CENTRE FOR QUALITY ASSESSMENT IN HIGHER EDUCATION

EVALUATION REPORT

STUDY FIELD OF POLYMER AND TEXTILE TECHNOLOGY

AT KAUNAS UNIVERSITY OF TECHNOLOGY

Expert panel:

1. **Prof. dr. Diana Gregor-Svetec,** *(panel chairperson), member of academic community;*
2. **Associate Professor dr. Muhammad Tausif,** *member of academic community;*
3. **Assistant Professor dr Ewelina Pabjańczyk-Wlazło,** *member of academic community;*
4. **Ms. Agnė Biskytė,** *representative of social partners;*
5. **Ms. Greta Markūnaitė,** *students' representative.*

Evaluation coordinator – *Dr. Ona Šakalienė*

Report language – English

Vilnius
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Study Field Data*

Title of the study programme	Fashion Engineering	Fashion innovation technologies
State code	6121FX001	211FX023
Type of studies	University studies	University studies
Cycle of studies	First cycle (undergraduate)	Second cycle (postgraduate)
Mode of study and duration (in years)	Full time, 4-year studies	Full time, 1,5-year studies
Credit volume	240	90
Qualification degree and (or) professional qualification	Bachelor of Technological Sciences	Master of Technological Sciences
Language of instruction	Lithuanian	Lithuanian
Minimum education required	Secondary education	Higher education (bachelor 's degree or equivalent)
Registration date of the study programme	19-05-1997	25-06-2021

** if there are **joint / two-fields / interdisciplinary** study programmes in the study field, please designate it in the foot-note*

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I. INTRODUCTION

1.1. BACKGROUND OF THE EVALUATION PROCESS

The evaluation of study fields is based on the Methodology of External Evaluation of Study Fields approved by the Director of the Centre for Quality Assessment in Higher Education (hereafter – SKVC) 31 December 2019 Order No. V-149.

The evaluation is intended to help higher education institutions to constantly improve their study process and to inform the public about the quality of studies.

The evaluation process consists of the main following stages: *1) self-evaluation and self-evaluation report prepared by Higher Education Institution (hereafter – HEI); 2) site visit of the expert panel to the higher education institution; 3) production of the external evaluation report (EER) by the expert panel and its publication; 4) follow-up activities.*

On the basis of this external evaluation report of the study field SKVC takes a decision to accredit study field either for 7 years or for 3 years. If the field evaluation is negative then the study field is not accredited.

The study field and cycle are **accredited for 7 years** if all evaluation areas are evaluated as exceptional (5 points), very good (4 points) or good (3 points).

The study field and cycle are **accredited for 3 years** if one of the evaluation areas was evaluated as satisfactory (2 points).

The study field and cycle are **not accredited** if at least one of evaluation areas was evaluated as unsatisfactory (1 point).

1.2. EXPERT PANEL

The expert panel was assigned according to the Experts Selection Procedure (hereinafter referred to as the Procedure) as approved by the Director of Centre for Quality Assessment in Higher Education on 31 December 2019 Order No. V-149. The remote visit to the HEI was organized on the 18th of May, 2022.

Expert panel:

1. **Prof. dr. Diana Gregor-Svetec,** *(panel chairperson), member of academic community;*
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1.3. GENERAL INFORMATION

The documentation submitted by the HEI follows the outline recommended by SKVC. Along with the self-evaluation report and annexes, the following additional documents have been provided by the HEI before, during and/or after the site visit:

No.	Name of the document
1.	
…	

1.4. BACKGROUND OF THE STUDY FIELD/STUDY FIELD POSITION/STATUS AND SIGNIFICANCE IN THE HEI

The textile and clothing sector still plays an important role in the European manufacturing industry. It is a strong, flexible industry which has responded to the challenges of a globalised economy and turned from traditional labour-intensive industries for mass production towards specialty products, high value-added products, new applications and mass customization.

In Lithuania, higher education institutions (HEI) that perform textiles and clothing study programs in the group of technology fields are Vilniaus Kolegija, Utenos Kolegija and Kaunas University of Technology.

Study programs *Fashion Engineering* and *Fashion Innovation Technologies* are part of the study area Technological Sciences in the study field of Polymers and Textile Technology. They are performed at the Faculty of Mechanical Engineering and Design (MIDF)

, which is part of the Kaunas University of Technology (KTU). KTU is an accredited state higher education institution of the Republic of Lithuania, established in the present form in 1990, originated from the University of Lithuania from 1922. The KTU provides studies of engineering, technologies, physical and social sciences, humanities and arts in 42 study fields. The KTU has 9 faculties: Chemical Technology, Civil Engineering and Architecture, Electrical and Electronics Engineering, Informatics, Mathematics and Natural Sciences, Mechanical Engineering and Design, Social Sciences, Arts and Humanities, Panevėžys Faculty of Technologies and Business, School of Economics and Business. The KTU offers 96 study programs (42 of bachelor's studies, 53 of master's studies and 1 study program of integrated studies) with 8442 students and 951 academic employees. Doctoral studies are provided in 19 fields of technologies, social, natural sciences and humanities. The KTU is one of the leaders in research, experimental development and innovation in Lithuania and is active in numerous national and international organisations, associations and cooperates with more than 400 research and academic institutions from around the world as well as the representatives of international business enterprises. The Faculty of Mechanical Engineering and Design is organised in 4 academic departments: Department of Energy, Department of Mechanical Engineering, Department of Production Engineering and Department of Transport Engineering and offers 7 bachelors, 10 masters and 3 doctoral programs, among them study programs Fashion Engineering and Fashion Innovation Technologies.

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II. GENERAL ASSESSMENT

Polymer and Textile Technology field study and **first cycle** at **Kaunas University of Technology** (KTU) is given **positive** evaluation.

Study field and cycle assessment in points by evaluation areas

No.	Evaluation Area	Evaluation of an Area in points*
1.	Intended and achieved learning outcomes and curriculum	4
2.	Links between science (art) and studies	4
3.	Student admission and support	3
4.	Teaching and learning, student performance and graduate employment	3
5.	Teaching staff	4
6.	Learning facilities and resources	4
7.	Study quality management and public information	4
	Total:	26

*1 (unsatisfactory) - there are essential shortcomings that must be eliminated;
2 (satisfactory) - meets the established minimum requirements, needs improvement;
3 (good) - the field is being developed systematically, has distinctive features;
4 (very good) - the field is evaluated very well in the national and international context, without any deficiencies;
5 (excellent) - the field is exceptionally good in the national and international context/environment.

Polymer and Textile Technology field study and **second cycle** at **Kaunas University of Technology** (KTU) is given **positive** evaluation.

Study field and cycle assessment in points by evaluation areas

No.	Evaluation Area	Evaluation of an Area in points*
1.	Intended and achieved learning outcomes and curriculum	4
2.	Links between science (art) and studies	4
3.	Student admission and support	3
4.	Teaching and learning, student performance and graduate employment	3
5.	Teaching staff	4
6.	Learning facilities and resources	4
7.	Study quality management and public information	4
	Total:	26

*1 (unsatisfactory) - there are essential shortcomings that must be eliminated;
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III. STUDY FIELD ANALYSIS

3.1. INTENDED AND ACHIEVED LEARNING OUTCOMES AND CURRICULUM

Study aims, outcomes and content shall be assessed in accordance with the following indicators:

3.1.1. Evaluation of the conformity of the aims and outcomes of the field and cycle study programmes to the needs of the society and/or the labour market (not applicable to HEIs operating in exile conditions)

(1) Factual situation

The textiles and clothing sector is still an important part of the EU economy, and with new direction toward inventions, digitalization, sustainability and circular economy aims to strengthen industrial competitiveness. Also in Lithuania, textile, clothing and leather industry have a long time tradition. In 2019, this sector accounted for about 1,5% national GDP. The sector in the EU is based on small businesses, in Lithuania 98% companies are small and medium-sized. In spite of the large job losses in Europe, they still employ 1.5 million people. In Lithuania, the clothing industry is still an important source of employment, and accounts for about 2,5% of total employees. In Europe, the textiles and clothing sector generally require a more skilled workforce. In order to follow new development guidelines of the textiles and clothing manufacturing industry, and to maintain a lead in fashion, image and creativity, medium and above all highly skilled professionals are needed.
With upskilling toward the development of smart materials, innovative products, sustainable manufacturing technologies, digitalisation new competences are gained enabling professionals to respond to the demands of textiles and clothing industry in future. In SER it is reported that Lithuanian companies invest intensively in the implementation of digital technologies, the creation of their own brands, and the development of innovative and sustainable fashion products. According to Lithuanian Clothing and Textile Industry Association (LATIA) the future of the fashion industry is the sale of high-quality products with its own brands. The production of high value-added products and brand development are guidelines for future employees and educational institutions in the fashion industry. (SER p.11)
KTU implements the only university study in Lithuania in this sector, with the possibility to educate professionals with new skills and values, such as creativity. Study programmes enable integration of technological and engineering knowledge with product design and marketing.

(2) Expert judgement/indicator analysis

The aims and outcomes of 1st cycle *Fashion Engineering* SP and 2nd cycle *Fashion Innovation Technologies* SP, which are the only university studies in the country, are in conformity with the needs of the Lithuanian labour market. Both SPs focus on innovation and creativeness, which is in the context of EU strategy, giving opportunities for students to be part of the European labour market. From the SER and information gathered during on-site visit, good cooperation of KTU with social partners in the field of Polymers and Textile Technology is evident. High level of activities in national and international research projects provide up-to-date knowledge in fashion engineering incorporated into SPs. Though KTU already implements some activities devoted to the general public, more should be held to increase

social responsibility and incorporation of SP and KTU in the local community. Encouraging responsible technology transfer might be a good path for further development, too.

