3. INTRODUCTION

The programme Applied Nanotechnology is unique in The Netherlands, pioneering and developing this niche expertise. The programme has close ties to the regional professional field and the University of Twente. The programme has started in 2016 and trains students in demand by the professional field. Nanotechnology is multidisciplinary by nature, as it is based on the interplay between physics, chemistry, biology and electrical engineering. The nano-engineer solves or contributes to advanced design problems, selecting and executing (advanced) analysis methodologies, and dealing with complex structures, or questions in which several disciplines are incorporated like electrical engineering, physics, chemistry, mechanical engineering and biology.
The programme resorts under the School of Lifesciences, Engineering and Design and attracts students from both the Life Sciences and the engineering bachelor educations. The programme is unique in the Netherlands and does attract students from outside the EU. In 2020 the number of incoming foreign students was limited, due to covid-related travel restrictions.
The audit of the programme was conducted online in January of 2021. The panel had sessions with management on the 8th of January and the other stakeholder groups on the 14th of January.

4. FINDINGS AND JUDGEMENTS

4.1. Intented learning outcomes

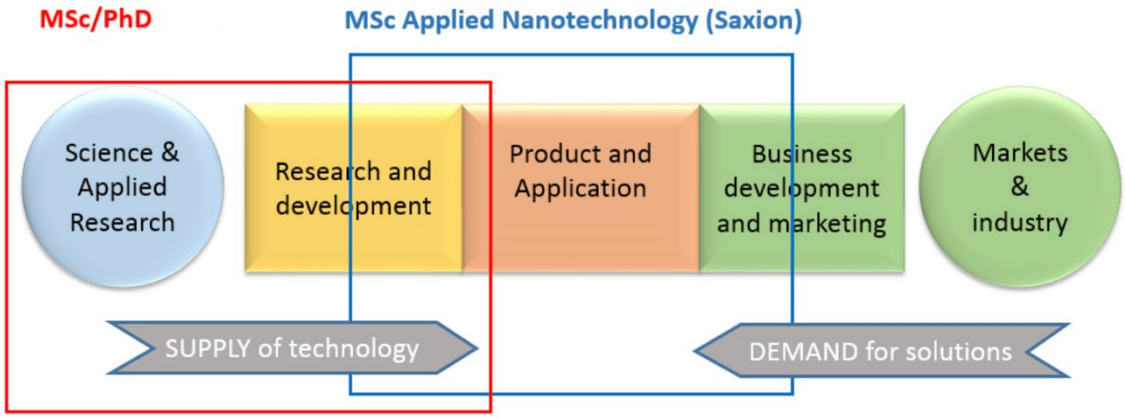
Standard 1: The intended learning outcomes tie in with the level and orientation of the programme; they are geared to the expectations of the professional field, the discipline, and international requirements.

Explanation: The intended learning outcomes demonstrably describe the level of the programme (Associate Degree, Bachelor's, or Master's) as defined in the Dutch Qualifications Framework, as well as its orientation (professional or academic). In addition, they tie in with the regional, national or international perspective of the requirements currently set by the professional field and the discipline with regard to the contents of the programme. Insofar as is applicable, the intended learning outcomes are in accordance with relevant legislation and regulations.

Findings

The nano-engineer solves or contributes to advanced design problems, selecting and executing (advanced) analysis methodologies, and dealing with complex structures, or questions in which several disciplines are incorporated like electrical engineering, physics, chemistry, mechanical engineering and biology.
Nanotechnology is a field of expertise that is positioned between engineering and life sciences. Graduated bachelor students from both fields form the influx of the programme, together with a limited number of foreign students.

The professional orientation of the master programme is strengthened by the close cooperation with the academic research master of the University of Twente. Employers involved with students of both programmes distinguish and appreciate the skills and solution oriented approach of the Saxion students.
The professional field is closely involved with the development of the master programme. In the covid year 2020 contacts were less frequent for obvious reasons but audit panel observed the commitment of the employers has not faltered.
The intended learning outcomes do reflect the EQF master level and the Dublin descriptors and the programme aims to bridge the gap between academic research and professional application.



