



Saxion University of Applied Sciences

M Innovative Textile Development

Limited study programme assessment

Summary

In May 2021 the Master programme Innovative Textile Development was online assessed by an audit panel from NQA. The fulltime 90 EC programme is taught in English at the main location of Saxion in Enschede. The audit panel assesses the quality of the study programme as **positive**. The small international study programme is characterized by its focus on textile technology in relation to innovation and sustainability. The international student population it attracts, reflects the international character of the textile industry. Student numbers have increased over the years, but the maximum capacity of twenty-four has not yet been reached. A substantial part of the practice-oriented curriculum consists of project centered education. In these projects students work in groups on real life assignments from the industry. The study programme provides students with current and challenging questions, by making use of its excellent relation with the work field, together with the network of the research group Sustainable & Functional Textiles. The content of the programme is relevant for current and future developments in the sector. The facilities of Saxion offer students a state-of-the-art and stimulating learning environment. An enthusiastic team of lecturers with a variety of disciplinary backgrounds forms the backbone of the study programme. Students feel seen and the panel got the impression the study programme provides an informal and pleasant learning climate. The panel is of the opinion that one of the main challenges of the study programme is to direct the focus in the graduation phase more towards applied research, in which students learn to use academic publications and work along academic standards, without becoming academic researchers themselves. The panel supports the quest of the study programme to redesign the graduation phase with regard to the products with which students demonstrate they master the competences. An important point of improvement in the eyes of the panel is the execution of the assessments with respect to the handling of assessment forms and the transparency with respect to feedback. Graduates are employed in a broad range of positions and roles in the textile industry. The panel considers the Saxion master programme an asset to higher education in the Netherlands in textile and technology.

Standard 1: Intended Learning Outcomes

The study programme **meets** the generic quality requirements for standard 1.

The study programme is aimed at educating professionals at master level with knowledge of textiles, innovation, sustainability and related business models. Students are prepared for a wide range of positions in the textile sector. In the opinion of the panel bringing more focus to the professional profile is desirable, thus managing expectations of both work field and students. The intended learning outcomes are formulated as competences and originate from the national set of competences of the domain of Creative Technologies. These competences are lined up with the Dublin descriptors for master level. The relation with the work field is excellent when it comes to cooperation regarding assignments, projects and facilities. The panel recommends the programme to involve the work field on a structural basis in curriculum development, with the eye on changing demands and current developments in the work field.

Standard 2: Teaching-Learning Environment

The study programme **meets** the generic quality requirements for standard 2.

The curriculum of the programme is in line with the didactic concept and matches master level. The content of the courses is considered relevant and challenging by students. The structure of the curriculum is provided through three lines: the project line, the textile line and the paper line.

In the project line students learn hands-on to apply their research skills, by working in groups on a practice-oriented problem. Research and analysis are explicitly addressed in the paper line, in which the emphasis lies on academic writing. The panel supports the idea of converting the paper line into a research line, broadening the focus towards the development of other research skills in addition to writing. Students receive different forms of coaching, by lecturers as well as peers. The study programme relies strongly on the responsibility and initiative of students with regard to coaching. The panel agrees that this is in line with what may be expected from a master student. The staff have an adequate academic background and are competent regarding the level of English. The ties with the research group Sustainable & Functional Textiles are strong and the expertise on research of lecturers is sufficient for a master programme. The international student population offers students a learning environment which requires the development of intercultural skills, resembling the international character of the textile industry.

Standard 3: Student Assessment

The study programme **meets** the generic quality requirements for standard 3.

Assessment is in line with the Saxion vision and policy on assessment. The study programme uses various forms of assessment which match with the practice-oriented didactic concept. The assessment of group work includes individual components, thus guaranteeing the assessment of individual achievements of students. The panel recommends the study programme to pay more attention to filling out the assessment forms and giving elaborate feedback to students. With written feedback in combination with structurally programmed oral feedback sessions, students gain insight in their development and points of improvement. Concerning assessment and the design of the graduation phase, the panel supports the idea to introduce professional products, in which the focus lies more on the application of research. The panel recommends introducing a grading system in the graduation phase that differentiates more between excellent and average students. The Examination Board addresses relevant topics and the panel is convinced it monitors the quality of assessment and the end level adequately.

Standard 4: Achieved Learning Outcomes

The study programme **meets** the generic quality requirements for standard 4.

Alumni work in a wide variety of positions in the textile industry. The work field is positive about their value for the industry and expresses their satisfaction with the products students deliver in the graduation phase. The panel has established that students show they master all competences at the final level through the four graduation products: thesis, two projects and a paper on international management. The panel is of the opinion students work on relevant topics for the thesis. According to the panel, the study programme can strengthen the focus on applied research in the graduation phase. This contributes to distinguishing the professional master from the academic master.

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Introduction

This is the assessment report of the Master programme Innovative Textile Development offered by Saxion University of Applied Sciences. The assessment was conducted by an audit panel compiled by Netherlands Quality Agency (NQA) commissioned by Saxion University of Applied Sciences. Prior to the assessment process, the audit panel had been approved by NVAO.

In this report NQA gives account of its findings, considerations and conclusions. The assessment was undertaken according to the *Assessment Framework for the Higher Education Accreditation System of the Netherlands* of NVAO (September 2018) and the *NQA Guideline 2019 for Limited Programme Assessment*.

The assessment took place on the 26th and 27th of May 2021.

The audit panel consisted of:

- A. (Alexandra) De Raeve, MSc (chair/domain expert)
- M. (Mikki) Engelsbel, MSc (domain expert)
- P. (Pascal) Betten (domain expert workfield)
- S. (Sophie) Baars, (student member)

A. (Alma) Mulder MSc, NQA auditor, acted as secretary of the panel.

The master programme Innovative Textile Development was not part of an audit cluster.

Method of working of the panel and process

For the assessment, the study programme offered a critical reflection with appendices. For the assessment of the achieved learning outcomes, the panel has studied fifteen graduate products of graduates who recently finished their studies. These fifteen graduate products have been selected from the list of alumni of the last two academic years. In this selection, the variety in grading has been taken into account.

Due to the Corona pandemic the study programme chose for an online audit, spread over two days. The panel unanimously agreed. To prepare the visit the panel held a preliminary online meeting. In the preliminary meeting the panel members have been instructed about NQA's method of working and about the *NVAO-Assessment Framework*. In this meeting the panel members also discussed their tentative findings. During both the preliminary meeting and during the audit, the panel members shared their findings with each other continuously. During the online audit the panel spoke with various stakeholders of the study programme, such as students, lecturers (assessors) and representatives of the work field and it studied several documents, see appendix 2. At the end of the assessment days the panel incorporated all the information it had obtained in an overall picture and in a tentative substantiated assessment. In the final oral feedback session the panel chairperson communicated the conclusive assessment and the major findings of the panel. On day two the online audit finished with a development dialogue between the panel and representatives of the study programme. Staff members and students of the study programme have had the opportunity to approach the panel in confidence to bring to the attention of the panel those matters they deem of importance for the assessment. No use was made of this possibility.

After the online assessment days a draft report was formulated, which was presented to the panel. On the basis of the panel's input a second draft was made, which was presented to the study programme for a check on factual inaccuracies. The panel members have taken note of the reaction of the study programme and if necessary, adapted the report. Subsequently, the report was established as definitive. With all information provided (orally and in writing) the panel has been able to make a deliberate judgement.

The audit panel declares that the assessment of the study programme has been carried out independently.