3.1.2. Evaluation of the conformity of the field and cycle study programme aims and outcomes with the mission, objectives of activities and strategy of the HEI

(1) Factual situation

The KTU has prepared a strategy for the period 2021-2025, which is accessible on the website.
KTU's vision is to be an interdisciplinary university, competitive at the international level, developing and transferring new knowledge and innovations. With studies develop the high added-value future members of society, with research and innovation develop knowledge and technologies corresponding to societal needs and their transfer to students, business and public sector, as well as insurance of effective performance of the University's activities and strengthening of the competencies of human resources. The mission is to be a proactive University creating a sustainable society, to create and transfer interdisciplinary knowledge and innovative technologies that create value.
According to the KTU the aim of the 1st cycle *Fashion Engineering* SP is to provide modern knowledge of fashion engineering, the ability to develop new and competitive products, research and design related materials and their production technologies, organise and plan engineering activities, adapting to the changing industry, business and social environment, taking legal, social and ethical responsibilities. The aim of the 2nd cycle *Fashion Innovation Technologies* SP is to provide integrated knowledge of fashion design, development and production as well as marketing technologies, to develop a holistic sophistication of fashion products and to develop ability to make more effective decisions based on scientific reasoning and principles of sustainable development.

(2) Expert judgement/indicator analysis

The main aims of 1st and 2nd cycle SP are well defined, and are in line with the KTU strategy and mission. The aims and learning outcomes of the 1st cycle *Fashion Engineering* SP follow the strategic priority to develop competence for self-expression and successful career, and of the 2nd cycle *Fashion Innovation Technologies* SP for development and transfer of technology and knowledge. Most intended learning outcomes of study subjects of the 1st cycle *Fashion Engineering* SP demonstrate knowledge and understanding and personal abilities, followed by practice. At 2nd cycle *Fashion Innovation Technologies* SP personal abilities, investigations, knowledge and understanding are more common. Both SPs are in accordance with the KTU study development guidelines, to include research and innovation, cooperation, interdisciplinarity, sustainability into the curriculum. The recommendations from the previous evaluation report have been taken into account and suitable actions have been made.

3.1.3. Evaluation of the compliance of the field and cycle study programme with legal requirements

(1) Factual situation

The first and second cycle study programmes are performed in compliance with the Descriptor of the study fields of Technology (Order No V-922 of the Minister of Education and Science of the Republic of Lithuania of 27 July 2015), Description of Study Cycles (Order No.

V-1012 of the Minister of Education and Science of the Republic of Lithuania, 2015) and the Description of General Requirements for the Provision of Studies (Order No. V-1168 of the Minister of Education and Science of the Republic of Lithuania, 2016).

Table No. 1. Compliance of the program Fashion Engineering with the general requirements for first cycle study programmes.

Criteria	Legal requirements	In the Programme
Scope of the programme in ECTS	180, 210 or 240 ECTS	240
ECTS for the study field	No less than 120 ECTS	132
ECTS for studies specified by University or optional studies	No more than 120 ECTS	18 + 12
ECTS for internship	No less than 15 ECTS	15
ECTS for final thesis (project)	No less than 15 ECTS	15
Contact hours (including distance contact hours)	No less than 20 % of learning (unless otherwise stated in the descriptor of study field)	40%

Table No. 2. Compliance of the program Fashion innovation technologies with general requirements for second cycle study programmes.

Criteria	Legal requirements	In the Programme
Scope of the programme in ECTS	90 or 120 ECTS	90
ECTS for the study field	No less than 60 ECTS	72
ECTS for studies specified by University or optional studies	No more than 30 ECTS	
ECTS for final thesis (project)	No less than 30 ECTS	30
Contact hours (including distance contact hours)	No less than 10 % of learning (unless otherwise stated in the descriptor of study field)	23%

(2) Expert judgement/indicator analysis

In the SER the study plan of 1st cycle *Fashion Engineering* SP is given, from which the distribution of subjects by semesters, distribution of students workload within the study subjects, credits allocated and assessment forms are evident. From what is shown in the document the compliance of the curriculum design with the legal requirements for University

first cycle study programmes is substantiated. In the same way, with distribution of study subjects by semesters, distribution of student workload within the subjects, credits allocated and assessment forms the study plan of 2nd cycle Fashion Engineering SP is given. The compliance of the curriculum design with the legal requirements for University second cycle study programmes is evident. The principles of composition of study credits based on student workload are described in the SER.
The learning outcomes of both SPs are grouped according to the Descriptor of the Study Fields of Technology in 5 groups: knowledge and understanding, technological analysis, technology design, investigation, practice and personal abilities. The links between the aim of SP, the intended learning outcomes and study subjects correspond to the predicted knowledge and competences in the study field Polymers and Textile Technology. The sufficiency of both SPs to ensure learning outcomes and conformity with the requirements of the legislation for university studies is evident. It can be confirmed that both SPs are relevant and adequate; the 1st cycle *Fashion Engineering* SP for the qualification degree Bachelor of Technological Science corresponding to the 6th level of the Lithuanian Qualifications Framework, whereas 2nd cycle *Fashion Innovation Technologies* SP for Master of Technological Science corresponding to the 7th level of the Lithuanian Qualifications Framework.

3.1.4. Evaluation of compatibility of aims, learning outcomes, teaching/learning and assessment methods of the field and cycle study programmes

(1) Factual situation

The learning outcomes of both, 1st and 2nd cycle SP are achieved through study results of each individual study subject in SP. Each subject outline contains a link of learning outcomes with the results (learning outcomes) of the study field, study literature, teaching/learning methods, assessment methods and criteria. Study subjects are composed of lectures and practical sessions with individual teacher consultations included. Laboratory work, performing projects and practical tests provide students with specific skills. According to SER innovative study methods, such as: case studies, problem-based learning or design-based thinking are also used. (SER p.15).
The assessment of knowledge is carried out on the basis of the order of the Rector of KTU. Different methods are used: written or oral examination, intermediate examination, test assignments with closed and/or open type assignments, problem solving, report and defence of laboratory works, oral reports, written assignments, individual or team project report, practice report, final project and its defence. A ten-point criterion scale and a cumulative assessment scheme are used.
According to SER during the COVID-19 pandemic the Moodle platform with plug-ins for external applications (Zoom, Ms Teams, BigBlueButton) was used as the main tool for remote contact work. (SER p.16)
The learning outcomes of subjects and their compliance with the SP are regularly reviewed in the academic units of faculty in cooperation with the study program managers, KSPV and the Study Program Committee of the Field (KSPK).

(2) Expert judgement/indicator analysis

The aims of both, 1st cycle *Fashion Engineering* SP and 2nd cycle *Fashion innovative technologies* SP are explicit and the intended learning outcomes are set realistically and can be reached. In the 1st cycle SP 23 learning outcomes are defined, whereas in 2nd cycle SP 21. It can be confirmed that coherence of the aims and intended learning outcomes of the SPs with

the learning outcomes of the study subjects is evident. The analysis has shown that learning outcomes of study subjects are arising from the SP learning outcomes.
Most study subjects in the 1st cycle SP give 2 or 3 learning outcomes of SP, some of them more, up to 8. Almost 35% of learning outcomes result in developing personal skills, 22% give knowledge and understanding, followed by engineering practice with 17%. Almost 30% of study subjects' learning outcomes are related to investigation, technological analysis and design. It is evident that besides professional competences students acquire a lot of general competences, which is required for a modern Bachelor of Technological Sciences. Emerging themes, such as digitalization, innovations and sustainability issues, are also included. At 2nd cycle *Fashion Innovation Technologies* SP study subjects have 4 to 8 learning outcomes of SP. Developing personal abilities, knowledge and understanding, ability to conduct investigations and apply engineering practices are similarly represented, from 16 to 20%. Programme includes emerging themes, and compared to 1st cycle SP students gain more research skills and special abilities.
KTU provides students with various teaching/learning methods. Most of them are student-centred teaching techniques. Such diversity of methods suggest a good probability that intended learning outcomes can be reached. Different assessment methods are used to assess the student achievement, with very few innovative methods. From the presented teaching/learning and assessment methods at each study subject is evident, that methods are adapted to the content and learning outcomes of subjects. In this way the assessment of intended student knowledge and skills obtained is possible and is coherent with the intended learning outcomes of SP.
Reviewing the elements of SP (the learning outcomes, the content, the number of credits and the volume of contact hours) continuously, ensures that intended student knowledge and skills are achieved and thus the quality of the study.

3.1.5. Evaluation of the totality of the field and cycle study programme subjects/modules, which ensures consistent development of competences of students

(1) Factual situation

The first cycle Bachelor's SP has two modes of studies, full-time and part-time study, with the same volume of study in credits. Part-time study is offered only at HEIs abroad, at 12 institutions in Europe. The full-time study at KTU is conducted in 8 semesters. The study load is 30 credits each semester, where one credit means 26.7 hours of student's work. SP is composed of study subjects belonging to general (12 credits), mathematics and physical sciences (33 credits), core engineering (18 credits), social sciences (15 credits), core textile technology field (102 credits), elective alternative subjects of the study field (12 credits), competence alternative subjects, including BA + or personal set of modules (18 credits), professional internship (15 credits) and final project (15 credits). The compulsory subjects from the group of general subjects, mathematics and physical sciences and core engineering are located in the first 3 semesters, whereas the main study subjects in the field of Polymers and Textile Technology are laid out in 2-5 semesters. Recommended semesters for elective core and compulsory subjects, competence or optional subjects are 5-7 semesters. In the last semester professional internship and final project are carried out.
The second cycle Master's SP is a full-time study conducted in 3 semesters. The study load is 30 credits each semester, where one credit means 26.7 hours of student's work. SP is composed of compulsory core subjects from the field of Polymers and Textile Technology, that are carried out in the first two semesters. Third semester is reserved for the Master's degree final project. The subjects of the first semester include design of scientific fashion research and various technologies, such as digital media, sustainable clothing, digital fashion and

wearable technologies. In the second semester research project and subjects relating to management, marketing, modelling of fashion products and innovations in fashion design are carried out.

(2) Expert judgement/indicator analysis

The structure of 1st cycle SP is well designed, balanced between compulsory and elective subjects, and between general and professional study field subjects leading to achievement of a broad range of competencies and skills. Study subjects are arranged in the way that first the basic engineering knowledge is acquired, besides professional as the main subjects in the field of Polymers and Textile Technology which are located mostly in the first two academic years. After that, students deepen their knowledge in the study field, and through internship, elective and competence subjects acquire social, research and personal skills. Such a structure of studies in HEI (MIDI) has another advantage, students can change their field of study after the first two years more easily, as study programs in other technological fields taught at KTU are similarly structured. According to SER the content of study subjects is regularly reviewed and updated in order to achieve the intended learning outcomes of the SP. KTU has developed a procedure for implementing these changes.
The 2nd cycle *Fashion innovation technologies* SP is a new study program, registered in 2021, derived from substantially renewed *Textile and clothing technologies* SP. New SP is designed to follow KTU strategy, includes the newest knowledge in the study field, emerging themes such as digitalization, innovation, sustainability and encourages research.