The intended learning outcomes of the programme are clustered around the following competences:

- The ability to improve and innovate within a new or unfamiliar environment
- To analyze an engineering problem in the field of micro/nano technology
- To design an engineering solution that deals with different system of an applied product or process
- To implement a product, system or process that fulfils specific requirements
- To independently guide the students professional development

The position of imminent importance in this programme. Throughout the curriculum research competences are indispensable for every student.

Internationalization is on the one hand an extremely obvious aspect of the programme.
The niche field of nanotechnology is international by nature: literature and professional context transcend all borders. On the other hand expresses the programme the ambition to further implement the more philosophical aspects of internationalization: to exploit the benefits of an international classroom and the intercultural competences that enhance the students possibilities in the globalized workfield in nanotechnology.

Saxion University of Applied Sciences has developed and is implementing a renewed approach to higher education, called the Saxion Educational Model (2020). Key objectives are: Student success, Connection with and relevance for the region and the regional work field, The ability of students to continue to develop sustainably based on their own professional identity and The smart and effective development of education.

Considerations and Judgement

The audit panel is convinced the programme fulfils the professional demand for nanotechnological engineers in this region and specific industry. The niche character of this programme is typical for technological innovation, according to the auditors. The close cooperation with academic education, the research groups of Saxion and the employers that cofounded this programme in 2016 are clear indicators of a real need for applied nanotechnology master graduates.
The programme balances both the interdisciplinary width and in-depth expertise and thus intends to train T-shaped professionals.
The intended learning outcomes seamlessly reflect the Master level and orientation, bridging the academic research and the needs of the professional field. The learning outcomes have been formulated in close ties with them and are subject of discussion constantly.
As nanotechnology is a very specific expertise, the benchmark is international by nature, for example supported by the influx of foreign students.

Judgement
The panel therefore considers Standard 1 to be positively meeting the requirements.

4.2. Teaching-learning environment

Standard 2: The curriculum, the teaching-learning environment and the quality of the teaching staff enable the incoming students to achieve the intended learning outcomes.

Explanation: The intended learning outcomes have been adequately translated into educational objectives of (components of) the curriculum. The diversity of the students admitted is taken into account in this respect. The teachers have sufficient expertise in terms of both subject matter and teaching methods to teach the curriculum, and provide appropriate guidance. The teaching-learning environment encourages students to play an active role in the design of their own learning process (student-centred approach). If the programme is taught in a language other than Dutch, the programme must justify its choice. This also applies if the programme bears a foreign language name. The teaching staff must have a sufficient command of the language in which they are teaching. Services and facilities are not assessed, unless they have been set up specifically for the programme concerned.