Utrecht, October 08, 2021

Panel chairman

**Alexandra
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A. (Alexandra) De Raeve, MSc

Panel secretary



A. (Alma) Mulder, MSc

Characteristic Features of the Study Programme

The master Innovative Textile Development consists of an eighteen months study programme, offered by Saxion University of Applied Sciences in Enschede. It is a relatively new study programme, that started in 2016. Over the past years the number of students attending the programme has increased, from 9 in 2016 to 28 students in 2020. The programme is offered in English. This makes it also attractive for international students. The ratio of EU students versus non-EU students is approximately fifty-fifty percent. A large share of non-EU students are from Asian countries, such as India, Bangladesh, Taiwan.

Within the organisation of Saxion University the programme resides under the Academy Creative Technology (ACT), together with the related bachelor study programme Fashion & Textile Technologies and bachelor study programmes Creative Media and Game Technologies, HBO-ICT and Creative Business.

Saxion University has a strong tradition and network in the field of textile and textile technology. With the bachelor and master programme Saxion contributes to the continuity of education on textile in the region. The development of a master programme followed from the need expressed by the industry for professionals exceeding bachelor level, especially in the area of the development of future proof textiles. Sustainability is a core theme of both the bachelor- as well as the master programme, linking them to the central Saxion theme “Living Technology”. The Saxion research group Sustainable & Functional Textiles (SFT) is closely connected to the master programme, providing assignments and offering access to companies and organisations in its network. The facilities of Saxion are multiple, offering students to practise in different labs and working with a variety of state-of-the-art machines.

The fact that the master Innovative Textile Development (ITD) is a relatively new programme is reflected in the development it has gone through. Once in operation it turned out that certain aspects of the initial programme required extra attention and alteration. From the start the team has continuously worked on improving the programme. An example of this is the cultural diversity of the student population. The team was aware of the variety in cultural and academic backgrounds of the incoming student population, but the impact has been greater than expected beforehand. Students differ in academic attitudes and ways of perceiving education. It requires a thorough intake procedure and differentiating in the coaching and tutoring of students. The cultural and disciplinary differences between students reflect the practice of the work field, as the sector of fashion and textile is known for its international and multidisciplinary character. Not all students have a background in textile. Students who want to enrol in the programme and do not have a bachelor degree in textile follow an online preparatory module.

The curriculum is built up as follows. In the first year students work in groups on projects and follow courses on textile and research and academic skills. Every quarter of the first year consists of a project, accompanied by the courses of the project line, paper line and textile line. The second year is centred around the final thesis.

The study programme is ambitious and multiple opportunities and challenges are pinpointed for the coming years. One of these is investing in broadening the professional network with

companies and organisations based outside The Netherlands. The graduation phase of the programme will be altered in terms of the products with which students demonstrate they master the competences.

English

The choice of English as the teaching language is in line with the international orientation of the industry: production and consumption of textiles cross borders, as well as their social and environmental impact. Standard 1 and 2 elaborate further on this choice.

Corona

During the Corona pandemic the study programme demonstrated flexibility in the transition from physical to online education. Proper attention was paid to the wellbeing of students and they were offered intensified coaching. The Corona pandemic has brought along new experiences with online education and the drive to explore new forms of blended learning. Standard 2 and 3 provide specific information on the impact of Corona on the programme.

Basic Data of the Study Programme

Name of study programme as in CROHO (Central Register of Study Programmes in Higher Education in the Netherlands)	Master Innovative Textile Development
ISAT-code	49128
Orientation and level study programme	X Higher profession-oriented education (hbo)
Level study programme	X master
For study programmes in higher profession-oriented education, the addition which is used for the degree. See the ministerial regulation and the incorporated reference list Stcrt 2013 (Netherlands Government Gazette), 35337 and its elaboration by NVAO. Deviations from it must be validated by the audit panel	Master of Science
Number of study credits	90 EC
Variant (s), including a possible 3-years track for VWO (pre-university education) in case of a study programme of higher profession-oriented education	Not applicable
Possible new name	Not applicable
Graduation courses / 'tracks'	Not applicable
Possible new graduation courses / 'tracks'	Not applicable
Location(s)	Enschede
Teaching language	English

Retrospective of the Previous Accreditation

The study programme was conditionally approved in 2016. In the re-assessment the study programme demonstrated it complied with the conditions, as explained below. The panel has seen how the improvements have developed over time and reflects on the current situation:

-Introducing a study scheme for incoming students lacking knowledge on textile and the related field. The study programme provides these students with a theoretical e-learning course of 20 EC, consisting of different modules. Each module is closed off with an exam that has a formative function. The study programme monitors primarily on the study progress. During the introduction period all students spend one day in the laboratories. The panel goes along with the alterations the study programme made in this preparatory study scheme. On basis of conversations with staff and students the panel concludes that this preparatory course meets the expectations of both. Students succeed in mastering the necessary fundamental knowledge of textiles that is required to follow the master programme.

-Developing assessment matrices and assessment criteria on the projects in which groups of students work together. The panel has seen the matrices and criteria and is of the opinion that these suffice. They show how students work on which competences and what is expected in regard to the level to be achieved. Altogether it contributes to the transparency of assessment and to the expectations of the study programme of the effort of students.

-Developing clear criteria with respect to the master thesis project, in combination with an assessment form that provides insight into the competences and level students work on. According to the panel the criteria on the assessment forms with respect to the master thesis are adequate. The assessment forms themselves are still work in progress. The chapter on Standard 3 will elaborate further on the findings of the panel.

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.

Conclusion

Based on the considerations mentioned below, the audit panel assesses that the master Innovative Textile Development study programme **meets** the generic quality requirements for standard 1.

The study programme ITD is a professional master that prepares students for a wide range of existing and future positions in the textile industry and related sectors. The master programme aims at delivering professionals with knowledge of textiles, innovation, sustainability and related business models to the textile sector. The panel encourages the study programme to further elaborate on the profile of the graduate by making a difference between the textile expert and the innovation engineer. The study programme itself has a unique profile. The panel is of the opinion that the master programme distinguishes itself from the bachelor level. The study programme is based on competences that include research and analysis. It is documented well how the competences of the study programme are linked to the national set of competences of the domain of Creative Technologies. The programme has made clear in the description of the competences how these are linked to the Dublin descriptors and master level. The contact of the study programme with the work field in general is excellent. The strong link to the research group Sustainable & Functional Textiles contributes to this. The panel encourages the ambition of the study programme to extend their network with companies based outside the Netherlands. The work field was consulted on the content and design of the curriculum when the study programme started. The panel is of the opinion that it is important to continuously keep up with developments in the sector and it recommends the study programme to invest in a structural and strategic dialogue with representatives of the work field.

Substantiation

Professional orientation

The master ITD started out as an answer to the need the fashion and textile industry expressed for professionals acting at master level. Although closely related to the bachelor programme Fashion and Textile Technologies, the master programme focuses specifically on the development of textiles and technology aimed at the sustainable innovation of textile products and processes. Graduates distinguish themselves by their in-depth knowledge of textile materials and related technology and techniques in combination with entrepreneurship and a focus on sustainability. The panel is of the opinion that the study programme could strengthen the professional profile further by giving it more focus. It could be helpful to elaborate on the difference between the textile expert with knowledge of innovation and the innovation engineer in the field of textiles. This contributes to clarity for both work field and students, in relation to their expectations. Enrolling in the master programme of Saxion is an interesting option for students from the bachelor programme who want to further develop their knowledge of and skills in technology, innovation and textile materials. The panel considers this continuing line of

professional education as valuable and an asset to the whole of research and educational activities of the Academy of Creative Technologies.