3.1.6. Evaluation of opportunities for students to personalise the structure of field study programmes according to their personal learning objectives and intended learning outcomes

(1) Factual situation

The 1st cycle SP enables personalization through freely elective subjects and through project topics. The personalisation of work is offered with general university subjects (alternatives of philosophy and sustainable development, alternatives of foreign languages at level C1, compulsory social science subjects) and alternatives of the study program (BA+ competence, product development project, KTU optional subjects). Students can choose from proposed project topics at the study subject Product Development Project and Bachelor's Final Project and work individually. KTU offers bridging courses in the first semester and additional subjects each semester for students participating in the GIFTed Talent Academy. Also the possibility for additional internships during the time off or in summer is offered.
The 2nd cycle SP enables personalization through choosing project topics individually in the subject Master's Final Project.

(2) Expert judgement/indicator analysis

Specialization is not included in the structure of the 1st cycle SP itself, however, the program allows a lot of possibilities for personalization of study. Students can choose from general elective, foreign language elective (English, German, French or Russian), competence subjects of BA+ elective, all together 30 credits. KTU has a list of optional study subjects, containing more than 100 subjects from different study fields. Including professional internship and final project students have 25% of SP personalised. It is commendable that the university offers additional education in the form of bridging courses to supplement missing knowledge and on the other side additional knowledge for talented students as well as additional internship. It is

clear that students have good opportunity to personalize the structure of SP according to their personal learning objectives and intended learning outcomes.
The 2nd cycle SP is much more closed, with no specialization and choosing freely elective subjects. Personalisation is possible within the study subject Research project by individually chosen research direction and at the Master's Degree Final Project, which is carried out individually. For the development of research skills and personal abilities it is recommendable to offer students more possibilities to personalize the structure of SP.

3.1.7. Evaluation of compliance of final theses with the field and cycle requirements

(1) Factual situation

The final project is prepared following the "Methodological Guidelines for the Preparation of Final Projects" of the faculty" and the whole procedure is regulated by the "The Guidelines for the Preparation and Defence of Final Degree Projects of KTU". The final projects are checked for similarity with other sources using the "Turnitin" system. In the 1st cycle SP the final project is evaluated with 15 credits, and in the 2nd cycle SP with 30 credits. According to the SER the major part of the 1st study cycle SP consists of topics relevant to industry and business institutions, whereas in the 2nd cycle SP also topics related to the problems solved in the research projects carried out by University are relevant. (SER p.18) In the 2nd cycle SP no final thesis has been prepared and defended yet.
The final project is prepared independently by students under the guidance of the project supervisor and is defended at a public meeting of the Qualification Commission of the study field. The commission has a minimum of 7 members and consists of the scientists of the student's study field, the practitioners-professionals, and the representatives of the employers/social partners. At least one member is from another institution. They assess the project and presentation of the project. The evaluation of the project consists of the sum of 3 components: the evaluation of the project by the reviewer, the evaluation of the project by the Qualification Commission and the evaluation of the defence by the Qualification Commission.

(2) Expert judgement/indicator analysis

KTU has developed a procedure for preparation and defence of the final project and the whole procedure is regulated by the order. The final projects are checked for plagiarism with anti-plagiarism software. It is commendable that students get a lot of support from the moment they chose the topic, through preparation of the final degree project till its defence. The final project is defended at a public meeting of the Qualification Commission of the study field, consisting of 7 members, where also representatives of the practitioners-professionals, employers/social partners are present and at least one member is from another institution.
Students can choose a topic for the final thesis that is in the area of their interest. The final project is prepared independently by students in some cases in cooperation with the social partners. Involvement of social partners provides the necessary industrial relevance to the final projects. KTU should encourage further such cooperation and strive to increase the number of final projects done in real working conditions and situations. Besides working with social partners, topics related to the research projects should be kept as priority for 2nd cycle study.
The final projects in the 1st cycle study are well structured, focused on practical applications and are in compliance with the field study and cycle requirements. From the final projects presented, it is evident that students are able to combine knowledge from different areas and apply the acquired knowledge in practice. The best evaluated final projects include innovative solutions, which should be encouraged further.

Since no final theses of 2nd cycle study SP were defended yet we can't give the opinion about the conformity of the content of final theses to the field study. Nevertheless, the final thesis of previous *Textile and Clothing Technologies* SP have been reviewed by the evaluation team. The masters theses seem to be on a very good level, most of them research oriented, which is confirmed by the fact that they were presented at the conferences.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Both SPs (1st and 2nd cycle) are on the level of studies for a Bachelor and Master degree in the textiles and clothing sector in the EU.
2. Students gain good professional competences needed in the textile and clothing sector and meet the current needs of the national and international labour market. Competences related to social skills and personal abilities are also obtained. In both SPs also development of research skills is an important part of SP, especially in 2nd cycle SP.
3. Research activities leading to new knowledge are well incorporated in SPs.
4. In the 1st cycle SP the opportunity to personalize the structure of SP according to students' personal learning objectives and intended learning outcomes is provided.

(2) Weaknesses:

1. It is difficult to evaluate the outcomes of 2nd cycle SP fully, because it is a new programme. Nevertheless, it is noted that 2nd cycle SP gives only limited opportunity for personalisation of study.
2. A minor shortcoming is associated with inclusion of digital technologies in greater extent into SPs, though the Faculty has already started to look more into virtual prototyping.

3.2. LINKS BETWEEN SCIENCE (ART) AND STUDIES

Links between science (art) and study activities shall be assessed in accordance with the following indicators:

3.2.1. Evaluation of the sufficiency of the science (applied science, art) activities implemented by the HEI for the field of research (art) related to the field of study

(1) Factual situation

The University has undergone scientific and comparative evaluations in recent years. The annual quantitative evaluation was performed by the Lithuanian Science Council (LMT), while the comparative qualitative evaluation was performed by the Center for Monitoring and Analysis of Science and Studies MOSTA (from 2019 STRATA).
Table 2.1. in SER present the result of the 3-year LMT scientific evaluation. The increase of scientific output in research and experimental development and art activities of KTU researchers is observed. The designated parameter "Weighted sum of points (Points for scientific works (publications) and works of art)" increased from 152,33 in 2018, to 206,25 in 2019 and 237,21 in 2020, while maintaining a similar level equivalent of a researchers' working day.
In the framework of the MOSTA evaluation, the study field of Materials Engineering in the field of Technological Sciences KTU was evaluated as: very good (4 points) for quality of R&D activities, good (3) socio-economic impact of R&D activities and satisfactory (2 points) viability of R&D activities. The report emphasizes in particular:

- KTU is engaged in high-level, internationally recognized scientific activities in the field of Materials Engineering
- basic research and applied interdisciplinary projects are carried out and research is well organised, including its directions and leaders
- good intensity of research at both – international and national level
- good number of publications in top quality journals and increase of number of foreign researchers in the authorship of scientific articles
- most of the conference activities take place in the Baltic region
- the decrease of the income from research over the analysed period
- impressive number of doctoral candidates with good proportion of international candidates which emphasizes the role of academic development at KTU

The implementation of the (applied science, art) activities to the field of study is connected to the scientific activity of scientists who teach in both cycles of studies. Teachers provide the topics of final projects for students from their own projects, or they are outsourcing with companies. The University also creates opportunities for students to individualise the course of studies by selecting the research topic.

The high quality of teaching personnel for both cycles is evidenced by, among others, conducting classes by outstanding scientists of international renown and scientific achievements, as well as by their research output e.g. carrying out active research, preparing high-level scientific publications, participating in international conferences, international projects and doctoral studies activities.

Table 2.3. in SER presents an impressive increase of research projects carried out at KTU (in total almost a 3-fold increase from the year 2018 to 2020), including international projects. The report shows the overall increasing activity of researchers in: preparation of scientific publications, providing R&D services to external entities, participation in EU research and innovation programs (Horizon 2020), the European Space Agency program, and cross-border programs. In particular, it is worth noting that the number of publications indexed in Web of science increased over the years 2018-2021 (from 9 in 2018 to 23 in 2021, however, the share of the "other peer-reviewed publications in national publishers" and "conference report" constitute a quite big number.

KTU develops its competencies also in the area of study projects, bilateral cooperation and national projects, as well as projects funded from EU Structural Funds. Special distinction must be granted for taking part in the international ERASMUS + Erasmus Mundus Joint Master Degrees „World Textile Engineering Advanced Master" (WE-TEAM).

The integration is also being realized through R&D activities and close cooperation with the companies in solving the development and research of new materials, optimization of technological processes etc. What is more - students are encouraged to participate in the KTU Academic Mentoring Program which involves taking part in the national and international projects, enabling them to prepare papers at scientific conferences, to publish research results in conference proceedings and in high-level international journals.

Table 2.5. in SER presents a massive increase in earned income from international and national projects, R&D activities and other services over the years 2018 and 2020 which confirms strong connection of the University to the scientific activities related to the field.

(2) Expert judgement/indicator analysis

The results of the last evaluation are presented and analysed. KTU is actively participating in national and international projects (including the most prestigious ones like Horizon 2020), international undertakings and networks and carry out collaboration with external partners which creates a favourable environment and conditions for the development of not only students of the first and second cycle of the analysed studies, but also scientists, teachers and

other staff (administrative, technical, etc.), which proves that these activities are strongly integrated into the daily routine of the university. In addition, the University places great emphasis on the performance of teachers who conduct classes with students in both cycles - they usually are active scientists, often well-known in the field, conducting research on current topics related to the area of study, publishing articles in high-quality international and national scientific journals, who include students in research works, conferences, writing scientific articles and provide the subject of bachelor and master's theses from their own projects. It is worth mentioning that the University also develops the administrative and organizational aspect of studies through participation in educational projects and projects aimed at increasing cooperation with national and international external units. The adequacy of integration of scientific activity (applied science, art) related to the field of study is also visible in the field of very strongly outlined cooperation with entrepreneurs and companies for which R&D works are carried out (from which University gains considerable financial profits), and which order the subject of students' diploma theses, allowing them to develop real problem-solving skills that are useful for their situation on the job market.