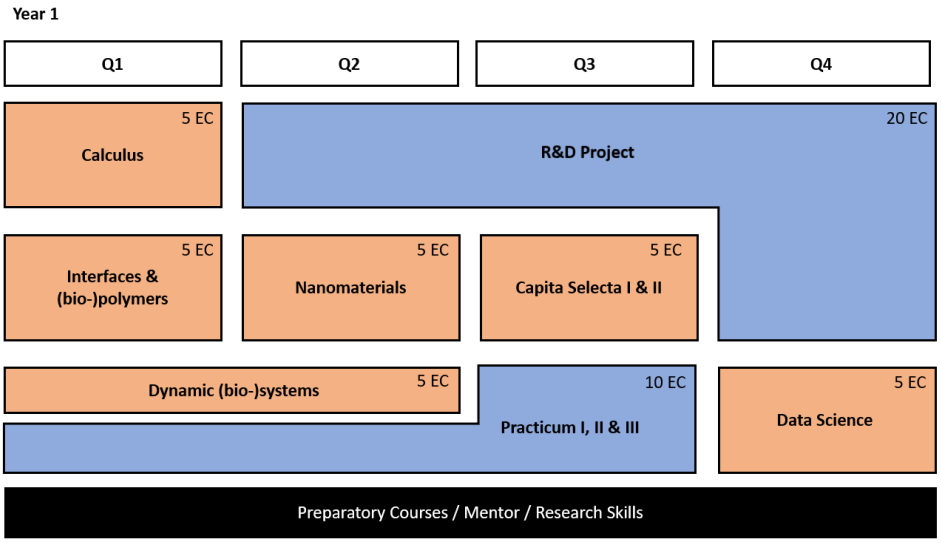
Findings

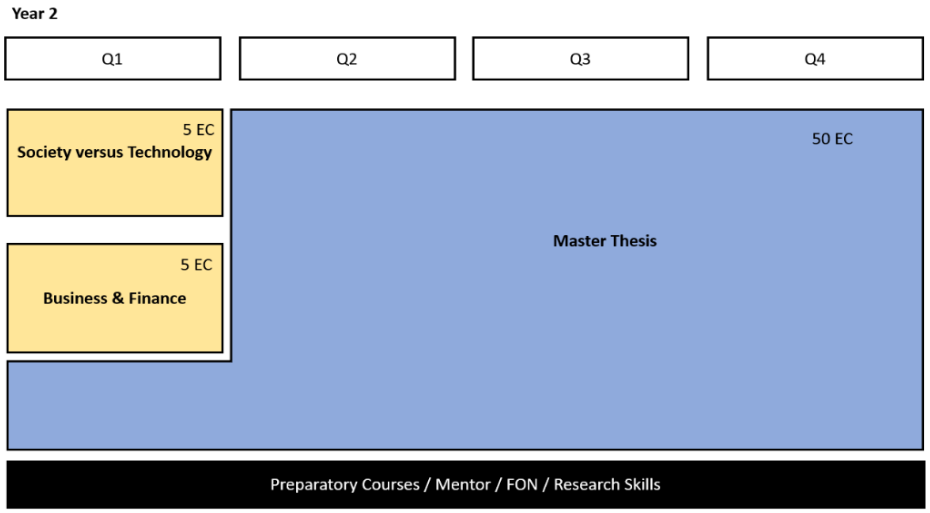
The teaching methods are tailored to critical professional situations in the field. The programme describes the mechanisms used to develop a coherent and topical curriculum.
The Saxion Educational Model has been launched quite recently (September 2020) and is primarily focussed on bachelor education. The master programme of Applied Nanotechnology is in the starting phase of implementing this policy into the curriculum. The implications of the Model are considered to be limited. Some of the aspects (catering for regional professional needs) have been the building stones of the young programme, other aspects (e.g. ownership of the study process) are difficult to implement given the requirements of the professional field, the integration of engineering and life science students and the two-year curriculum.

The body of knowledge, skills and attitude the programme is based upon covers the intended learning outcomes fully and is appropriately challenging for all incoming students, foreign and domestic, engineering and life science bachelors alike. The description of learning goals in specific modules is quite limited and can be further operationalized.
The programme's main challenge is to reach an in-depth communal basis for all students within a limited timeframe. In the panel discussions the students and alumni recognized this challenge. For engineering students the chemical and biological subjects are relatively new and challenging, the life sciences students are out of their comfort zone in Dynamic (bio)Systems. Students told the audit panel the programme lived up to their expectations concerning the body of skills and knowledge.
Alumni stressed that getting up to speed in less familiar subjects was their own responsibility while the programme is now facilitating precourse training.

The curriculum of the programme consists of eight quarterly blocks. The first three blocks focus on acquiring skills and knowledge in the field of calculus, interfaces-phenomena, properties of (bio-)polymers and modelling of dynamic (bio-)systems as well as on gaining laboratory experience. This shared knowledge basis enables students to work together irrespective of their bachelor studies in engineering or life sciences. Capita selecta provide students with customizing their curriculum with topics of their choice.
In the R&D individual projects students are conducted full studies under supervision of the research groups Nano Bio Interface or Nano Physics Interface. A nice example of the innovative nature of these R&D projects is the High Precision Assembly and Photonics project in close cooperation with the Fraunhofer Project Centre of the University of Twente. As the margins for error are shrinking in the fabrication and assembly of automotive parts, medical components and robotics itself, the project contributes in automated assembly while aligning each component individually.