The master programme wants to prepare students for a diversity of positions within companies and organisations in the textile industry. Examples of such positions are: product and innovation managers, product engineers, business development managers, designers and project managers in the field of innovation and R&D. Graduates will function on tactical and strategic levels and contribute to a more sustainable way of working with materials in the textile industry. Together with the developments that took place in the work field, the bachelor programme and throughout Saxion as a whole, the master programme has integrated sustainability as a core theme. The study programme is linked to Saxion's research agenda on "Living technology". This research programme studies the interaction between technology, innovation and the impact on people and society. By delivering graduates to the labour market in the textile industry that are capable of placing developments in the broader perspective of the sustainable use of materials, futureproof products and production processes in combination with viable business models, Saxion aims to contribute to the next step in the textile industry.

Final qualifications

The master programme is built around the twelve competences of the domain of Creative Technologies and uses the same Body of Knowledge & Skills as the bachelor programme Fashion and Textile Technologies. The twelve competences are divided into four clusters: technological competences, design competences, organisational competences and professional competences (see appendix 3). With regard to the content, the main focus of the master programme is on textile material. In addition to the domain-specific competences, the master programme has integrated the four key pillars of the professional master standard of The Netherlands Association of Universities of Applied Sciences (2019). Together with the translation of the competences to the Dublin descriptors, the domain-specific competences at master level make clear what is expected from students. The level of professional performance is reflected in the complexity of the assignments or questions students are able to handle and their ability to innovate. The bachelor student shows he/she is able to carry out complex tasks, the master student shows his/her ability to act in complex professional situations and to take on a leading role. The panel concludes that the intended learning outcomes as formulated by the study programme are in line with what may be expected from a professional master level. The emphasis of the programme on technology, innovation and material is reflected in the competences students are expected to achieve.

Specific profile

The programme is unique as it is the only master programme in The Netherlands that combines knowledge of textile materials with that of the natural sciences, sustainability, technology and business models. The University of Applied Sciences of Amsterdam (HvA) also offers a master programme in the domain of textile, but with a focus on fashion and entrepreneurship. In the view of the panel the study programme has chosen a logical connection with the overall Saxion theme "Living technology" and sustainability. The value chains of the textile industry cross borders all over the world, which makes addressing the issue of sustainable production and consumption in the study programme all the more relevant. Internationally the master programme's strength lies exactly on the combination of the forementioned disciplines: natural sciences, sustainability, technology and economics. The emphasis of master programmes abroad lies mainly on the

technical aspects of the improvement of textile products and -processes. The Saxion programme seeks to go further in combining technology and knowledge of textile materials with aspects of sustainability and the economic perspective of product and process innovations in the textile industry. Students the panel spoke with indicated that the combination of sustainability, material and technology was what attracted them in the programme. The panel is of opinion that the programme is an asset to Dutch higher education in textiles. Considering the profile of the master programme and the international orientation of the work field, the panel supports the choice Saxion made for English as the teaching language.

Tuning with the work field

The programme was co-created together with companies and organisations representing the textile industry and the Saxion research group SFT. The competences students are supposed to master during the programme have been assessed by these stakeholders and translated into a curriculum with specific attention to sustainability, technology & innovation and circular techniques. The study programme makes use of a strong network of partners from the textile industry, but also of their connection with other universities of applied sciences. The contact with stakeholders is structurally embedded through participation in the project line of the curriculum. Companies and organisations offer authentic assignments that are translated into projects, providing real-life professional situations for students to work on. Another route through which the relation with the work field is established, is the network of the research group. The panel noted that there is no structural dialogue with the work field on a more strategic level, for example with respect to the relevance of the competences and (changing) needs or demands in the work field. The panel recommends the study programme to initiate such structural strategic meetings and include all relevant subsectors, as their needs and expectations differ. This should not be difficult given the good contacts of the study programme with the industry and through the research group SFT.

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.

Conclusion

Based on the considerations mentioned below, the audit panel assesses that the master Innovative Textile Development study programme **meets** the generic quality requirements for standard 2.

The eighteen months study programme consists of 90 EC and is practiceoriented. Project work in the project line is combined with courses and education in two other lines: the paper line and textile line. The paper line focuses on academic writing and research skills, the textile line on material and techniques. Theory of and working with the topics of sustainability and innovation are integrated in all lines. The panel is of the opinion that the courses and theory offered are relevant and adequate. To give the development of other research skills in addition to writing more emphasis, the panel supports the idea of the study programme to convert the paper line into a research line. The panel is enthusiastic about the hands-on experience students gain by working in groups on real-life assignments. These assignments are the product of co-creation between the work field and the study programme. The panel encourages the study programme to be more explicit on the criteria the assignments have to meet. The projects the panel saw are mainly of the interior textile sector. More diversity in the assignments of the projects could offer students a broader view on the textile sector in the opinion of the panel. The level of complexity of the projects builds up during the first year, leading up to the graduation phase. Students are offered coaching and tutoring in different forms: coaching in the projects, individual coaching, peer coaching and through the study buddy. The panel established that the initiative and responsibility for receiving tutoring lies with the student and it agrees this is in line with what may be expected from a master student. The panel establishes the learning environment triggers students to develop their inquisitive and critical attitude and provides the skills and knowledge to master the competences on master level. The panel spoke with an enthusiastic team. Lecturers have a background in relevant disciplines. A strong point is the relation of the staff with the professional field through participation in the research group and involvement in the industry. The panel is convinced that the staff is dedicated to the programme and able to offer coaching and teaching as and when needed. The level of English of the staff is sufficient.

Substantiation

Content and structure of the curriculum

Structure

The master programme is divided into six terms (quarters) of 15 EC each. The study programme has organized the curriculum along three lines: the project line, the paper line and the textile line. These three lines are part of all terms in the first year. During each term in this first year students work in the project line on an authentic assignment. Students deepen their knowledge and skills in a focused way, while going through the complete research and design cycle with every project. The training, education and coaching/tutoring in the paper line and textiles line support the project

line. The paper line is centered around competence 4, research and analysis. In this line students can pick topics of their own interest to work on. This gives them the opportunity to develop their knowledge on a specific subject, in combination with learning to write and report along academic standards. The level builds up from learning to analyze articles to writing a paper according to publishing standards. In this line students work on an individual basis. The textile line provides students with theoretical knowledge on textile materials and processes, such as smart and sustainable textiles, advanced textile technologies, textile and colour chemistry, composites and digitalization. In the second year (the last two terms) students work on their final thesis. Appendix 4 contains the structure of the programme.

By means of the study guides students are informed on the content and planning of the courses. The panel finds the study guides relevant, but in some cases too concise to function as a manual. The study programme could elaborate more on what is expected from students. In conversations on the assessment days the panel heard from students as well as from the study programme that some students express the need for more structure in the programme. The study programme indicated this has been discussed several times in the Education Committee. Until now, the study programme decided to maintain the design of the curriculum as this is directly linked to the underlying didactic concept. To manage the expectations from both students and the study programme, more attention is given during intakes to explain the didactic concept and what the programme demands from students at master level. The study programme has also invested in the coaching of students. The panel agrees with these measures. The panel considers the programme to be coherent, suitable for a master programme and offering students the tools they need to master the final competences. During the Corona pandemic the programme was completely converted to online teaching. With regard to the structure and content of the programme the study programme indicated this was a relatively smooth transition.