3.2.2. Evaluation of the link between the content of studies and the latest developments in science, art and technology

(1) Factual situation

First and second cycle SP in the field of Polymer and Textile Technologies provided by the University are the ones in the country. The University developed and assigned 5 priority research directions approved by the Senate in 2013 which are:

- diagnostic and measurement technologies,
- smart environments and information technologies,
- new materials for high technologies,
- technologies for sustainable development and energy,
- sustainable socio-cultural development

In addition to the above, the University Senate approved 5 R&D breakthrough directions, which include health technologies, digital transformation and smart environments, new materials for industry and medicine, food technology, and innovation management.
KTU puts strong emphasis on the performance and competencies of the teaching staff, as described in point 3.2.1. in SER, as well as connection between the latest trends in the textile and clothing industry is ensured by the social partners involved in the implementation of the SP, participating in the program management process, and contributing to the implementation of the SP content.
KTU offers interesting programs for students e.g. mentioned Mentorship Programme, or KTU "GIFTed" Talent Academy. The last one provides students with possibility to develop research and business areas through e.g. participation in advanced level lectures; in the international interdisciplinary projects, participation in the programme for personal development and emotional intelligence development, as well as the intense cooperation with the business representatives, bilateral exchange or "Erasmus+" programme; completion of the internship at the most competitive Lithuanian and international business enterprises.

(2) Expert judgement/indicator analysis

Teachers in the field for both cycles of study are involved in different research, design, and art activities and therefore, their scientific and didactic competencies enable successful integration of the latest scientific knowledge and technological achievements into study subjects (modules) they are supervising. The University participates in the European

Universities Alliances and puts strong emphasis on the development of teaching and other competences, e.g. through various types of training and dedicated events and initiatives. KTU involves external partners in the program management process and implementation of the study program.

3.2.3. Evaluation of conditions for students to get involved in scientific (applied science, art) activities consistent with their study cycle

(1) Factual situation

The research activities are strongly integrated in the 2nd cycle SP, as 75% of all students studying in the field took part in any kind of research activity, while for 1st cycle SP only 21%. The list of first and second cycle theses presented in Annexes 5 and 6, proves that students are involved in the real-world problem solving and are realising the trends-oriented topics for theses which are often given by the company. 10% of first cycle theses were conducted in cooperation with the company (4/44), while for second cycle 30% of theses were topics ordered by a company (5/15) over the years 2018 – 2021.
KTU offers at least two mentoring programs that allow students to take part in research activities. 30 students took part in such programs over the years 2017 – 2020.
Apart from the above, KTU organises event and social activities for students to encourage them for involving in research activities such as summer school, virtual or onsite internships in the framework of Erasmus+ program.

(2) Expert judgement/indicator analysis

KTU provides many opportunities for students to get involved in the scientific (applied science or art) activities. This is done, among others, by selecting teaching staff with specific skills and achievements in science, research, design, and arts, who are also mentoring and supporting students in their development and supervising their final projects, but also by participating in various activities such as programs to support the development of talented students, participation in research projects, individual projects, conferences, summer schools, in joint publications preparation and participation in works commissioned by external partners (business and industry).

Strengths and weaknesses of this evaluation area:

(1) Strengths:
1. The University is strongly oriented towards the practical teaching and acquiring practical skills (in general in research, applied research and art), therefore students of both cycles are having numerous possibilities to join different activities developing their future practical and transferable skills
2. Strong emphasis is put on the quality of teaching staff providing lectures, which usually are active researchers, with good and very good scientific achievements, and experience in the didactic, as well as often – they have experience in the business or industrial activities.
3. A positive aspect is also the employment of young scientists to conduct the classes (persons up to 7 years after the doctorate), apart from very experienced teachers to enable them to develop their research and teaching careers. Maintaining such a balance will ensure the best conditions for education for students.

4. The University is open for different methods of student support and invests regularly in mentoring and talent programs, in which selected students can have a very individual path of learning and acquiring skills.
5. The content of the first and second cycle study programs is linked to the latest scientific and technological achievements.
6. The 2nd cycle SP provides students with competencies and skills allowing them to pursue their further carrier in science and give them good preparation for searching jobs in international environment (some 2nd cycle students after completing studies at the University will have a list of scientific achievements)
7. University has numerous and well-established connection with external partner from different areas (industry, business, art and design sector) which testifies to the importance of this cooperation and the research policy adopted by the University, as well as the fact that the University to a large extent carries out research and teaching of a practical and useful nature for society and the economy, as evidenced by numerous final project (theses) carried out on demand of the external partners.

(2) Weaknesses:

1. In order to reach excellence the number of publications in all categories as well as the number of publications in high-level peer-reviewed journals/per lecturer/per year which is now on average level, should be increased. Research activities directed to new emerging topics in the field of study would help to increase the number of citations and h-index for researchers. It would also mean more opportunities for students to be actively involved in publishing activities resulting in gaining new skills.

3.3. STUDENT ADMISSION AND SUPPORT

Student admission and support shall be evaluated according to the following indicators:

3.3.1. Evaluation of the suitability and publicity of student selection and admission criteria and process

(1) Factual situation

For both cycles the admission rules are regulated by the "Rules for Admission of Students to Kaunas University of Technology in 2021" and are published on the University website in national language and in English. The admission to the KTU is organised in two ways:

- the general admission carried out through the Lithuanian Association of Higher Education (MALA BPO) – 3 stages,
- the institutional admission – 2 stages, only to study places not financed by the state.

Information about the places and deadlines for admission is publicly available on the website. All relevant information and documents are available in English.
In general, the analysis of admissions for both cycles (Tables 3.1 – 3.3 in SER) are in line with trends of enrolment to HEIs although they significantly decreased over the years 2018-2020. For example, the admission to the 1st cycle SP was suspended in 2020 due to insufficient number of wishing to study candidates at University by the first choice.
The analysis of the admission to the *Fashion Engineering* SP shows the decrease in number of applications from 13 to 9 over the years 2018 – 2021 which is connected to the negative demographic changes and might be a possible effect of the COVID-19 pandemic too. A positive information is the increase in the lowest competitive score from 3.92 in 2018 to 5.53 in 2021 and an increase in average competitive score from 5.6 to 6.9, which informs about the higher quality of candidates admitted, while the highest competitive score slightly decreased.

For the 2nd cycle SP the decrease of number of applicants is less visible and remains on the same level for the last 3 years. But, in this case a significant decrease in lowest competitive score is visible, from 7.55 in 2018 to 5.92 in 2021. The average competitive score dropped from 7.65 in 2018 to 6.80 in 2021 as well. The highest competitive score slightly fluctuated over the years 2018 – 2021, however in general remained on the relatively high level.
Table 3.2. in SER presents the number of applicants in order of priority. It is visible that for the 1st cycle studies, the KTU is often selected as the first priority (12 in 2018), however this changed from 2020 (2 in 2020). The total number of applications for 1st cycle SP also decreased from 36 in 2018 and 38 in 2019, until it reaches 2 persons in 2020. There are much less candidates for the 2nd cycle SP (in comparison to 1st cycle studies in 2018: 36 for 1st cycle, and 3 for 2nd cycle).
KTU undertook a series of actions aiming at the analysis of the situation and finding possible solutions, especially in the area of attracting candidates. Especially, the KTU struggles to attract students for 2nd cycle studies due to, among others, significant shortage of employees in the sector which causes that majority of graduates of the 1st cycle are entering the job market and do not want to continue for 2nd cycle studies or significant gaps in knowledge of candidates from outside of the University that requires additional efforts and completing the bridging courses. Some of the actions included:
- inclusion of the additional study subject "Information Technologies" as the second competitive subject as a response to the industrial market and relevance to the employees of the textile and clothing industry,
- KTU took actions to attract more enrolments e.g. by providing bridging courses for candidates from outside of the University to join the admission process for 2nd cycle SP,
- KTU organizes special information events and thematic meetings with fourth-year students for 1st cycle students to enhance them for applying for 2nd cycle SP
- to meet the job market's needs and to attract graduates, a new SP "*Fashion Innovation Technology*" was launched in 2021.
KTU places great emphasis on the advertising and marketing of SPs which includes: cooperate with the coordinators of the University's Marketing and Communication Department and the International Relations Department, presentation of programs at the annual of programs at the annual Higher Education Fair, taking part in the annual BALTIC FASHION & TEXTILE Vilnius exhibition, and numerous very important scientific events and support activities like Open Door events, interactive classes and program presentations for students, Researchers' Night, Spaceship Earth, Technorama, Children's University, School of Young Engineers, etc.

(2) Expert judgement/indicator analysis

The requirements for admission to the SP are publicly available on the University website. The website is very informative and clear and all procedures are also in English versions. The documents specify procedures for awarding general and additional points. The required data on the admission to the field study programmes is provided and analysed in the report. All admission scores are presented and analysed. KTU analyses the tendencies and undertakes actions to adjust to the current situation (e.g. from 2022 "Information Technology" was included as the second competitive subject and it was a response to the development trends of the industry) in order to attract more candidates to SP at KTU.

3.3.2. Evaluation of the procedure of recognition of foreign qualifications, partial studies and prior non-formal and informal learning and its application

(1) Factual situation

The acknowledgement of foreign qualifications, partial studies and prior non-formal and informal learning and its application are based on state and University regulations that are available on the KTU website in English.
Up to 75% of the 1st cycle SP, and 25% of the 2nd cycle and vocational SPs, and 40% of the integrated SP, can be credited based on the results of the previous formal learning if it fulfils the compliance requirements of the formal and subject nature. The final project cannot be credited.
KTU assesses the non-formal and informal learning achievements and competencies that can be recognized as learning outcomes. Candidates may apply for up to 50% of the volume of the SP based on an assessment of learning achievements acquired through work, non-formal adult education system, unpaid or voluntary work, internships, courses, seminars, projects, and self-study.