The second year of the programme is largely dedicated to the master thesis, based upon a complex nanotechnological problem executed in a professional environment, be it a company or a research institute.





After the creation of the communal knowledge base the programme moves to integration of learning tracks in complex professional situations.
Both the horizontal and vertical coherency of the curriculum has been developed in cooperation with both students and the professional field.

The instructional language of the programme is English. For the students, lecturers and the professional partners this is not an issue of debate because the whole field of nanotechnology is international and English speaking. It would be quite a challenge to provide theory or textbooks in any other language.

Since students of Applied Nanotechnology are highly in demand the programme schedules classes mostly on three days per week and provides students with online availability of lectures to facilitate study relevant part time jobs of students.

Covid
The efforts to facilitate blended learning are very beneficial and appreciated by students, especially in these pandemic times. The programme has effectively supported the study progress of students in challenging circumstances. The programme is dealing with consequences of lockdown periods like a very limited number of foreign students being able to enter the programme due to travel restrictions. In the Covid period more Saxion bachelor students could enter because they were able to finish their bachelor graduation in the summer period. But this also means that the summer preparation of incoming students on less familiar topics has suffered.

The teaching team is inherently small and therefor vulnerable, but highly qualified and very committed to the student group. Virtually all staff members have a PhD, experience in an international environment and didactical qualifications like BDB and assessment training BKE. Students, both in panel conversations and in teacher evaluations, express appreciation for the supportive approach of the lecturers.

Facilities are extremely important for technical programmes like Applied Nano. The Saxion programme facilitates access to state-of-the-art laboratories, both within Saxion as in the cooperation with Twente University.
Student counselling is deemed very important by the programme, especially in Covid-times. Both students and staff are involved in maintaining the learning community and guide individual students in their study progress. The combination of student counsellor and programme manager is deemed vulnerable.

Considerations and Judgement

The audit panel considers the curriculum design and didactical approach fitting for the professional master level enabling students to reach the intended learning outcomes.
The auditors appreciate the challenge for the programme to integrate different bachelor students into a functioning learning community. Both in the documentation, the study products and in the conversation with students and staff the audit panel is fully convinced the curriculum is both challenging and reflects the development of students towards the intended level of achievements.
The audit panel realizes that in this pandemic year the close contact with the professional partners has not been as intense as usual. The panel does encourage the programme to structure the feedback on curriculum and intended learning outcomes further. When the informal contacts are hampered, the structural ones are very beneficial to ensure constant adaptation in a highly versatile environment like nano.

The team of lecturers and staff is very committed, both to the programme, other lecturers, the professional field and most important to the participating students. The qualification level and international experience of lecturers safeguard the proficiency in English. The audit panel appreciates the in-depth expertise of the teaching team and the intertwining of the research groups and the programme. The limited size of the programme and teaching team entails vulnerability concerning for instance career changes and illness.
In general some aspects of the learning environment can be organized more structurally to diminish the vulnerability of the small size and pioneering programme.

The audit panel experienced an approach towards internationalization that can be intensified. The programme seems to see English and international orientation as a necessary tool considering the niche topic of study. The auditors feel that a more intercultural approach would benefit the students even more, preparing them for the globalized workplace.
In this respect it would be advisable according to the audit panel to widen the trusted home base of Nanotechnology. The near partners in both academic education and professional friends

are not withstanding partnerships abroad. This would strengthen the scope of the programme and the reciprocal benefits of internationalization.

The physical facilities of the programme are state-of-the-art and need no further explanation. Information availability and student counselling are up to standards and the bond with the programme of students is generally strong. The audit panel supports the view of the student counsellor that guidance of master students is different from bachelor students, but not unnecessary.

The audit panel would like to express its appreciation and admiration of the student counselling and team interaction in the Covid-period. During the time of the (online) visitation the region of Saxion was heavily hit by the pandemic. The staff were clearly concerned for and committed to their colleagues and students.

The panel therefore considers the programme meeting the requirements of Standard 2.

4.3. Student assessment

Standard 3: The programme has an adequate system of student assessment in place.
Explanation: The student assessments are valid, reliable and sufficiently independent. The requirements are transparent to the students. The quality of interim and final examinations is sufficiently safeguarded and meets the statutory quality standards. The tests support the students' own learning processes.