Knowledge and skills

The Body of Knowledge and Skills (BoKS) provide students with expertise they need to meet the requirements of the industry. The study programme has made an elaborate scheme in which competences are linked to the knowledge and skills that students are required to master. The BoKS of the master ITD is derived from the national established BoKS of the bachelor programmes in the domain of creative technologies and translated to the textile sector. The BoKS distinguishes “basics”, “visions” and “trends”. The basics are the elementary knowledge skills and attitude that apply to all graduates in the Creative Technologies domain. The visions build further on the basics and are the academic and professional theories and methods coming from practice in the sector. The trends describe future developments in society as a whole as well as in the sector. The BoKS reflects the importance of research and innovation in textile technology and sustainability as central themes in the study programme. An example is competence 2. Developing and Prototyping, which the study programme describes as: *“the ITD graduate is capable of realising added value on technological level. He is capable of defining a design or prototype on the basis of a set of requirements in the area of technical and functional textiles. The ITD graduate integrates knowledge on sustainability in the design of a sustainable product, production process or service”*. The BoKS describes the following accompanying knowledge and skills: “Product breakdown, Identifying processes/materials/forms/colour/functionality/ techniques, Stage-Gate Model, Innovation Management, from concept to visual communication, Marketing communication strategies, Branding, Design for recycling.” Trends that the study programme identifies as relevant are: digitalisation, 3D-printing, Rapid prototyping, CSR, Local

development global production, Circularity, Conversing 2D – 3D, CAD, Body scan, 3D fit and Fully fashion.

The panel finds the thorough elaboration of the BoKS very helpful in understanding what students are supposed to show in terms of knowledge and skills and how these contribute to mastering the competences. Next to this, the BoKS also provides a view on how the competences are related to broader developments in the sector and beyond. Students find the content of the courses relevant and challenging. The panel is of the opinion that the BoKS reflects master level.

Didactic concept

The didactic concept of the programme is based on practice-oriented learning by means of authentic assignments from the work field. The level of complexity builds up during the projects and courses. Professional collaboration and taking responsibility and initiative are stimulated through the projects. These encourage students to deepen their knowledge by searching for information and investigating and (re)formulating the questions or problems regarding the topic of the assignment. The learning context the study programme offers requires an active and inquisitive attitude from students and provides the opportunity to combine practice and theory. In this way learning is not a linear process: it involves making mistakes and learning from them. Students thus shape their own learning path. In the contact with the work field the study programme also emphasizes the learning process students go through, as to manage expectations on the results of the projects. The programme demands a high level of own responsibility, initiative and motivation. The panel considers the didactic concept apt for a master programme.

Projects

As mentioned earlier, in the first year students work in projects on assignments from the work field. Each project highlights a different theme. In project 3 for example, students work in a group on designing a sustainable, commercially viable, product, process or application in the field of Digitalisation of Textiles Production and/or Sustainable Textiles for a client. The study guide of this project indicates that the focus lies on mastering competences 5. Concept, 6. Design, 9. Project management and 11. Ability to learn and reflect. The study guide is available for students on Blackboard. The assignments are co-created by the study programme and the work field on the basis of a practice-oriented problem. The study programme assesses if the assignments fit the learning objectives and theme of the project. If the assignment needs adaptation, this is done together with the company or organisation.

In the first quarter the study programme composes the groups of students (three to five) that work together. After that, students are allowed to form groups by themselves. The condition is that groups are mixed with respect to cultural and disciplinary background and the composition of groups changes every quarter. Every group has a group coach (lecturer) and a coach from the work field. Group work resembles a professional setting in the work field and is experienced as valuable by students. The panel is positive about the group work in general. The projects provide students a context similar to what they will encounter in the work field. The assignments and the didactic design of the projects stimulate students to develop their research skills, communication and intercultural skills and apply knowledge from the courses. The panel encourages the study programme to be more transparent on the criteria assignments have to meet, by documenting these. Most of the assignments of the projects the panel saw, come from the interior textile sector (window decoration, mattresses and office furniture). The panel is of the opinion that more

diversity in the assignments provides students a better view on the textile sector as a whole and an opportunity to get acquainted with subsectors they are not familiar with.

Projects and assignments continued during the Corona pandemic. Groups had online contact with their Saxion coaches and the companies involved. Students occasionally met each other outside the campus for group work. The panel supports the choice of the study programme to continue the activities with the work field. From the point of view of the international character of the industry, the panel is of the opinion that the situation of working online also provides a realistic learning experience.

Research

The vision on research of the study programme gives insight in the way the study programme translates professional master level to research and analysis. The study programme emphasizes students are taught research skills from the perspective of addressing practice-oriented problems. They learn to apply a systematic and methodological sound approach, in line with academic standards. To distinguish between academic and professional research, the study programme uses the system of Technology Readiness Level (TRL), which is translated specifically to the textile sector (see appendix 5). According to the study programme, the majority of the research carried out in the programme by students takes place in TRL 4-7 with exceptions to TRL 3 or TRL 8-9. Innovation is approached from a broad perspective: it can apply to a product, a process or business model, in which technology can be an enabler.

In conversations with the staff the panel addressed explicitly the topic of research in the professional master versus research in the academic master. In the products of students, especially the thesis, the panel found the emphasis on the rather academic research component heavy and not matching with the practice-based design thinking research cycle used. As a result less attention seemed to be given to the practice-oriented solution, conclusion, product or recommendation. The study programme has made clear to the panel that the staff is aware of this issue and that it is an important subject of discussions. The panel encourages the study programme to continue these valuable discussions, also with colleagues of other Saxion master programmes. It recommends to implement the idea of developing the paper line into a research line, as this will reassure the practice-oriented focus of research. Training and education in research and analysis are prominently visible in the paper line and project line. In both lines students are expected to carry out research on a specific topic or assignment. The study programme has noticed over the past years that there is a difference in the level of research skills and capabilities between students that enter the master programme. Therefore, the study programme has launched extra classes on research and writing skills during the intro week. In this way the gap for these students to the regular programme is bridged. The panel appreciates this effort. Conversations with staff and students convinced the panel that the research capabilities and level of incoming students form a sufficient basis to overcome deficiencies with the offered additional classes.

Internationalisation

The textile industry is a sector that is characterized by its international profile. The production and consumption chain of textile crosses borders. Many countries that produce textile and textile materials import the raw material and (natural) resources needed. Products and production have to meet up with (quality) standards of the countries where products are sold. The master

programme prepares students for a career in this global context. Considering this, the panel supports the choice of offering a master programme in English, with an English name. The fact that fifty percent of the student population of the study programme is from abroad, makes internationalisation an intrinsic aspect of the master ITD. Taking into account intercultural aspects of issues and questions in the industry forms part of competence 12 “Responsibility”. Students learn to work in a multidisciplinary and multicultural environment. Internationalisation is an integrated aspect in the curriculum, for example in the Paper on sustainability and the project Living Technology. The group work in projects contributes to the development of cultural sensitivity. In the coaching of students the study programme also pays attention to cultural aspects, such as communicative and intercultural (communication) skills. The attention of the study programme for cultural differences has increased over the years, as it turned out to be an important factor in the way students perceive education, their academic attitude and what they expect from the study programme.

Coaching

Students receive coaching and tutoring in different ways, depending on the module or phase in the programme. The courses are given by lecturers who guide students content wise. A project coach guides every group in the projects. This group coach intervenes if there are problems in the group dynamic and can be consulted by the group on their progression. Peer coaching takes place twice every quarter in the projects. Next to this, every individual student has a coach, who is assigned to the student from the beginning to the end of the programme. With this coach students have a meeting once a quarter. Both students and staff indicate there is room for students to ask for extra coaching. Sometimes extra coaching finds place for a specific group, for example on language or research skills. Good students are identified and asked to guide and help students that need some extra attention. These study buddies help others on the basis of their experience: students with a bachelor degree from Saxion for example, introduce others to Saxion specific requirements. International students can turn to the International Office for practical guidance on living and studying in the Netherlands. Students indicate that the contact with lecturers is personal and informal. The small size of the study programme lowers the threshold for approaching lecturers or coaches. The panel is positive about the way different forms of coaching and guidance are organized. The fact that the majority of the staff also works for the research group Sustainable & Functional Textiles, in addition to the appointment at the master ITD, has the advantage that the staff is flexible in responding to questions of students, even outside office hours. Responsibility and initiative for asking and receiving coaching lies with the students. The panel is of the opinion that this is in line with what may be expected from a master student and it is convinced there is sufficient attention for the individual student.