The recognition of the results from other HEIs (Erasmus+ or part-time studies) is based on the study plan agreed upon with the Vice-Dean for Studies of the Faculty of Mechanical Engineering and Design. The requirement is the recognition as corresponding to the type and level of studies, as well as the detailed procedures for crediting of partial study results and financing are in place.

(2) Expert judgement/indicator analysis

The University's website is attractive and provides all required information for international candidates. The principles of recognition of foreign qualifications, partial learning outcomes, prior learning and other learning as well as information on their application are in place. All information is placed in an understandable way on the website and is in English. Data of the last 3 years on accredited and non-accredited cases of recognition of results are presented in SER with comments. Procedures for the assessment of non-formal and informal learning achievements and the recognition of competencies, are in place. Candidates may apply for an assessment of learning achievements acquired through e.g. work, the non-formal adult education system, unpaid or voluntary work, internships and self-study. However, no more than 50% of the volume of the study program to be studied may be credited, and the final project cannot be credited.

3.3.3. Evaluation of conditions for ensuring academic mobility of students.

(1) Factual situation

KTU students are provided with the opportunities to complete an international internship or partial studies abroad. The institution provides different forms of academic mobility: physical (students physically go abroad); mixed (combining physical mobility with virtual activities); and fully virtual mobility. Information about the mobility opportunities is available for students on the website ktu.edu, in the newsletters of the University, other publications, and events. A variety of events promoting the mobility programmes are organised each academic year at the faculty and University level.
Travel and accommodation costs during the studies abroad have to be financed by the students but they have a chance to get a KTU mobility scholarship. Students can also complete the exchange studies under the NORDTEK, State Scholarships and other programmes (internships at Lithuanian schools, Lithuanian centres and Lithuanian communities, etc. and participate in the "BALTECH" Consortium short-term traineeships). Students can leave for the internship for an entire year with the permission of the Vice-Rector for Studies. In this case, they are granted an academic leave of absence.

KTU offers a special program titled “KTU DISCOVERed International Student Exchange” for encouraging students for mobility. It organizes many different events regularly, at which students share their experiences from mobility and candidates can receive information and support in this area. The University also provides a module of “Intercultural Learning” (3 credits), provided before and after the academic exchange.
During the analysed period 4 of the Bachelor's degree study circle students did part-time studies, 3 did internships; 6 of the Master's degree study circle students did part-time studies abroad; 2 students came to the first cycle SP and 9 students to the second cycle SP. There were no students who came for full time studies during this period. These numbers were strongly impacted by the diminished possibility and reduced allure of international travel during the COVID pandemic, non the less both out-coming and in-coming student numbers are low for this time period.

(2) Expert judgement/indicator analysis

Analysing the given KTU data of mobility it is clear to see that the HEI provides various activities promoting opportunities for academic mobility and a part of the students uses these opportunities. KTU does a lot of different communication towards motivating students to participate in academic mobility. During onsite visit it was communicated that students receive a great deal of information from the KTU and faculty via email, social media and internal channels and there is an Erasmus coordinator in place. However, it was noticed that students should receive more administrative support in their preparations for the academic mobility process. KTU should also increase the number of signed agreements between HEIs in order to diversify the choice to establish a mobility visit.
It was also noticed that the faculty administration does not follow up on the students' experience after the finished academic mobility programme, only international HEI team monitors and carries out individual meetings with students who have completed the programme.

3.3.4. Assessment of the suitability, adequacy and effectiveness of the academic, financial, social, psychological and personal support provided to the students of the field

(1) Factual situation

All students are eligible to apply for academic, financial, personal, social, and psychological support. KTU has implemented different types of programmes that provide support to the students in mentioned fields: “GUIDed” Mentorship Programme, “GIFTed” Talent Academy, individual consultations by teachers, etc. The related information for the students is provided at KTU Student Information and Service Centre and on KTU website, at the Study Center of the Faculty of Mechanical Engineering and Design;
KTU has several different forms of financial help for students: the University’s talent scholarships; the nominal Patron’s (Sponsor’s) scholarships; one-off incentive scholarships for active participation in the extracurricular activities. During the analysed period, the students of the study field were awarded 4 talent scholarships, 29 one-time incentive scholarships and 3 one-time targeted scholarships, 5 talent scholarships, 33 one-time incentive scholarships were awarded in 2019-2020; 4 one-off incentive scholarships were awarded in 2020-2021. In addition to financial help KTU may reduce annual or semester tuition fees. All the information related to the financial support opportunities offered by KTU, the conditions and the requirements for the submission of documents is provided on KTU website.

KTU has multiple social clubs exist for enthusiasts (i.e. dancing, singing, acting, etc.). The institution also encourages activities of non formal education programmes.
The institution works along with a medical clinic providing primary personal health care services to KTU students free of charge. KTU provides free psychological and spiritual support to students. KTU has 2 psychologists and two active chapels at the University.

(2) Expert judgement/indicator analysis

KTU offers numerous types of support for their students, not only financial and career support, but also psychological support systems and social support are well organised. All required information is publicly available on the website and other information systems are in place, including dedicated entities and administration or people in charge.
The assumptions of all mentoring programs are very legitimate and are certainly of great support to students, however the participation criteria seems to be set too high which means that students cannot take advantage of these programs. Two applications for the GIFTed program were completed in 2018, but students did not pass to the next stages. During the onsite visit, it was communicated that the students receive this information and understand the support opportunities that they are able to use.
Students are also provided with opportunities to stay in KTU provided housing during their studies. The process of getting a place in the dormitory was described as easy: once the students are in the KTU system, they can ask for a space in the room via internal online systems. KTU should continue the renovation and increase the standard of the older dormitories in order to provide all students with equal conditions, a favourable environment for development and improve accessibility for students with special needs. The price of the newly renovated rooms should not be too high and price reductions should be possible.

3.3.5 Evaluation of the sufficiency of study information and student counselling

(1) Factual situation

KTU provides a guide to the students admitted to the study programme and the communication is conducted via email. One week before their studies, the students participate in the event "Welcome Week", where they learn about the procedure of studies, the available information systems and additional help from the institution and provided opportunities.
KTU also runs the Study@KTU Ambassadors programme that represents the University to prospective students, their families and the community of the KTU.
The students' interests are represented by KTU Students' Association and the Students' Association of the faculty of Mechanical Engineering and Design.

(2) Expert judgement/indicator analysis

During the first introduction week students receive information about KTU internal systems, educational process, available support and ect. Student Association periodically organises meetings (focus groups) with students and administration to understand and solve uprising questions and problems. Onsite visit reveal that the students and administration have a strong mutual bond and a lot of support programmes implemented that students can use anytime. It was stated that the administration reaches out to students periodically.
The full time students and international students have a strong bond with the KTU Students' Association of the faculty. Bachelor degree students reach out to the Association periodically, Masters degree students don't communicate with the association often but do know that they have the possibility to do so.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Multiple strong support programmes for the students.
2. KTU has a very clear, informative and attractive website. All information is available in English, as well as all information and documents regarding admission to studies and others are available in English.
3. There is strong emphasis put on the mentoring and counselling of students at different stages and in different areas. Many programs dedicated for these purposes are in place.

(2) Weaknesses:

1. Regular surveying of the results of the mentoring and support programs needs to be introduced.
2. Actions directed towards the increase of possible candidates for second and first cycle studies needs to be regularly revised, adjusted and developed.
3. The strong cooperation with different foreign HEIs which KTU conducts through many years seems to be not used to its full extent.
4. Students feel that they get an overwhelming amount of information from the KTU.
5. Students need to finance their study related projects themselves. KTU should provide additional funds, e.g. project-oriented scholarships for supporting students in their studies.
6. Not a wide choice of international establishments to visit for academic mobility. KTU should try to broaden its scope of cooperation with other foreign institutions and sign more bilateral or multilateral agreements on educational and research cooperation.

3.4. TEACHING AND LEARNING, STUDENT PERFORMANCE AND GRADUATE EMPLOYMENT

Studying, student performance and graduate employment shall be evaluated according to the following indicators:

3.4.1. Evaluation of the teaching and learning process that enables to take into account the needs of the students and enable them to achieve the intended learning outcomes

(1) Factual situation

KTU encourages active participation and creativity of students by implementing project activities, design based thinking, challenge-based learning, creative workshops, teamwork, study visits, discussions, interview, problem-solving sessions, activity reflection, idea maps, etc. and also practical activities. KTU provides systems for students to self-evaluate their work and systems for teachers to follow the students progress and evaluate if the students need adjustments in their task, or additional help, individual consultations.
The faculty staff ensures continuous and inclusive student work throughout the study semester, and applies a system of cumulative assessment of study results.
Graduates of the study program in the field of Polymers and Textile technology have the opportunity to continue their studies, 1st cycle graduates - at a master's degree, and 2nd cycle graduates - at a doctoral program with a possibility to continue their studies also in foreign institutions.

(2) Expert judgement/indicator analysis

Students are acquainted with the expected learning outcomes. Teachers inform students about learning outcomes of study subjects and SP in the beginning of semester. Every study subject has a description of content, and during the first meeting the outcomes are presented. Students have multiple opportunities to have consultations with the teaching staff. At onsite visit students stated that the SP is well organised and the study material they get is valuable. Students' opinion is valued and matters to the teaching staff and administration, their relationship is mutual and strong.

3.4.2. Evaluation of conditions ensuring access to study for socially vulnerable groups and students with special needs

(1) Factual situation

KTU organises its activities by implementing the Equal Opportunities and Diversity Policy and aims to provide equal opportunities for studies and work to all the community members, including the disadvantaged groups of students and the students with special needs. The Faculty of Mechanical Engineering and Design (MIDF) spaces (Library spaces, computer classes and laboratories) are adapted for students with reduced mobility. KTU also has an active survey for the students with disabilities and/or learning difficulties available on the KTU website. This survey helps identify the students personal needs and help with corrections in the study process, by adapting it for individual cases.
In addition the Department of Student Affairs in cooperation with KTU Students' Association initiates education events for the KTU community: specialised training for the administration and teachers on the topics of learning about disabilities, ethics and adaptation of studies, universal design.
In the both SPs evaluated none of the students with special needs was enrolled during the evaluated period.