Findings

The programme provides in assessing students by means of a coherent set of exams and other assessments and a culture supporting feedback enhancing quality assurance. The programme has internally audited its assessments and improved the consistency between assessors as a result.
The philosophy of the master programme is that central in assessment is the handling of complex, multifaceted, quintessential problems in professional praxis. In the starting phase of the programme assessments function to reach an equal knowledge base between life sciences and engineering. These assessments are less complex and clearly reliable and valid.
In the more complex assessments staff and students have been working at the inter assessor reliability in calibration and intervision.
Assessment matrices are in use for written tests, reflecting the weight as described in the Body of Knowledge, Skills and Attitude. Specific learning goals are rather implicit in course descriptions.

Assessors are assigned by the Exam Board and all assessors are BKE-qualified. Using two assessors (4-eyes) is implemented in all complex assignments. Students are sufficiently satisfied on the quality, transparency and predictability of assessment. The transparency is also supported by the examination plan that explains the setup of assessments during the curriculum.

The programme envisions changes to be made in examination during the further implementation of the Saxion Educational Model.

Graduation
The graduation assignment of the programme covers 50 of the 60 EC in the second year. Students conduct an individual assignment within a company or research institute, working on an empirical question (in most cases a nanotechnological design issue) that tests their ability to perform a holistic, research-based analysis.
Elements that are assessed during graduation are Project Plan (requiring approval), Implementation, Report and Presentation. An essential element of the Project Plan is a comprehensive theoretical basis for the execution phase of the project.
The company supervisor of the student advises the graduation committee, with special attention to the functioning of the student in a professional context. The programme wants to register the feedback of the company supervisor in a more structural way, following recommendations of internal auditing. The small team of graduation assessors is vulnerable: specific expertise available at the moment could be hard to replace if needed in the future. Calibration between assessors is in place.
The programme is shifting gradually towards the assessment on a more process-oriented level, for instance judging the relevance of sources more than judging the quality of the content itself. This enables supervisors to assess a broader scope of topics than their own in-depth expertise.
The Central Examination Board is well in position. The external board member of the University of Twente delegates the calibration to the specialists in the nanotechnological department.
Both the forms used for graduation assessment and the feedback of the assessors corresponded with the audit panels remarks. The grading of the assessors did not deviate more than one point of the auditors judgement.

Covid
The limited number of students (24 in 2019) enables the programme staff to intensify counselling of students in covid-times. This includes contacts with company supervisors to see whether and how delays for students can be avoided or mitigated. Company visits are often replaced by online discussions with the student and company supervisor. Sometimes presentations and defence are held online as well. The audit panel is convinced during the visitation talks with examiners and the examination board that the bar is not lowered while trying to facilitate alternative assessment. The students the audit panel met said that they would be offended if graduation would be easier due to covid. The management of the programme specifically mentioned the excellent motivation of the master students.

Considerations and Judgement

In general the system of assessment is satisfactory for the audit panel. The panel met qualified examiners, intrinsically motivated both to safeguard the professional and educational standards and to support and feedforward the students they assess. The audit panel calls attention to the vulnerability of the multitude of combined tasks in a small learning community.
The consistent and ambitious assessment system and the intrinsically motivated approach towards assessment, the quality of the assessments combined with the strong examination board convinces the audit panel that the programme meets the requirements of this standard.
The intended changes towards more assessment on meta-levels is understandable and wise according to the audit panel, considering the size of the programme and the level of specialism in an innovative niche. The audit panel advises to address the role of the external member of the examination board in this respect.
Graduation assessment functions well according to the auditors. Calibration among assessors might benefit by a more rubric-oriented approach.

The panel therefore considers Standard 3 to be positively meeting the requirements.

4.4. Achieved learning outcomes

Standard 4: The programme demonstrates that the intended learning outcomes are achieved.
Explanation: The achievement of the intended learning outcomes is demonstrated by the results of tests, the final projects, and the performance of graduates in actual practice or in postgraduate programmes.