During the Corona pandemic students missed the physical contact with fellow students and the lecturers most. For the project work, students were able to connect online with each other and sometimes met outside school. Contact with the work field was also established online. For the work field this had the advantage of flexibility and being able to offer short consulting sessions. Coaching offered by the study programme was intensified during the Corona pandemic. The course coordinator organized regular individual sessions with students, to inquire after their wellbeing. Practical experiences in the lab were reduced, but not completely cancelled. The panel agrees with the measures taken by the study programme.

Teaching language

The study programme is fully conducted in English. Students experience the level of English of the staff in general as sufficient. From conversations with students and staff the panel established that the level of English of the teaching staff is adequate. All documentation of the study programme is in English, including the Education and Exam Regulations (EER), the programme guide, the instructions and manuals and exams. The panel concludes that all information and material students have to have to be able to prepare themselves for education and exams is accessible and of proper quality in terms of language. Under the header "Admission" attention is paid to the level of English the study programme requires from students.

Admission

The admission procedure describes what is expected of students who want to enroll in the study programme. Students are required to have a level of proficiency in English equivalent to a TOEFL score of 550 or an IELTS score of 6. Graduates of Saxion's bachelor programme Fashion & Textile Technologies or a similar degree from Saxion's partner universities are directly admissible with respect to their level of English and value of the degree (diploma). Students holding a foreign degree are asked to have this assessed by Nuffic. Directly admissible students are still obliged to go through the selection procedure. Students who graduated from a non-related technical Saxion bachelor programme are admissible under certain conditions: in order to bridge the gap in basic knowledge of textiles they have to follow an online study programme (preparatory module) of a hundred hours, including assessments.

As mentioned above, the study programme works with a selection procedure. The selection procedure applies to all students, whether or not they are directly admissible. The selection procedure consists of an interview and an assignment in the form of an innovation case. During the interview students pitch the innovation case they worked on and the study programme assesses students on the basis of their motivation, portfolio, creativity and interests and research capability. The study programme has a maximum capacity of twenty-four students. Ideally half of these places is taken by students from abroad and half by Dutch students. This ceiling has not been reached so far. The panel finds the admission procedure thorough. Students and staff are positive about the online preparatory module for students with another background. On the basis of conversations the panel is confident this gives students enough basis for successfully participating in the regular master programme.

Staff

The panel spoke with an enthusiastic, professional and engaged team. The fact that the study programme is small, makes it possible to create an informal and sympathetic atmosphere. Students stated that they feel "seen" and that the threshold is low for approaching staff with questions or specific guidance or coaching issues. The staff consists of professionals with different academic backgrounds (smart textiles, sustainable business, communication, textile chemistry), which in the eyes of the panel match with the domain specific orientation of the study programme. The panel establishes that the academic level of the staff meets with the master level of the study programme. The team consists of nine staff members, representing 1,8 FTE. The panel concludes the small appointments do not affect the dedication of the staff to the programme. Work pressure is high, but manageable as long as student numbers do not exceed twenty-four. Four staff members have a PhD, four a master degree and one a bachelor degree. Four staff members are active participants in the research group SFT, one of them being the associate lector. Because of the modest size of the team, staff members take on different roles,

for example: module coordinator, student coach, member of the curriculum committee, member of the exam committee, course director, coordinator of the final thesis. Part of the staff is involved in both the bachelor and the master programme. One of the staff members is an entrepreneur in the field of textile innovation. Eight staff members have their BQE (Basic Qualification Examination) certificate, one of them also the SQE (Senior Qualification Examination) certificate. One staff member is enlisted for the BQE training, which starts when the Corona measures allow it. Only the staff members with the BQE certificate are assigned as assessor by the exam committee. The management of the study programme is three layered, consisting of: the director of the Academy Creative Technologies, two programme managers (for both the bachelor and the master study programme) and one course director who is responsible for the daily operation of the programme. The master ITD is furthermore facilitated by the Academy of Creative Technologies with an educational advisor and an advisor on quality assurance. The panel establishes that the team and supporting staff are capable in quality and quantity to execute the master programme.

The transition to online teaching due to the Corona pandemic required certain didactic and digital skills. Saxion provided support for lecturers with regard to online teaching and assessment through a digital platform. In the eyes of the study programme best quality of teaching in a practice-oriented learning environment is through personal interaction. According to students points of improvement related to Corona are the length of online courses and miscommunication on changes in the programme. The study programme is using the valuable experiences of the last year to look for hybrid forms of teaching. The panel is impressed by the fast transition to online teaching and confirms that the points of improvement are addressed by the study programme.

Facilities

Students of the master ITD have access to specific and up-to-date facilities at the Saxion campus, such as various laboratories: the chemical lab, mechanic lab and the circular lab that recently opened. Examples are industrial knitting machines, a welding machine, spinning machine. The facilities are used both for carrying out research as for educational and teaching ends. The research group SFT plays an important role in creating a setting with equipment similar to what is used in the industry. The research group also manages to invest in innovative and brand new facilities together with partners. In order to be able to make use of this infrastructure, companies are willing to invest in specific facilities together with Saxion. A recent example is the before mentioned circular textile lab. For the use of facilities, Saxion works together with other universities of applied sciences such as the University of Applied Sciences of Gent and the University of Applied Sciences of Amsterdam. The panel is impressed by the state-of-the-art machinery students and staff work with. It is enthusiastic about the way the study programme manages to make use of the network of Saxion with regard to keep their infrastructure and facilities up-to-date. Saxion succeeds in providing a win-win situation for all stakeholders involved, whilst strengthening relations with existing and new partners.

Standard 3 Student Assessment

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

Conclusion

Based on the considerations mentioned below, the audit panel assesses that the master Innovative Textile Development study programme **meets** the generic quality requirements for standard 3.

The system of assessment is well documented. The vision on assessment is translated to and can be traced back in the assessment programme. Different forms of formative and summative assessment support the learning process of students. These forms of assessment coincide with the chosen practice-oriented didactic concept and match with the content of the programme lines (project line, textile line, paper line). The assessment system assures the grading of the individual achievement of students in group work. Students show they master the competences on final level through different products: a paper on international management, projects 3 and 4 and the thesis. The panel came across various versions of assessment forms of the thesis and projects, including forms with very concise written feedback. From the conversations with students and lecturers it became clear that students also receive oral feedback. The panel recommends the study programme to be more elaborate on the assessment forms in general and to introduce standard oral feedback sessions, as it contributes to transparency and calibration. With respect to the final works, the panel recommends introducing a grading system that enables the study programme to make a sharper distinction between excellent and average students. The panel establishes the Examination Board works in line with the law and regulations. The Examination Board is critical and addresses relevant points of improvement. From the conversations with the study programme it became clear that points of improvement are recognized. In conclusion the panel considers that the system of assessment guarantees proper quality assurance and is adequate to ensure master level.