(2) Expert judgement/indicator analysis

KTU seems to provide standard conditions ensuring access to study for students with special needs. It also provides specialised training for the academic staff, and educates on topics about disability. There is financial help and opportunities to individualise the study process and equipment is provided in the libraries and classrooms for students with special needs.
At onsite visit it was communicated that the faculty where both SPs are conducted is not adapted enough for students with special needs, but there were no students with special needs present.

3.4.3. Evaluation of the systematic nature of the monitoring of student study progress and feedback to students to promote self-assessment and subsequent planning of study progress

(1) Factual situation

In September, there is an annual report of the student results which is submitted to the Rectorate. This report covers:

- Indicators of student progress and re-education;
- Evaluates the effectiveness of new study quality measures;
- Reasons for termination;
- Results of attendance;
- Testing of equalization courses.

The Study Programme Committee of Materials, Polymers and Textile Technology field monitors students' achievements in the Academic Information System and includes:

- Overall average of studies;
- Data of interim and final examinations of the current semester;
- Records of participation in classes.

Based on the monitoring outcomes, the student may be offered the services of an academic mentor.

To monitor the student engagement with the activities of the programme, the Early Warning System is administered by the Faculty Study Centre. The system monitors the assessment of student modules and participation in classes, analyses the individual situation of students, and communicates with students to support the student academic journey.

The progress of students' studies is monitored throughout the semester, and the tutor provides feedback orally or through Moodle platform. The monitoring is performed by:

- intermediate reports of the subject;
- organising control works;
- defending laboratory works;
- organizing repeated reports.

(2) Expert judgement/indicator analysis

There are university and department level systems in place to monitor the student progress. This includes the monitoring of student outcomes and engagement with the programme. There is a system in place to provide support to students with low levels of academic engagement. The opportunities for student self-reflection and development are not explicitly evident. It is academically relevant to provide the feedback in different formats; however, it is important that the feedback is recorded so the student can access it later on as well.

3.4.4. Evaluation of employability of graduates and graduate career tracking in the study field.

(1) Factual situation

Employability of graduates is quite good. As stated in the SER, up to 72.7% of the first-cycle and up to 84.7% of the second-cycle graduates find employment within 6 months after graduation, though this differs from year to year as seen from Table 4.1 (SER p.42). Graduates are employed in national and international textile and clothing production companies according to the acquired profession. More than half of the master's students continue their career during their studies, while bachelors usually find employment during the final semester after professional practice. (SER p.43) After graduation, ⅓ of bachelors continue their studies in postgraduate programmes. More than 90% of postgraduate students combine their studies with a professional career.

Career management services provided by KTU are accessible to students of both SPs. Data for monitoring the employment and career of graduates of the field are collected in various ways.

The feedback of students and graduates are collected to improve the quality of studies. The graduates' feedback about the demands of the labour market is collected and reveals that graduates have the needed professional competencies, even the latest technology knowledge and management knowledge to enter the labor market.

(2) Expert judgement/indicator analysis

Career monitoring of graduates is quite well developed at KTU. The statistics of graduates' employability is adequate. The institution's close relationship with the clothing industry and

social partners is the basis for good student employment rates. Graduates are prepared in accordance with the needs of the labor market.

3.4.5. Evaluation of the implementation of policies to ensure academic integrity, tolerance and non-discrimination

(1) Factual situation

The University complies with the Code of Academic Ethics, and any member of the University has the right to report concerns on academic integrity. To ensure Academic Integrity, the University has following key practices in place:

- Physical confirmation of the personal identity during examination.
- To conduct examination by the commission of invigilators.
- Individual presentation of practical work.
- Detailed guidance and support (such as by the library) on referencing
- Similarity checks through integrated software in Moodle.
- Penalties for the breaches of academic integrity (both students/staff).

To assure tolerance and non-discrimination, the University has implemented Equal Opportunities and Diversity Policy. Any complaints are dealt by the Commission of Equal Rights of the University. There have been no reported cases linked to academic integrity.
Please note that the heading of the section does not correspond to the contents of the section.

(2) Expert judgement/indicator analysis

The policies to ensure academic integrity tolerance and non-discrimination are in place, and there are clear mechanisms to deal with these matters. It is commendable that there were no complaints linked to tolerance and harassment. However, we find it surprising that there were no reported cases of academic integrity. It would have been useful to include details of the quality checks and any external examination of the programme assessments and teaching activities.

3.4.6. Evaluation of the effectiveness of the application of procedures for the submission and examination of appeals and complaints regarding the study process within the field studies

(1) Factual situation

The University applies the "Guidelines for the Submission and Processing of the Students' Appeals and Complaints". An appeal is submitted individually while a complaint can be submitted by one student or a group of students. Once any appeal/complaint is submitted, it is transferred to the head responsible for the area of activities that sets up an interim board of appeal or a complaint settlement commission (consisting of at least 3 members including one representative of students) which is decided within 10 working days. If there are any reservations, the student has a right to apply to the University's Dispute Settlement Commission within 10 working days. During the assessment period, students in the field of Polymers and Textile Technologies did not submit an appeal or complaint.

(2) Expert judgement/indicator analysis

The University has a process in place to handle any appeals/complaints. The appeal is decided in a reasonable timeframe and there is opportunity to contest any decision. We find it surprising that there were no complaints/appeals. Generally, during the pandemic, there have

been higher instances of student complaints as the Universities transitioned to online/blended learning.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. The students are fully informed about the study outcomes.
2. The policies to ensure tolerance and non-discrimination are in place, and there are clear mechanisms to deal with these matters. The reasons for no complaints/appeals despite the pandemic needs to be further looked into.
3. There are university and department level systems in place to monitor the student progress. This includes a system in place to provide support to students with low level of academic engagement.

(2) Weaknesses:

1. Weak adaptivity of study spaces for students with special needs.
2. The Academic Integrity process needs to be clearly defined, and applied for all submitted works. The students can be provided support and example access to the similarity check at the start of study cycle.
3. The opportunities for student self-reflection and development are not explicitly evident. The University can consider conducting assessment mapping to assess the opportunities of self-reflection for students.

3.5. TEACHING STAFF

Study field teaching staff shall be evaluated in accordance with the following indicators:

3.5.1. Evaluation of the adequacy of the number, qualification and competence (scientific, didactic, professional) of teaching staff within a field study programme(s) at the HEI in order to achieve the learning outcomes

(1) Factual situation

The study subjects of both SPs are taught by the teacher from different Faculties of the University, which justifies the interdisciplinary nature of the studies. All lectures are employees of the KTU for at least 0.5 full time position. The report presents the statistical distribution of teachers with different degrees and positions in reference to the study cycle they teach in. The number of teachers delivering lectures in both study programs satisfies the formal requirements. 16% of teaching staff are active practitioners being currently employed in business or being entrepreneurs. All teachers' profiles, achievements, interests and practical and didactic experience are presented in SER (Annex 13). Staff changes at the University in the evaluated period are negligible, although several scientific promotions took place (e.g. 3 lecturers were awarded the title of a professor).
KTU employs teachers through a competition and evaluates their results every 5 years (pedagogical, methodological and scientific work).
The average experience of a teacher's pedagogical work is 20 years. The average age of the teachers of the 1st cycle SP is 45 years, the average age of the teachers of the 2nd cycle study program is 50 years.

Table No. 3. Teachers meet the general requirements for the first cycle studies

Requirement stated in Description of General Requirements for the Provision of Studies	In the Fashion Engineering study programme of the first cycle
No less than 50% of study field subjects must be taught by scientists or recognized artists	94% of the first cycle SP teachers have a doctoral degree

Table No. 4. Teachers meet the general requirements for the second cycle studies

Requirement stated in Description of General Requirements for the Provision of Studies	In Fashion innovation technologies study programme of the second cycle
No less than 80% of all study subjects teachers must have a scientific degree (or be renowned artists)	100 percent of the second cycle SP teachers have a doctoral degree
The remaining share (20%) of teachers may be practitioners who, in the period of recent 7 years, have gained at least 3 years of experience in professional activities which correspond to the taught applied subjects.	The criteria is met (as above).
No less than 20% of major study field subjects' volume has to be taught by teachers occupying the position of a Professors	In the program, with the volume of 120 ECTS, professors taught: 30 credits, which accounted for 25 percent from the scope of subject in the field. In the program, with the volume of 90 ECTS, professors will teach 19 credits, which is 21 percent from the scope of subject in the field.

Teachers of the 1st and 2nd cycle SP take part in the doctoral supervision and give lectures to 3rd cycle studies. The current student-teachers ratio in average is 12 over the years 2018 – 2020, and the increase is visible in the year 2020 due to the increase in the number of students.

Teachers on both SPs are actively participating in different kinds of scientific and business & art activities, events, as well as they increase their competencies on a regular basis through different training and courses, including courses increasing didactic skills.

KTU actively involves social partners in the study programs and to organize guest lectures of renowned practitioners and visiting professors (53% of all lecturers in the field during the last 3 years) to introduce students to the latest technologies and business trends, either in the form of integrated modules of the SP or as open courses. Some examples:

- lecture on the development of fashion products (AB Brand Machine Europe, 2018);
- "Development of new products" (Ikea, 2018);

- "Electroconductive textiles. Discussion on smart prototypes worked out by students and researchers of RTU "(RTU, 2018);
- "Uniforms of Lithuanian Customs Officers" (Customs Department, 2020) and more.

In case of language proficiency, KTU adopted a Language Policy. The teachers of the SP in English have level C1 of proficiency. During the assessment period, 56% of the teachers of the SPs in the field of Polymers and Textile Technology foreign language level were set as B2 and above. KTU offers unpaid English language lectures for teachers, and within the evaluated period 50% of the teachers of the study field have this opportunity.

(2) Expert judgement/indicator analysis

The list of permanent teaching staff with full profile, description of achievements, scientific and other activities, skills and competencies, as well as subjects taught was provided. The academic staff has sufficient and sometimes outstanding experience in research and didactic work to enable the successful implementation and achievements of the results of the 1st and 2nd SP. The ratio student-teacher in the evaluated period remains at a relatively high level, which can suggest insufficient number of staff, but due to the reduction in the number of students by 2020 it has dropped to an average of ca. 11. The University actively involves social and industrial partners for giving lectures for students which increase the practical value of the SP offered. The dynamics of teaching staff turnover is negligible. Insufficient information was provided on the way of replacement of the retired teaching staff. The language literacy of teachers providing lectures is at an acceptable level. Teachers increase their English language and other skills through courses offered by the KTU and outside.

