CENTER FOR QUALITY ASSESSMENT IN HIGHER EDUCATION

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OVERVIEW REPORT FOR POLYMER AND TEXTILE TECHNOLOGY STUDY FIELD

2022 year of the evaluation

Prepared by the chairperson of the expert panel:

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I. INTRODUCTION

The overview is based on the external quality evaluation of the *Polymer and Textile Technology st*udy field in the following Lithuanian Higher Education Institutions (HEIs): *Vilniaus Kolegijoje, Kaunas University of Technology and Utenos Kolegijoje.*

The external evaluation was organised by the Lithuanian Centre for Quality Assessment in Higher Education (SKVC).

Comprehensive external evaluation reports including strengths and weaknesses and concluding with recommendations were prepared separately for first and second cycle field studies and included evaluation marks. This overview focuses on the main findings of the external evaluation of the *Polymer and Textile Technology* field from a general point of view.

Based on the findings of the evaluation, expert panel have come to a decision to give **positive** evaluation to the following HEIs: *Vilniaus Kolegijoje (first cycle), Kaunas University of Technology (first and second cycle) and Utenos Kolegijoje (first cycle).*

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

II. STUDY FIELD OVERVIEW BY EVALUATION AREAS

Overall observations by the expert panel regarding the most positive aspects of the study field in Lithuanian HEIs as well as areas in need of improvement. The analysis covers all 7 evaluation areas.

Textile and clothing industry in Europe is experiencing a renaissance towards green and digital transformation and is working to restore technological autonomy and maintain a lead in specialty products, fashion, brand image and creativity. In order to achieve that an educational system through which we can constantly learn and adapt to changes, strengthen already acquired knowledge and competencies, and develop new skills, is essential. All three evaluated higher education institution (HEI) of the *Polymer and Textile Technology* study field have developed solid study programmes (SP) in clothing sector and are working very well and in accordance with the mentioned vision of European educational system. Evaluation of study field and cycle assessment in points by evaluation areas gave following results: first cycle *Fashion Technologies and Business* SP at Vilnius Kolegija (VK) got 24 points, first cycle *Clothing Technologies* SP at Utenos Kolegija (UK) 27 points, first cycle *Fashion Engineering* SP 26 points and second cycle *Fashion Innovation Technologies* SP at Kaunas University of Technology (KTU) 26 points.

3.1. Intended and achieved learning outcomes and curriculum

The main aims of all evaluated SPs are well defined and are in line with the strategy and mission of HEIs. The sufficiency of the Fashion Technologies and Business SP at VK and Clothing Technologies SP at UK to ensure learning outcomes and conformity with the requirements of the legislation for college studies and the compliance of the curriculum design with the legal requirements for the qualification degree Professional Bachelor of Technology Science is substantiated. Coherence of the aims and intended learning outcomes of the SP, learning outcomes of the study subjects and learning outcomes of the cycle of study is evident in both cases. Students gain good professional competences needed for the textile and clothing sector and meet the current needs of the Lithuanian labour market, which is also evident from high employability of graduates.

The structure of *Clothing Technologies* SP at UK is well designed, balanced, newest topics, such as digitalisation, innovations and sustainability are included to a sufficient extent, though with the fast development in these areas, further improvements to make on annual basis are very important. Including more research related learning outcomes in order to develop critical thinking and reasoning skills and gain problem-solving skills to a greater extent is needed. Specialization is part of the SP, as well as personalization of study, which gives students the opportunity to personalize the structure of SP according to their individual learning objectives and intended learning outcomes.

In *Fashion Technologies and Business* SP at VK the emerging themes are partly included in the content of study subjects but they are not sufficiently included in the learning outcomes of SP. Specialization is not included in the structure of the SP itself, however, the program allows a certain degree of personalization. With including more elective subjects and redistribution of credits in favor of elective subjects, students could personalize the structure of SP according to their personal learning objectives and gain broader competences and soft skills.

The evaluation of first and second cycle university SPs conducted at KTU showed the sufficiency of both SPs to ensure learning outcomes and conformity with the requirements of the legislation for university studies. The 1st cycle *Fashion Engineering* SP is adequate for the qualification degree Bachelor of Technological Science, whereas 2nd cycle *Fashion Innovative Technologies* SP for Master of Technological Science. Both SPs, with focus on innovation and creativeness are in accordance with the KTU strategy and study development guidelines, to include research and innovation, cooperation, interdisciplinarity, sustainability into the curriculum. SPs are constantly monitored and updated, taking care that students are achieving competencies and skills that are intended and needed for the Lithuanian labour market. 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 program allows a lot of possibilities for personalization of study. 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.
Good cooperation of all HEIs with social partners especially with the companies in the clothing sector is evident. Very strong connection to the socio-economic system and well-established cooperation with industrial partners provide a great background for including social and industrial partners into education related processes. HEIs 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.