Findings

The audit panel scrutinized all twelve graduation dossiers available. The auditors judged all works reflecting the intended learning outcomes and meeting their professional benchmark for the master level of Applied Nanotechnology.

Employers of alumni and other representatives of the professional field are very satisfied with the general level of graduate students and can clearly distinguish student of the programme from for instance academic master students of the University of Twente. Especially the clear perspective on the work in the field made an impact. Some employers preferred Applied Nano-students over research masters for their ability to do lab work at a high execution level and their practical approach to practical challenges.

Alumni considered themselves well prepared to their careers and expressed their appreciation for the international approach and close cooperation with academic research and the professional field.

Considerations and Judgement

The audit panel weighs the graduation projects reflecting the international master level in the professional context. The intended profile of international innovation was visible in the graduation projects.
Professional partners of the programme were important actors in the national and regional context and expressed their satisfaction with the programme. Their enthusiasm showed in hiring multiple alumni.
The auditors judge that the achieved learning outcomes truly reflect the intended profile of graduates bridging the academic approach with the needs of professional praxis. Considering the pioneering position of the programme quite an achievement.
The audit panel considers its own judgement of the graduation projects, combined with the satisfaction of employers and alumni, and judges the programme meets the requirements of this standard.

5. OVERALL CONCLUSION

The programme of Applied Nanotechnology functions truly in line with the ambition: bridging the academic progress with the needs of the professional context for executive application in product development.

The panel evaluates all Standards as meeting the requirements. Hence, following NVAO regulations the overall judgement on the Master Programme of Applied Nanotechnology of Saxion University of Applied Sciences reads: positively meeting the requirements.

Therefore, the panel recommends the NVAO to continue the accreditation for the Master Programme of Applied Nanotechnology of Saxion University of Applied Sciences.

6. RECOMMENDATIONS

The audit panel recommends the programme to broaden its cooperation with other institutes, academically and professionally, especially abroad. The current close regional ties are very beneficial for the programme. Expanding this network with foreign educators can strengthen the international benchmark, the availability of internships and sharing teaching expertise. By broadening the basis of the programme it would become even more interesting for foreign students and less vulnerable because of the small size of the programme in number of students.

The auditors feel that the intended intercultural approach towards internationalization would benefit the students, preparing them for the globalized workplace.

The audit panel encourages the programme to safeguard the intertwinement of the research groups with the programme. It's a crucial strength of this pioneering programme.

ANNEX I Overview of judgements

Overview of the panels judgements **Saxion University of Applied Sciences** **hbo-master course Applied Nanotechnology** full time	
Standaard	**Oordeel**
Standaard 1. Intented learning outcomes	P
Standaard 2. Teaching-learning environment	P
Standaard 3. Student assessment	P
Standaard 4. Achieved learning outcomes	P
Overall judgement	**Positive**

ANNEX II Programma of site-visit

Programma: hbo-masteropleiding Applied Nanotechnology – Saxion University of Applied Sciences – 8th and 14th of January 2021.

Working methods

Selection of the delegations / the auditees
In compliance with the NVAO regulations the audit panel prior to the audit decided on the composition of the delegations (auditees) in consultation with the course management and on the basis of the points of focus that had arisen from the panel's analysis of the course documents.

Starttijd	***Onderwerpen***	***Deelnemers[1]***	***Rol binnen de opleiding***
	8th of January		
12.45 – 14.00	Positionering		Management
	14th of January 2021		
9:15	Discussie visitatiepanel.		
9:45	Actualiteit, (doorvertaling) visie, toetsing, kwaliteitsborging, verbinding lectoraten en gerealiseerd eindniveau.		Curriculum Commissie Afstudeercommissie Examencommissie
10:30	Discussie visitatiepanel.		
11:00	Rondetafelgesprek met studenten.		Studenten uit het eerste en tweede leerjaar
11:45	Discussie visitatiepanel & lunchpauze.		
13:00	Rondetafelgesprek met docenten.		Docenten en de voorzitter van de opleidingscommissie
13:45	Discussie visitatiepanel.		
14:15	Gesprek panel met werkveld en alumni over gerealiseerd eindniveau en de oriëntatie van opleiding.		Alumni Leden uit het werkveld
15:00	Discussie visitatiepanel.		
15:30	Ruimte voor een additionele sessie en/of pending issues.		
16:00	Feedback visitatiepanel.		