3.5.2. Evaluation of conditions for ensuring teaching staffs' academic mobility (not applicable to studies carried out by HEIs operating under the conditions of exile)

(1) Factual situation

According to the report as a whole, students and teachers are being encouraged to take part in different kinds of mobility. KTU offers numerous occasions for it through sharing information on the website, ongoing projects (especially Erasmus+). In the evaluated period 44% of teachers in the field have benefited from the Erasmus+ program and 3 teachers of the program give lectures in the joint Master's program in Textile Engineering WE-TEAM.

(2) Expert judgement/indicator analysis

Systems to support and encourage participation in teacher mobility are implemented. Almost half of the teachers giving lectures in both cycles in the field in the analyzed period took advantage of the mobility opportunities offered by the Erasmus+ program which is relatively high. During the visit teachers expressed their willingness to participate in different kinds of mobility, as well as that University provides favorable conditions and support in these matters (including flexible working schedules, financial support and others).

3.5.3. Evaluation of the conditions to improve the competences of the teaching staff

(1) Factual situation

KTU applies "Procedure for the Development of the Teachers' Didactic Competencies" which include "EDU_Lab" Centre for Excellence in Learning and Teaching at KTU providing support for teachers from 5 years from establishment. 63% of the teachers of the study field improved

over the evaluation period their competencies in different areas (didactic, business, innovation competences and others). EDU_Lab also consults and analyzes study program construction in cooperation with study program managers and lecturers, as well as offers trainings and events in this area. KTU provides Guidelines for the Organisation of the Additional Education of the Employees and provides opportunity to complete one study module in one semester financed by KTU.

(2) Expert judgement/indicator analysis

KTU provides systemic and well-established opportunities for teachers to increase their competencies in different areas – didactic, business, research, innovation and other skills. The dedicated entities are in place. Teachers are aware and well-informed about this support and use it willingly and acknowledge it very highly. KTU also employs its own graduates and supports early career teachers and researchers in their development and career progression. Over half of teachers use opportunities to improve their skills and competencies thus the KTU builds an atmosphere promoting development and offers different incentives (including financial incentives).

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Systemic opportunities for teachers' development are in place. KTU created an organisational culture supporting the scientific, business and didactic development of its employees.
2. The competence of the research and teaching staff should be assessed as very good. There are some teachers who are excellent researchers.

(2) Weaknesses:

1. The mechanisms should be developed to encourage involvement of the majority of teachers to be more proactive in the scientific activity, resulting also in increased number of publications.

3.6. LEARNING FACILITIES AND RESOURSES

Study field learning facilities and resources should be evaluated according to the following criteria:

3.6.1. Evaluation of the suitability and adequacy of the physical, informational and financial resources of the field studies to ensure an effective learning process

(1) Factual situation

KTU has purpose-built infrastructure, and it includes auditoriums, laboratories and computerized auditoriums for undergraduate and specialized subjects and 3 non-formal education classrooms. MIDF administers 24 classrooms, including 3 amphitheater-type classrooms, 20 classical classrooms, and 3 classrooms for non-formal education. There are also 7 computer classes, three of which are for practical or laboratory work and smaller computer classes for team or group assignments. The MIDF building has a branch of KTU Central Library with reading rooms and a hall for students' group work. The library also provides access to a range of physical and digital resources. Teachers provide learning

materials, slides, assignments, tests, self-assessment tools; additional information in the virtual learning environment Moodle, the information is constantly updated.
The nominal number of first-cycle students in a group is 100, in practical works that require less direct teacher-student interaction (e.g., seminars) - 20, in practical works that require more direct interaction between the teacher and the student (e.g. laboratory works) - 10. The number of postgraduate students is 50 (in lectures), 20 (in practical classes such as: exercises, seminars, etc.), 8 (in practical activities, such as: laboratory works with specialized equipment, creative, team projects), 20 (in practical activities, such as: group consultations, creative workshops, discussion of project activities, etc.).
The classrooms are equipped with computers, audio and video devices, the Internet, and the laboratories have efficient and secure laboratory equipment. There are places for individual student work (reading rooms, etc.). Students can complete individual assignments in seminar rooms and training labs (including computer labs). The reading room of the branch of the library at the faculty has 77 workplaces (16 of them are computerized). The computer classes in the MIDF branch of the Computer Center have 85 workstations that can be used in the absence of scheduled classes. A laboratory has been set up to carry out student projects, with four separate spaces and a student creative workshop where students can carry out simple works on their own. Various tools, such as: mobile magnetic boards, wide chalk- wall boards, mobile furniture, audio-visual devices that help unleash the learner's individuality and creativity can be used for the cognitive and learning process in study spaces of various laboratories and workshops. The tools, equipment and inventory in these spaces enable teachers to apply modern educational pedagogies such as challenge-based teaching, design-based thinking, problem-based teaching, cooperative learning or creative workshops. The laboratories include 3D prototyping laboratory, Textile Research Laboratory with modern textile materials testing equipment, Fashion Design and Sewing Laboratory. The specialized programs are also available, such as: Gerber Technology AccuMark V13; Adobe Suite, Artwork studio 4.2.5, Autodesk 3DS Max Design 2021 and Lectra suite. It is possible to connect to computer classes remotely and use the listed programs. All laboratory equipment can be reserved for use by KTU Open Access Centre Information System (APCIS) for research/final year projects. The resources also have reasonable provisions for disabled students.
MIDF conducts an inventory of the condition of premises and equipment in July of each year. The investments are planned in the budget of the faculty (preliminary ~ 30,000 EUR per year), as well as funds for the maintenance of permanent infrastructure are allocated centrally. The key investments/initiatives include Student club (~ 2000 EUR), renewal of the IT infrastructure (~ 50,000 EUR) and Access to software package Licenses (~ 10,000 EUR). The list of library resources is also regularly updated.

(2) Expert judgement/indicator analysis

It is evident that the physical infrastructure is sufficient to meet the needs of the students and staff. This includes classrooms, library resources and software access. The provision of specialist laboratories in the field of studies is also visible. However, the technical laboratories apparently do not cover all aspects of the field of studies. The financial commitment and new projects are described. It would have been useful to discuss the overall financial sustainability of the field of study.

3.6.2. Evaluation of the planning and upgrading of resources needed to carry out the field studies

(1) Factual situation

The section reports Renewed auditoriums at MIDF in early 2021, which are modern and adapted to the implementation of active learning methods. The renovated Sewing laboratory is available to students which also has provisions for presenting and preparing creative work. Furthermore, access to relevant digital tools is also available. Opportunities for access to and practical testing of the latest technological equipment are provided by visiting the companies of the social partners. The latest technological equipment is presented by the manufacturers' representatives, who are invited to give lectures to students.

(2) Expert judgement/indicator analysis

There are a range of software provision available but generally are limited to design and fashion area. For example, there is no provision for textile design software. The University arranges visits to external companies, but we do not think that for the class sizes, the students would get enough opportunities to have higher order learning. Furthermore, it is important to have lab-scale equipment to demonstrate the principles of operation to reinforce theoretical learning. This can be further enriched by visits to the industrial partners.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. The physical infrastructure is sufficient to meet the needs of the students and staff. The provision of specialist laboratories in the field of studies is also visible.
2. The financial commitment and new projects were clearly described.
3. The strong and close connection with the social partners was also observed.

(2) Weaknesses:

1. There is no significant weakness identified, but attention should be paid to plan investment in the laboratories for knowledge about textile manufacturing. This would support both teaching and research activities.

3.7. STUDY QUALITY MANAGEMENT AND PUBLIC INFORMATION

Study quality management and publicity shall be evaluated according to the following indicators:

3.7.1. Evaluation of the effectiveness of the internal quality assurance system of the studies

(1) Factual situation

The Quality Assurance System in studies at KTU is based on the following principles:

- The improvement of quality is based on the vision, mission, values, strategic objectives of the University and the aims stipulated by the strategic plan;
- The model of the Quality Assurance System in studies at the University is based on the guidelines for quality assurance in the European higher education and the excellence framework of the European Foundation for Quality Management;
- Everyday activities include a combination of various approaches to the quality of studies from excellence to compliance with requirements and satisfaction of the needs and expectations of the stakeholders;

- All stakeholders (both internal and external) are expected to be responsible and accountable for the quality assurance in studies; the members of the community of the University and social partners are involved in the quality assurance and improvement processes;
- Assurance of the openness and tolerance to new and creative methods of operation and their diversity while improving the quality of studies;
- A systemic approach to the quality of studies is applied while maintaining the link between the research and studies;
- Equal opportunities to graduate and acquire the desired degree are guaranteed to all the students;
- The study process is based on the student-centred approach, innovation and cooperation.

The quality assurance in studies and the management of the field/study programmes are conducted at three levels: University, Faculty and study programmes. The main functions of the internal assessment and monitoring of the quality of studies are performed by the University Study Quality Committee, the Department of Academic Affairs together with the Study Quality Assurance and Development Office and the Faculty Study Committees together with the Fields' Study Programme Committees that periodically analyse and assess the approved study fields and programmes provided at the University and their portfolio, and submit the proposals for the improvement of study programmes. In particular, there is the Committee for Materials, Polymers and Textile Technology (KSPK).

(2) Expert judgement/indicator analysis

There are University, Faculty and study programme level quality assurance systems in place. The document includes the details of the systems but there is limited information on the functioning and outcomes of these committees/authorities. The KSPS committee does not have any second-cycle student representation. Furthermore, there is only a single member from the industry. If the University allows to do so, inclusion of an external academic would also be useful.

3.7.2. Evaluation of the effectiveness of the involvement of stakeholders (students and other stakeholders) in internal quality assurance

(1) Factual situation

This section details the participation of students, alumni and industrial partners in the internal quality assurance. SER Table 7.2 gives a statistic on the number of topics provided by the employers. Furthermore, a range of changes in the 1st and 2nd cycle SP are given, in response to the input by the industrial partners. The impact is measured by student surveys and feedback gathered from the industrial partners.