3.2. Links between science (art) and studies

The HEIs are actively participating in national and international projects, international undertakings and networks, seminars, conferences and carry out collaboration with external partners which creates a favourable environment and conditions for the development of teachers and students. The expert panel noted that all evaluated SPs (and HEIs) are strongly oriented towards the practical teaching and acquiring practical skills (in general in research, applied research and art), therefore students are having numerous possibilities to join different activities developing their future practical and transferable skills. Student's involvement into research should be promoted throughout the study, not just in the final projects and theses.
Teachers 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. They should constantly make efforts to expand its base of the newest visualisation and design programs suitable for the sector and in the field of study, in order to offer its students and external partners the latest IT solutions in this field.
A positive aspect is also the employment of young scientists, lecturers 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.
Apart from many good practices that HEIs have already introduced, continuous efforts should be taken to increase the internationalisation of the SPs which will strengthen the international context of the education in the field.
Scientific activity, publishing and documented transfer of knowledge should be more promoted and encouraged by the management, resulting in an increased number of publications, citations, patents and innovations. Uniform ownership and awareness of research strategy, networking, collaboration and the transfer of scientific research excellence to less experienced colleagues should be encouraged among teachers of SP.

3.3. Student admission and support

For all evaluated SPs selection of students and admission criteria are in accordance with the national law and legal regulations and policy of HEIs. The requirements for admission to the

SPs are clearly communicated and are publicly available on the website of HEIs. The principles of recognition of foreign qualifications, partial learning outcomes, prior learning and other learning as well as information on their application are given. Nevertheless, more efforts should be given to make information and the process more accessible and transparent to the potential students.

All HEIs provide opportunities for student academic mobility and implement various activities promoting it. As seen from the provided data the numbers of students participating in academic mobility are low, which might be due to the COVID-19 pandemic. Efforts should be made to increase the number of students participating in the mobility. The HEIs should also take into account the processes of in-house internationalization, which can also be implemented in the event of a pandemic or other factors that make it impossible to travel outside the country. The HEIs should also try to broaden their scope of cooperation with other foreign institutions and sign more agreements on educational and research cooperation.

The HEIs provide various forms of student support. The suitability, adequacy and effectiveness of the academic, financial, social, psychological and personal support provided to the students of the field seems sufficient. Various types of scholarships and incentive systems as a tool for activating students are offered by HEIs. The academic support and advisory systems are established, working well, students seem to be satisfied with the level of the support they receive. Expert panel noticed that the administration, academic staff and students have a strong bond and mutual trust.

We are aware that the HEIs themselves do not control state funding of applicants, nevertheless efforts should be taken to increase the number of state funded places due to the importance of the sector and the high demand for the graduates of the field. Ways should be identified to increase the number of vacancies financed by the companies or obtain additional funds, e.g. project-oriented scholarships for supporting students in their studies and final projects.

3.4. Teaching and learning, student performance and graduate employment

The students are informed about the intended learning outcomes. All evaluated HEIs ensure student-centred learning, diversity of teaching methods and forms of assessments are used. For all evaluated SPs the study progress is systematically monitored, and feedback is provided to students on their submitted works and examinations. There are institutional and department level systems in place to monitor the student progress. This includes the monitoring of student outcomes and engagement with the SP, and follow-up mechanism for students with low engagement. The performance of students is quite good. They are motivated and they expressed satisfaction with SP and help they get during the interviews with the expert panel.

HEIs provide standard conditions ensuring access to study for students with special needs. At both colleges (VK and UK) the study environment is fully adapted for students or employees with special needs.

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 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 the academic year. The scaffolding of student assessments in the first semester is detailed and mentioned student responsibility, but the concrete examples for student self-reflection have not been provided. It might be useful to use a combination of formative and summative assessment activities to further scaffold the student academic journey.
The statistics of graduates' employability is good. Close relationships with industry and social partners is the basis for good student employment rates. Graduates are prepared in accordance with the needs of the labour market

3.5. Teaching staff

The composition of the teaching staff in all evaluated SPs, complies with the legal requirements. The number, qualification and competencies of teaching staff within a field study programmes in all HEIs are adequate. The academic staff has sufficient and sometimes outstanding experience in research and didactic work enabling successful implementation and achievements of the learning outcomes of professional and university SPs. Very strong connections among teachers and social partners, especially the clothing industry helps to develop their practical skills on an ongoing basis.
The HEIs create favourable conditions for the professional development of the teaching staff and for the performance of scientific and applied research. A wide range of opportunities to develop teaching, scientific and proactive skills are offered. The process has been systematised and the procedures specifying the requirements for raising competences have been developed. The HEIs should continue to pursue a good policy of supporting the development of teaching staff and enable them to improve their various competences, including teaching competences.
The majority of teachers are productive researchers, the scientific activities of some of them represent the most current trends in the field. The mechanisms should be developed to encourage involvement of the majority of teachers to be more proactive in the scientific activities.
Support for teaching staff to participate in mobility is given and the number of teachers participating in the mobility is acceptable. Introduction of mixed types of mobility adjusted to the needs and conditions of the situation (virtual, half-virtual, short mobilities, in-house internationalisation etc.) would increase the chances of participation.