Substantiation

Assessment policy

The leading principles of assessment policy are documented in the ACT Exam Policy 2020. The assessment policy applies to the entire Academy of Creative Technologies (ACT). One of the core principles of the exam policy is that assessments should offer students, the work field and the study programme a view on the phase of development of an individual student, with regard to the advancement in the study programme in general and the mastering of the competences. The exam policy consists of a set of agreements related to each phase of the exam cycle: design, constructing, conducting, assessing and analysis. For every assessment an exam matrix is drawn up. When constructing summative exams, the four-eyes principle is applied. Assessment takes place by more than one assessor when it concerns an exam with more than 15 EC or when a student is assessed on "showing and doing". The study programme has elaborated the way competences, assessments, the level of complexity relate to each other in a matrix. The matrix offers insight in how students are prepared for and guided towards master level and the contribution of assessments in the process. In addition to the ACT exam policy, the study programme works along the principles of the Examiners Policy 2020-2021. This policy also

applies to the entire Academy and focuses specifically on the role and qualities of examiners. According to this policy, lecturers may function as examiners when having a bachelor or master degree and BQE. Only when an examiner has a master degree and BQE, he or she can assess graduation candidates. In the case of a bachelor degree, the examiner may construct exams, carry out assessments, evaluate the execution, except for the graduation phase. Examiners are appointed by the Examination Board. Saxion stimulates examiners to keep their knowledge on assessment construction and assessing up to date, for example through participation in learning communities. The Education and Examination Regulations (EER) document for the master programme is accessible for students on Blackboard. The panel concludes that the exam policy used is relevant, adequate and based on principles to safeguard the quality of assessment. With the documents the panel studied with respect to exam policy (such as the EER), the study programme acts in line with the requirements.

Execution of assessment policy

The curriculum committee constructs the exam plan and subsequently the assessment programme, based on the abovementioned policy. The assessment programme connects the learning objectives to types of assessments and criteria. The panel recognizes the principle of constructive alignment in the assessment programme. Forms of assessments match with the vision on learning and the didactic concept. The practice-oriented way of learning for example, is reflected in the projects: students show they master competences by presentations, reports or products/prototypes (if applicable). Case-based assessments and written theory exams support the development of the domain-specific expertise of students. Formative assessment consists of submitting products in a conceptual phase (for example a draft of a paper) for feedback to lecturers or peers. The study programme works with rubrics and exam matrices. The study guide, exam matrix and assessment forms are accessible for students at the start of the module, via Blackboard. For every assessment the study programme has a so called digital “exam file” in which the complete documentation concerning an assessment is filed. In this file documentation on the construction of the assessment can be found, together with the assessment forms, re-sit exam and exam analysis (afterwards). Assessment construction is always done on the basis of the four-eyes-principle. The exam file is accessible to examiners and the Examination Board. The panel is positive about the way information on assessments is brought together in the exam files, as it contributes to transparency and quality improvement.

The assessment of the projects consists of group- and individual assessment. The report is graded for the group and students give a presentation on the findings. The individual component consists of individual questioning (defence). The assessment forms explain the weight given to all criteria in the final grade. Two examiners of the study programme are responsible for grading of projects, the coach and representative of the work field give advice on the grade. The panel has seen different products and assessment forms of group work and confirms the procedure is followed in practice. Products in the graduation phase are also always assessed by two examiners. The given grade by the work field has the status of “advice”. The internal examiners are leading in the grading of students. More specific information can be found under the next header “Graduation phase”.

With regard to the execution of the assessment policy, the panel is of the opinion that giving feedback to students and the development and implementation of the assessment forms requires more consideration. In order to comply with the objective of giving students insight in their development and support their learning process, providing adequate and qualitative feedback is

important. Some of the forms studied by the panel contained very concise feedback. During the assessment day the panel understood from both the staff and students that in addition to the assessment forms, students receive oral feedback. However, from conversations with students it became clear that feedback sessions do not always take place. The panel recommends to program structural feedback sessions in combination with elaborate written feedback. With respect to the thesis, the panel has seen a variety in the assessment forms and understands that the team is now working towards a digital version. From conversations with staff, management and the Examination Board it became clear that the development of the assessment forms and filling them out has been scrutinized by the study programme for some time now. The panel requests the study programme to speed up this process.

Graduation phase

Students show they master the competences at final level in project 3, project 4, the paper International Management and the thesis. In project 3 students work in groups on assignments from the work field. Students are expected to produce a sustainable and commercially viable solution in the field of Digitalization of Textiles Production and/or Sustainable Textiles. They make use of a product design model. Assessment consists of a written report, a group presentation, individual interviews and peer evaluation. The weight of the separate components in the final grade for this work is as follows: 40% report, 20% group presentation 20%, verbal individual assessment and 20% peer evaluation. The grading involves different examiners: the lecturer responsible for the project, the textiles lecturer, coach and client (work field).

Project 4 consists of an assignment in which a group of students work on an assignment from one of Saxion's research groups. The projects content focuses on the Saxion theme of Living technology in relation to the Sustainable Development Goals. Students are asked to develop a smart/innovative textile product, that provides a possible solution for a social problem (defined by the group of students). In this project students show their mastering of technical skills through the presentation of a prototype. The process of grading is similar to project 3.

The third component of the final grade is the paper on international management. This is an individual project in which the student writes a paper on a relevant and current development within the textile industry. In this paper the student reflects on the organizational and commercial consequences of this development for the industry. Weight of the components of grading is as follows: 80% paper, 20% presentation and defense. The grading is carried out by two examiners, who are also lecturers of the course.

The thesis, including the research in response to a relevant professional assignment, is carried out on an individual basis. Students are free to choose their own topic and approach companies. There are also companies that contact Saxion with practice-oriented research questions. It is also possible for students to work on a research question from the research group SFT. The threshold for carrying out the research is the assessment of the research plan. This has to be graded as at least "sufficient". The draft version of the report is also conditionally assessed (green or red light for submitting) and offers the student opportunity to receive feedback. The assessment consists of the written thesis, oral presentation and defense. There are four assessors involved: the first examiner and the second examiner of the study programme, an external assessor from the work field and the company coach (who gives advice on the grade). With respect to the final grading, the rubric indicates that all separate components (problem analysis, quality of the product, impact

of the product, methodological and systematic approach, report and presentation) need to be graded with a 6 or higher in order to pass. The panel finds this system of grading of the thesis leaving too little room for differentiating between average and excellent students, as the majority is now graded with a 7 or 8. From the conversations with the assessors it became clear they recognized this issue and indicated that discussions on another grading system are ongoing. The panel recommends the study programme to make an alternative system of grading part of the redesign of the graduation phase (see also Standard 4).

Quality assurance

A year ago the Examination Boards of the bachelor and master programme merged. The newly formed board consists of a chair, a secretary, an external member and four internal members. One of the members is a lecturer in the master programme. The board acts in line with legal requirements. From the annual reports, the conversations with representatives of the Examination Board and examiners, the panel concludes relevant issues are addressed and the Examination Board uses different instruments to keep an eye on the quality of assessment and the level of the study programme. The Examination Board has access to the exam files and takes samples to check validity and reliability. Every year an audit of the final products (graduation phase) is carried out and the conclusions are discussed with the management. The Examination Board monitors if quality requirements to function as an examiner in the master programme are followed. As the Examination Board acts on the level of the Academy, it assesses the master level in comparison with other Saxion master programmes.

The Examination Board advises the curriculum committee, which decides on the implementation of improvements. The lecturer who is also member of the Examination Board monitors implementation. A very recent specific point of attention of the Examination Board has been the operationalization of the concepts of “innovation” and “sustainability” as criteria for approval for the research topic of the thesis. The Examination Board has advised the study programme to pay additional attention to this in the coaching of students. In a constructive dialogue the examination board seeks to contribute to the quality of the programme. The panel is confident the quality of assessments and professional master level is monitored and safeguarded by the examination board. The study programme organizes calibration sessions on the final level, by thoroughly discussing the thesis, the projects, the assessment procedures and the filling out of the forms. Last year attention was given to the finding that lecturers involved in a project scored students higher than the second assessors. In this way the study programme works towards uniform assessment. The panel concludes both the study programme and the Examination Board have pinpointed the relevant issues that need further improvement.