[1] For privacy reasons, the names are not included in this report. The names of auditees are known to the secretary of the audit panel.

An ‘open consultation session’ was scheduled as part of the site-visit programme. The panel verified that the scheduled times of the consultation session had been made public to all parties involved in the school community in a correct and timely manner.

Auditing process
The following procedure was adopted. The panel studied the documents regarding the programme (see Annex Documents reviewed) and a number of theses. The panel secretary organised input from the auditors and distributed the preliminary findings among the panel members prior to the audit. A preparatory meeting of the panel was held before the online site visit, on the 8th and 14th of January 2021 (see Annex: Programme of the site visit).

The panel formulated its preliminary assessments per theme and standard immediately after the site visit. These were based on the findings of the site visit, and building on the assessment of the programme documents.

A first version of the assessment report was drafted by the secretary and circulated among the members of the panel for review and comments. The final draft was subsequently forwarded to the institute to correct factual inaccuracies.

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Assessment rules
According to the NVAO assessment rules a standard meets, partially meets or does not meet the score. Hobéon applied the decision rules, as listed in the "Assessment Framework for higher education accreditation system Netherlands, September 2018.

Final conclusion
Positive:
The programme meets all the standards.

ANNEX III List of documents examined

List of documents examined

- Self-evaluation Report institute
- Saxion Educational Model 2020
- Staff (policy) plan
- Services and facilities plan
- Examination plan
- Education and Examination Regulations 2020/2021
- Body of Knowledge, Skills and Attitude
- Quality assurance plan;
- Policy plan regarding the accessibility and feasibility of the programme for students with functional disability;
- Summary and analysis of recent evaluation results and relevant management information;
- Documentation regarding student and staff satisfaction;
- Reports on consultations in relevant committees / bodies;
- Test questions with corresponding assessment criteria and requirements (answer models) and a representative selection of actual tests administered (such as presentations, work placements, portfolio assessments) and assessments;
- All available final projects, selected by the panel, of the past two years with corresponding assessment criteria and requirements;
- Reference books and other learning materials.
- List of all twelve final projects/papers examined prior to the audit:

Following NVAO regulations the panel prior to the audit the panel has studied twelve students' final projects. For privacy reasons, the names of these graduates and their student numbers are not included in this report. The names of the graduates, their student number, as well as the titles of the final projects, are known to the secretary of the audit panel.

ANNEX IV Composition of the audit panel

Name visitation group:	HBO Ma Applied Nano (unique)

Succinct resumes of participating panel members:

Name	Succinct CVs
Ir. A.T. de Bruijn (chair)	Zelfstandig adviseur op gebied van onderwijs en onderzoek. Tot juni 2020 adviseur, kwartiermaker en leadauditor bij Hobéon.
MSc. F. Feenstra	Docent Bio-informatica bij het instituut voor Life Science & Technology van de Hanzehogeschool Groningen.
Prof.dr.ir. J.E. ten Elshof	Hoogleraar Anorganische Materiaalkunde en Lid opleidingsdirecteur B Chemical Science & Engineering en M Chemical Engineering Universiteit Twente.
BSc. K. Verhagen	Student aan de masteropleiding Molecular Life Science van de Hogeschool van Arnhem en Nijmegen.

V. Bartelds MBA	NVAO-getraind secretaris/ certified secretary

Prior to the audit all panel members undersigned declarations of independence and confidentiality which are in possession of the NVAO. This declaration certifies, among other things, that panel members do not currently maintain or have not maintained for the last five years any (family) connections or ties of a personal nature or as a researcher/teacher, professional or consultant with the institution in question, which could affect a fully independent judgement regarding the quality of the programme in either a positive or negative sense.

On 29th of September 2020 the NVAO endorsed the composition of the panel to assess the Masterprogramme Applied Nanotechnology of the University of Applied Sciences Saxion (009894).

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