(2) Expert judgement/indicator analysis

The section provides concrete examples of the changes in the academic content/programme in response to the needs of the industry. The gathering and action on the input by students and alumni is not detailed. It would have been useful to include the results of the surveys.

3.7.3. Evaluation of the collection, use and publication of information on studies, their evaluation and improvement processes and outcomes

(1) Factual situation

Each year, the study programme and its component study subjects, their coherence and content are reviewed and improved with regards to the observations expressed by the students, graduates and employers, the recommendations provided by the experts in compliance with the general requirements applied to the SP. The study process at the University level is administered by the Department of Studies, which ensures compliance with the academic calendar at the University and administers the main study process management tool AIS. The international mobility of students is administered by the International Relations Department of the KTU through two international relations coordinators of the MIDF Study Centre. Reports and plans for the activities of Materials, Polymers and Textile Technologies shall be approved at the beginning of the new school year by KSPK at a meeting to discuss the results of the previous year, redefine the objectives for the new academic year, and agree on key activities, target criteria, responsible people and deadlines. The KTU website publishes information on SPs and the website contains the results of study surveys and the opinion of social stakeholders on the currently relevant competencies in the labor market for each study program.

(2) Expert judgement/indicator analysis

The section describes in detail the structures in place. This includes the responsibilities of the different University departments. It would have been useful to include the results of the surveys.

3.7.4. Evaluation of the opinion of the field students (collected in the ways and by the means chosen by the SKVC or the HEI) about the quality of the studies at the HEI

(1) Factual situation

The feedback of students, teachers, researchers, administrative staff, alumni, employers and social partners is gathered. The remarks and advice of the external social stakeholders (graduates, employers) are considered for the improvement of the quality of studies. The yearly meetings and round table discussions with social stakeholders are organised. Study surveys such as round table discussions, evaluation of study modules and lecturers, evaluation of study program quality, evaluation of compulsory practice, evaluation of alternatives, evaluation of preparation and defence of the final qualification project, student survey "Student Voice", teachers Survey ,,Atvirai" (openly), Graduate Career Survey, Employee Satisfaction Survey and Employer Survey are relevant and carried out for the improvement of the study field and program. The results of the Satisfaction of the First Year Cycle SP have been included.

(2) Expert judgement/indicator analysis

A range of surveys and measures are reported to be in place to capture the feedback of different stakeholders. The summary/insight of the surveys is limited as only the results of the Satisfaction of the First Year Cycle SP have been included. The other survey results have not been included.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. There are University, Faculty and study programme level quality assurance systems in place.
2. A range of surveys and measures are reported to be in place to capture the feedback of different stakeholders.
3. There are concrete examples of the changes in the academic content/programme in response to the needs of the industry. The KSPS committee does not have any second-cycle student representation. Furthermore, there is only a single member from the industry. So, we suggest to revise the composition of the committee.

(2) Weaknesses:

1. A shortcoming noticed was, that the summary of the survey results (except "Satisfaction of the First Year Cycle SP") was not provided.

IV. EXAMPLES OF EXCELLENCE

Core definition: Excellence means exhibiting exceptional characteristics that are, implicitly, not achievable by all.

If, according to the expert panel, there are no such exceptional characteristics demonstrated by the HEI in this particular study field, this section should be skipped / left empty.

V. RECOMMENDATIONS*

Evaluation Area	Recommendations for the Evaluation Area (study cycle)
Intended and achieved learning outcomes and curriculum	Improvements suggested in order to reach excellence: • More emphasis should be given to the trends, new technologies and innovations in the study field, such as latest digital technologies, such as virtual prototyping, green processes and technologies, and circular economy. • Introduce at least one freely elective study subject in the 2nd cycle SP in order to achieve some personalization of study. • Encourage cooperation with social partners at implementation of final projects at both SPs, to increase their number done in real working conditions and situations.
Links between science (art) and studies	Improvements suggested in order to reach excellence: • Students of the first cycle have slightly more traditional content of the SP and do not have a research project as part of the SP. Such practice should be included in the program to give students more possibilities to gain practical skills and research skills. • The number of publications in all categories should be increased in order to achieve higher quality and quantity of publications. Encourage the students of both SPs to be actively involved in research and publication activity.
Student admission and support	• Regular surveying of the results of the mentoring and support programs needs to be introduced. • Actions directed towards the increase of possible candidates for second and first cycle studies needs to be regularly revised, adjusted and developed. • The strong cooperation with different foreign HEIs which the University conducts through many years seems to be not used to its full extent. • Students feel that they get an overwhelming amount of information from the University. • Students need to finance their study related projects themselves. The University should provide additional funds, e.g. project-oriented scholarships for supporting students in their studies. • Not a wide choice of international establishments to visit for academic mobility. The University should try to broaden its scope of cooperation with other foreign institutions and sign more bilateral or multilateral agreements on educational and research cooperation.
Teaching and learning, student performance and graduate employment	• The Academic Integrity process needs to be clearly defined, and applied for all submitted work. The students can be provided support and example access to the similarity at the start of study cycle. • The university can consider conducting assessment mapping to assess the opportunities of self-reflection for students.

Teaching staff	Improvements suggested in order to reach excellence: • The mechanisms should be developed to encourage involvement of the majority of teachers to be more proactive in the scientific activities.
Learning facilities and resources	Improvements suggested in order to reach excellence: • The University should consider to set-up laboratories for knowledge about textile manufacturing.
Study quality management and public information	Improvements suggested in order to reach excellence: • All survey results should be summarised and shared with all the stakeholders.

*If the study field is going to be given negative evaluation (non-accreditation) instead of RECOMMENDATIONS main **arguments for negative evaluation** (non-accreditation) must be provided together with a **list of "must do" actions** in order to assure that students admitted before study field's non-accreditation will gain knowledge and skills at least on minimum level.

VI. SUMMARY

Main positive and negative quality aspects of each evaluation area of Polymer and Textile Technology field study at Kaunas University of Technology:

The expert panel gives a positive evaluation of the 1st cycle *Fashion Engineering* study programme (SP) and 2nd cycle *Fashion Innovation Technologies* SP at the Faculty of Mechanical Engineering and Design, Kaunas University of Technology (KTU), with all areas of evaluation assessed as "good" and "very good".

Major positive aspects:

- Both SPs, with focus on innovation and creativity, are in line with KTU strategy and correspond to the needs of the Lithuanian labour market. The aims, learning outcomes, teaching/learning and assessment methods of study subjects are reasonably written and consistently set together.
- The structure of 1st cycle *Fashion Engineering* SP is well designed, balanced between compulsory and elective subjects, and between general and professional study field subjects leading to achievement of a broad range of competencies and skills. Specialization is not included in the structure of the 1st cycle SP itself, however, the programme allows a lot of possibilities for personalization of study.
- KTU has established very good connections with industrial and social partners who are directly involved in the creation of the SP, its amendments, assessment of students' projects and they take part in creation of strategy for development of SP.
- KTU is strongly oriented towards the practical teaching and acquiring practical skills, therefore students of both cycles are having numerous possibilities to join different activities developing their future practical and transferable skills.
- Strong emphasis is put on the quality of teaching staff providing lectures, which usually are active researchers, with good and very good scientific achievements, and experience in the didactic, as well as often – they have experience in the business or industrial activities.
- KTU is open to different methods of student support and invests regularly in mentoring and talent programs. Multiple strong support programmes for the students are in place.
- KTU has a very clear, informative and attractive website. All information is available in English, as well as all information and documents regarding admission to studies and others are available in English.
- Systemic and well-established opportunities for teachers' development are in place. KTU created an organisational culture supporting the scientific, business and didactic development of its employees.
- The competence of the research and teaching staff should be assessed very good.
- The students are fully informed about the study outcomes.
- There are University and Department level systems in place to monitor the student progress. This includes a system in place to provide support to students with low level of academic engagement.
- The policies to ensure tolerance and non-discrimination are in place, and there are clear mechanisms to deal with these matters. The reasons for no complaints/appeals despite the pandemic needs to be further looked into.

- The physical infrastructure is sufficient to meet the needs of the students and staff. The provision of specialist laboratories in the field of studies is also visible. Furthermore, the financial commitment and new projects were clearly described.
- There are University, Faculty and study programme level quality assurance systems in place.
- A range of surveys and measures are reported to be in place to capture the feedback of different stakeholders.
- There are concrete examples of the changes in the academic content/programme in response to the needs of the industry.

Suggestions for improvement:

- The 2nd cycle *Fashion Innovative Technologies* SP has much more rigid structure than 1st cycle SP, with no specialization and freely elective subjects offered. For the development of research skills and personal abilities it is recommendable to offer students more possibilities to personalize the structure of SP.
- KTU should encourage further cooperation with social partners and strive to increase the number of final projects done in real working conditions and situations. Besides working with social partners, topics related to the research projects should be kept as priority, especially for 2nd cycle study.
- More activities devoted to the general public should be held to increase social responsibility and incorporation of SP and KTU in the local community. Encouraging responsible technology transfer might be a good path for KTU development further.
- Regular surveying of the results of the mentoring and support programs needs to be introduced as a part of the quality management system.
- The strong cooperation with different foreign HEIs which the University conducts through many years seems to be not used to its full extent. KTU should also try to broaden its scope of cooperation with other foreign institutions and sign more bilateral or multilateral agreements on educational and research cooperation.
- KTU should provide additional funds, e.g. project-oriented scholarships for supporting students in their studies and final projects.
- The Academic Integrity process needs to be clearly defined, and applied for all submitted work. The students can be provided support and example access to the similarity at the start of cycle.
- The opportunities for student self-reflection and development are not explicitly evident. The university can consider conducting assessment mapping to assess the opportunities of self-reflection for students.
- The Committee for Materials, Polymers and Textile Technology (KSPS) does not have any second-cycle student representation. Furthermore, there is only a single member from the industry. So, we suggest revising the composition of the committee.
- A shortcoming was that the summary of the survey results (except “Satisfaction of the First Year Cycle SP”) was not provided.

Expert panel leader

Prof. dr. Diana Gregor-Svetec