3.6. Learning facilities and resources

All evaluated HEIs have appropriate physical and informational infrastructure to meet the needs of the students and teaching staff. This includes classrooms, library resources and software access. However, the technical laboratories apparently do not cover all aspects of the field of studies. The close connection with the social partners enables students to use their

facilities to carry out practical work. The HEIs arrange 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.
Attention should be paid to plan investment in the laboratories for knowledge about textile manufacturing and textile design software. This would support both teaching and research activities.

3.7. Study quality management and public information

The internal Quality management and assurance systems used by the HEIs are consistent with European and Lithuanian regulations and guidelines. There are HEI, faculty and SP level quality assurance systems in place. This includes defined responsibilities, roles and also mechanism to continuously gather feedback from students and social partners.
Social partners, alumni of SP and students are involved in internal quality assurance.
A range of surveys and measures are reported to be in place to capture the feedback of different stakeholders and there are clear examples of making changes in response to survey feedback. Though surveys are analysed, all survey results should be summarised and shared with all the stakeholders

III. EXAMPLES OF EXCELLENCE

Please give examples of excellence (if any) discovered while conducting the study field evaluation.

- The effectiveness of the internal quality assurance system of the P&TT field studies is well developed. There are institutional, faculty and study programme level quality assurance systems in place. Social partners and students are actively involved in internal quality assurance. The surveys are implemented and more importantly there are clear examples of making changes in response to survey feedback.
- A very strong and tight cooperation with social partners, especially the clothing industry who actively participate in the creation of the SP, its modification, and processes related to the evaluation of students' work exists. This allows the assumption that the P&TT field studies are characterized by an exceptionally high practical level.
- Students gain good professional competences needed for the textile and clothing sector which meets the current need of the Lithuanian labour market resulting in high employability of graduates.

IV. RECOMMENDATIONS

MAIN STRATEGIC RECOMMENDATIONS FOR THE IMPROVEMENT IN POLYMER AND TEXTILE TECHNOLOGY STUDY FIELD

- **Strategic recommendations for the Higher Education Institutions (at institutional level):**

1. More emphasis should be given to the trends, new technologies and innovations in the study field, such as virtual prototyping and other latest digital technologies, green processes and technologies, circular economy. Those topics should be included in the content of more study subjects and their learning outcomes, as well as with introducing new study subjects into the SP
2. Strive to include learning outcomes related to development of research skills and life-long learning in more study subjects.
3. Further encourage cooperation with social partners at implementation of final projects at both SPs, to increase their number done in real working conditions and situations.
4. Efforts should be taken to increase the number of state funded places due to the importance of the sector or increase the number of vacancies financed by the companies.
5. Continuous efforts should be made to increase the number of students participating in the mobility. Opportunities for students to take part in mixed types of mobility and internationalisation in-house should be provided.
6. The Academic Integrity process needs to be clearly defined, and applied for all submitted work.
7. The institutions can consider conducting assessment mapping to assess the opportunities of self-reflection for students.
8. The mechanisms should be developed to encourage involvement of the majority of teachers to be more proactive in the scientific activities and mobility.
9. The investment in the laboratories for knowledge about textile manufacturing should be planned and it should be an integral part of the strategy of each HEI.

- **Strategic recommendations for the Ministry of Education and Science and Sport (at national level):**

1. The criteria of "No less than 10% of study field subjects must be taught by scientists or recognized artists." is relatively low. We understand that not everybody need to be a professor, however the increase of this criteria could be a stimulus to scientific advancement (career progression), which is always a motivating factor for teachers.
2. By implementation of Academic Integrity policy there are language challenges, especially if English systems (such as "turnitin" plagiarism detection service) is used.
3. Expert panel have some recommendations for preparation of self-evaluation report (SER):
    - Each indicators mentioned in Methodology for external evaluation of study fields should be independently addressed in SER. Also each SER should have the same structure and division to sections, as provided in the Methodology.

- Whenever in the report there is an example of any activities mentioned, statistics on that topic should be presented and thoroughly analysed in SER.
- The report should always include self-reflections in each section on the previous or current evaluations and indication of specific activities that were undertaken to meet the recommendation of the previous evaluation.
- Reconsideration of the necessity of the "factual situation" description as the integral part of every section in SER evaluation should be taken into account. The more deepened analysis of each criteria is more important than efforts and time spent on rephrasing the text placed in SER.
- The evaluation could include additional or separate criteria, especially for Universities aspiring for international presence. These criteria could be defined as "excellence" and could concern broadly understood quality assurance in different dimensions (quality in management and its strategical part, in teaching, employment policy, research etc.), the compatibility with general global trends (transferable skills, open science, research integrity, mental health and well-being of researchers, interdisciplinarity, sustanability etc.) and the international context (collaborations, projects, distinctions, awards etc.). Some existing criteria enabled only for partial and indirect analysis of these issues. It could be relevant especially for Kaunas University, as we should be able to analyse the visibility of the university, the position in different rankings (also in the research area in which they teach), the scientific output of teachers/researchers in global context (Hirsch index, and etc.), the number of successful application for H2020 or other international projects (Marie Curie etc.), the number for students and teachers receiving exclusive international scholarships or national excellence scholarship (e.g. offered by Ministry, or by Lithuanion Academy of Sciences etc., projects and its financial stream for the university, etc.). We think it would provide space for deeper analysis.

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