During the Corona pandemic all changes in assessments have been discussed with the examination board. Most of the assessments of the master ITD were not changed and could be implemented in the usual form: papers or case-based exams. The labs were open for small groups of students. The Examination Board permitted one of the examiners to assess in the graduation phase without the BQE qualification. This measure was taken because the Corona pandemic prevented examiners to continue their education on BQE.

Standard 4 Achieved learning outcomes

The programme demonstrates that the intended learning outcomes are achieved.

Conclusion

Based on the considerations mentioned below, the audit panel assesses that the master Innovative Textile Development study programme **meets** the generic quality requirements for standard 4.

Students demonstrate they master the competences at the final level with four different products. The panel confirms that the topics students work on in all four products are relevant for the work field. The work field is satisfied with the results of the products of graduates and products of the projects. One of the final products is the thesis, in which students show that they are able to handle a complex practice-oriented research question. The theses studied by the panel reflect how students carry out research and report on this process. In the eyes of the panel the emphasis on academic research in the thesis overshadows the value for the work field. The panel stimulates the study programme to take a next step with regard to the thesis, in making the product itself more applied while maintaining the academic standard. The panel considers the level of the final works they have studied sufficient for a master programme. Alumni are positive about the value of the master study for their professional career. The majority is working in a textile related environment, in different positions.

Substantiation

Graduation products and level of intended learning outcomes

During the second half of the first year and in the second year of the programme students work on their graduation. The study programme has opted for a set of four components, to do justice to all competences. These components have been described in the chapter on Standard 3. The panel studied theses of fifteen students of the last two years. The sample was based on the most recently graduated students. The sample reflected a variety in given grades. In order to be able to assess the way the study programme covers all competences, the panel studied the complete set of components of four students. From this, the panel concludes students master the competences at the intended level in the graduation phase of the study programme. All four graduation products consist of a research component, the thesis being the most important product. The research topics of the theses the panel read originated from both the work field and the research group.

The panel is positive about the wide range and relevance of topics it came across. Examples of research themes were: increasing the quality of recycled fibres by digitalization and automatization of the waste assorting process, the environmental performance of printed duvet covers, circularity of cradle to cradle socks, the development of a locally produced sustainable coat. Reading the theses, the panel came across dense reports with elaborate descriptions of the research process. In some of the reports the panel missed a more detailed substantiation of the choice of methods used. When comparing the older with the most recent theses the panel definitely noted improvement. From conversations with lecturers involved in the graduation phase, the panel established the study programme has attention for this issue. During the

defence of the thesis students are questioned on this aspect as well. The panel endorses the vision of the study programme that master students should be able to use academic publications for their research and work along academic standards, but emphasizes to stick to applied research instead of academic research. Therefore, the panel supports the study programme's quest for alternatives for the thesis and other components of the graduation phase. Introducing professional products as a means for demonstrating the final level can stimulate students to focus more on the purpose of carrying out research instead of making research a goal in itself.

Functioning of alumni in the work field

The representatives of the work field the panel spoke with are enthusiastic about the study programme and the graduates. The study programme is characterized by them with expressions such as "state-of-the-art" and "future-oriented". The work field also indicated their interest in employing graduates. The study programme has a LinkedIn page for alumni and tries to stay in touch. From this network, the study programme knows that after graduation the majority of the students find a job in the textile industry. The demand in the labour market is not easily characterized, as graduates fulfil a wide range of roles and positions in a multifaceted industry. Examples of positions alumni acquire in the textile industry are for example: product manager, sales executive, textile engineer, laboratory staff. The companies graduates work for vary in size. Some international students return to their home countries to the family business, some graduates work for multinationals or Dutch companies. Considering the above mentioned, the panel is of opinion the master programme demonstrates it connects with a demand in the labour market of the textile industry.

Final Conclusion

Assessments of the Standards

The audit team comes to the following judgements with regard to the standards:

	Master Innovative Textile Development
<i>Standaard 1 Intended Learning Outcomes</i>	Meets the generic quality requirements
<i>Standaard 2 Teaching-Learning Environment</i>	Meets the generic quality requirements
<i>Standaard 3 Student Assessment</i>	Meets the generic quality requirements
<i>Standaard 4 Achieved Learning Outcomes</i>	Meets the generic quality requirements

The judgements have been weighed in accordance with the NVAO assessment rules. On the basis of this, the audit panel assesses the quality of the existing master study programme Innovative Textile Development of Saxion University of Applied Sciences as **positive**.

Recommendations

The audit panel has the following recommendations for the study programme:

Standard 1

- The study programme consulted the work field on the design of the curriculum and competences when it started in 2016. Since then contact with the work field has turned mainly around the assignments and research questions for the purpose of the projects and thesis. The panel recommends the study programme to invest again in structural strategic contact, aimed at keeping the curriculum up-to-date and relevant with regard to the developments in the industry.

Standard 3

- Assessment is based on the vision that it should provide students insight in their development and support their learning process. This requires adequate and elaborate feedback. The panel recommends the study programme to pay more attention to the quality of the written feedback in the assessment forms, in combination with programming the oral feedback sessions to ensure these take place.
- With respect to the graduation phase the panel established the current way of grading does not do enough justice to the differences between the achievements of students. The grades of average and excellent students lie close to each other. The panel recommends the study programme to make an alternative system of grading part of the redesign of the graduation phase.

Appendices

Appendix 1: Programme of the Site Visit

Day 1: 26 May 2021

Time	Subject	Name and function
08.15 - 08.30	Digital reception Including video about the programme	Course director ITD Manager ACT Coordinator graduation Interested colleagues and students
08.30 - 09.00	Conversation 0: Image of the programme Presentation of the projects. Students show how they collaborate in projects and what the outcomes are	Students present projects Project 1, Student Artex (Representative workfield) Project 2, Student Ahrend (Representative workfield) Ahrend (Representative workfield) 2 Alumni
09.00 – 09.20	Panel discussion and coffee break	
09.20 – 10.20	Conversation 1: Relation with the (international) workfield We introduce this topic with a short presentation/explanation: why did we choose this topic? The relationship with the national and regional work field is very good. All project assignments in the curriculum originate from co-creation with companies or from our lectorate. We are an internationally oriented study programme, with an international student population. We train our students for the international work field, not only for the current situation but also for the future. Questions we would like to explore with the panel are: What makes us interesting for the international work field and how do we incorporate this in our education? Is our profile adequately attuned to the international field of work and how can we connect to it even better? Where can we link up with the (strategic) goals of the international field? How do we make the international field aware of (upcoming) developments and how do we lead them towards them?	Course director ITD Coordinator graduation Lecturer textile line and project line Lecturer textile line and project line Artex (Representative workfield) SPG prints (representative workfield)
10.20 – 10.40	Panel discussion and coffee break	

10.40 – 11.40	Conversation with students Possibly with video about student experiences	Students education committee First year students and alumni
11.40 – 12.00	Panel discussion and coffee break	

12.00 - 12.45	Conversation with lecturers: roundtable discussion	Lecturers, also working for lectorate SFT Coordinator graduation and project line Lecturer paper line Lecturer textile line and project line Lecturer textile line and project line Lecturer project en paper line international management
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Day 2: 27 May 2021

Time	Subject	Name and function
08:15– 08:45	Preliminary consultation panel	
08:45 – 09:45	<p>Conversation 2: Innovation from a multidisciplinary perspective</p> <p>We introduce this topic with a short presentation/explanation: why did we choose this topic?</p> <p>The theme of innovation in a textile context recurs in many places in the programme. In recent years, we have been emphasising the subject more and more, especially from a multidisciplinary perspective. Our products find their way into aviation, dyke reinforcement, fire protection, and so on. At the same time, we notice that the subject is sometimes difficult for students to interpret, especially when they are asked to design an innovation in product, process or service themselves.</p> <p>Questions we would like to explore with the panel are: the textile context for innovation remains unaffected, but to what extent can we give multidisciplinary a clearer position in education? How do we establish a common basis for understanding each other when doing research? What is an adequate approach to get students from various backgrounds to work on innovation from an unambiguous framework and basic conditions? How do you teach students to think outside the box and take initiatives? How can (the connection with) the lectorate SFT support us in this?</p>	<p>Lector Sustainable and Functional Textiles Associate lector Sustainable and Functional Textiles Course director Coordinator graduation and lecturer project line Lecturer textile line and project line</p> <p>Alumna and representative workforce</p>
09.45-10.05	Panel discussion and coffee break	

10.05-11.05	Conversation 3: Safeguarding of testing and final attainment levels	Chairman Examination Board Member Examination Board, representing ITD Chairman Curriculum Committee, examiner thesis Chairman Education Committee, examiner thesis Examiner thesis
11:15 – 11:45	Pending issues - two students	
11.45 – 12.45	Lunch and panel discussion, preparation of feedback	
12.45 – 13.05	Extra conversation on testing	Chairman Examination Board Course director ITD Manager ACT
13:15 – 13:45	Feedback of the panel concerning the preliminary judgements per standard	All those interested

Appendix 2: Documents Examined

A. Core documents on the portal

Report Self-evaluation ITD
Programme Document ITD 2020-2021 (incl. appendix)
Pitch en functieprofiel NL en EN
Master ITD final coaching study guide
Landelijk opleidingsprofiel domein Creative Technologies
OER M ITD 2020-2021

B. Supporting documentation

Competenties domein Creative Technologies Uitbreiding Masterniveau
Saxion Onderwijsvisie 2019
Strategisch plan Saxion 2020-2024
Teamjaarplan F&TT MITD 2020-2021
List of companies involved in the project line 2016
Jaarverslag examencommissie 2018-2019
Jaarverslag examencommissie ACT 2019-2020
Minutes Education Committee
Arbeidsmarktonderzoek eindrapport Hobéon
TNO master ITD Saxion
List of companies involved in the project line 2016

C. Assessments

Exam Policy ACT 2020
Leer- en toetsplan ITD 2020-2021
Study guide final thesis 2018-2019, 2019-2020, 2020-2021
Final assessment form master ITD
Examinatorenbeleid ITD 2020 2021
Paper 1. Organizational innovation. Incl. study guide
Paper 4. Technical innovation. Incl. study guide
Exam Textiles 1. Incl. four cases
Exam Textile line 3. Incl. study guide
Paper International Management. Incl. study guide
Project 3. Incl. study guide
Project 4. Incl. study guide
Graduation products from a sample of fifteen students:

Studentnumber	Year of graduation	Grade
449967	2019	7
354112	2019	7
322888	2019	7
313279	2019	7
455329	2019	8
329682	2019	8
323644	2019	8
403676	2020	8
405656	2020	8
457946	2020	8
412255	2020	8
474830	2021	8
477826	2021	8
455628	2020	9
474462	2021	9

Appendix 3: Competence set ITD

Technological competences

1. Technical knowledge and analysis

The Innovative Textile Developer (ITD-er) has a thorough knowledge of advanced technologies in the field of raw materials, materials and their properties, production processes (spinning, knitting, weaving, non-wovens, finishing, confection and printing) and the supply chain in the international textile industry. S/he has a thorough knowledge of innovative Key Enabling Technologies, such as inkjet-printing, nanotechnology, micro-electronics and bio-technology. S/he is capable of conducting technical research and analysis and applying the results.

2. Design and prototyping

The ITD-er is capable of achieving value creation on a technological level. S/he is capable of defining, designing and developing a design or prototype in the field of technical and functional textiles based on a programme of design requirements. The Innovative Textile Developer integrates knowledge of sustainability into the design of a sustainable product, production process and service.

3. Testing and implementation

The ITD-er is capable of constantly checking the results of design, development and production processes against set requirements. S/he can interpret the results independently and process them in an improvement proposal for the professional product. The ITD-er can valorise, i.e. using their technical material and process knowledge and knowledge of the international production and supply chain to translate a prototype into a commercially feasible professional product.

Design competences

4. Research and analysis

The ITD-er recognises and analyses complex problems and is capable of reformulating unstructured complex problems. S/he can also independently define a research question based on a concrete problem and set up and carry out research based on that question. The ITD-er shows through their research activities that they have a repertoire of research skills, and are able to select the appropriate research methods. S/he can independently integrate different technologies.

5. Conceptualisation

The ITD-er is capable of formulating a concept definition in response to market demand. S/he can formulate conceptual principles and is capable of taking account of the following aspects: social, ecological, economic, inter-cultural, ethical and aesthetic aspects.

6. Design

The ITD-er is able to reformulate unstructured complex design problems and develop an end product such as a technical textile product in 2D and 3D with an associated production process, communication and marketing products and advice reports. S/he involves other disciplines in the design when necessary.

Organisational competences

7. Entrepreneurial attitude

The ITD-er sees opportunities and possibilities for the application of advanced textile processes, services and products in the market and knows how to develop and potentially market these from an international market-oriented vision. S/he needs to be able to operate in an open, flexible, risk-taking and solution-oriented manner.

8. Commercial skills

The ITD-er is able to translate market demand into a commercial product and introduce a newly developed product to the market. S/he is able to independently make useful considerations with regard to the total production process in the chain.

9. Project-based working

The ITD-er demonstrates the ability of being able to accept, set up and execute complex projects with stakeholders. The ITD-er demonstrates the ability of being able to productively co-operate in a (multidisciplinary) team and strike the right balance between adding their own expertise and relying on the complementary expertise of others. The ITD-er is able to provide leadership to a multidisciplinary team and coordinate processes while taking account of tight deadlines

10 Communication

The ITD-er can communicate both orally and in writing (in English) about complex textile-related issues and related research with others both within and beyond the professional field. The ITD-er can engage in debate concerning the field and its relationship with other social developments. The ITD-er is capable of presenting themselves and their work professionally, while taking account of the target group.

Professional competences

10. Ability to learn and reflect

The ITD-er can analyse and manage their own actions, in part in relation to results and feedback from others. S/he is open to professional and scientific developments in the international field and related fields. S/he is able to critically assess the value of these developments and form an opinion with regard to their applicability.

11. Responsibility

The ITD-er is able to analyse and process from different perspectives the consequences of their professional actions in regard to the environment and sustainable development. S/he takes account of social, (business) economic, inter-cultural, ecological and ethical issues.

Appendix 4: Structure of the programme

2020–2021			
kwartiel 1.1	kwartiel 1.2	kwartiel 1.3	kwartiel 1.4
Project 1 9	Project 2 9	Project 3 9	Project 4 Living Technology 9
1.1 Textile 1 3	1.2 Textile 2 3	1.3 Textile 3 3	1.4 Textile 4 3
1.1 Paper Organisational innovation 3	1.2 Paper Sustainability 3	1.3 Paper International management 3	1.4 Paper Technical Innovation 3
15 ects	15 ects	15 ects	15 ects
kwartiel 2.1		kwartiel 2.2	
Afstuderen		30	

Appendix 5: System of Technology Readiness Level for the Textile Domain

Type of research	Technology Readiness Level	Description
Academic basic technology research	1	basic principles observed and reported
Research to prove feasibility of textile concept	2	concept and or application defined
Textile technology development, incl enabling technology	3	experimental proof of concept in textile
	4	components and textiles subsystems tested in lab, processing
Technology demonstration	5	components tested in relevant environment, processing
	6	textile prototype tested in relevant environment
Textile architecture, production technology development		7
Textile product test, market trials, production/ operation	8	modified based on tests and new tests
	9	new textile product ready