Decision of the quality assessment of the Transport Services Study Programme Group of Tallinn University of Technology

27.04.2020

The Higher Education Assessment Council of the Estonian Quality Agency for Higher and Vocational Education (EKKA) decided to approve the report of the Assessment Committee and to carry out the next quality assessment of the first and second levels of higher education of the Transport Services Study Programme Group of Tallinn University of Technology in seven years.

Pursuant to § 48 (4) of Higher Education Act, § 10 (4) of University Act, clause 41 of the document "Quality Assessment of the Study Programme Group at the First and Second Levels of Higher Education" established on the basis of the authorization contained in clauses 3.7.3 and 3.7.1 of the Statutes of the Estonian Quality Agency for Higher and Vocational Education, the Higher Education Assessment Council of the Estonian Quality Agency for Higher and Vocational Education (hereinafter the Council) states the following:

1. On 15.03.2016, the Council decided to carry out the next quality assessment of the first and second levels of higher education of the Transport Services Study Programme Group of Tallinn University of Technology (TalTech) after 4 years.
2. TalTech coordinated the quality assessment period of the Transport Services Study Programme Group with EKKA on 12.03.2019.
3. On 05.07.2019, the Director of EKKA approved the Quality Assessment Committee of the TalTech Transport Services Study Programme Group (hereinafter the Committee) in the following composition:

Bjørn Egil Asbjørnslett (Chairman)	Professor, Head of Marine Systems Research Group, Norwegian University of Science and Technology (Norway)
Bart Wiegmans	Senior Researcher, Faculty of Civil Engineering and Geosciences, Section

	of Transport and Planning, TU Delft (Holland)
Egil Pedersen	Professor of Technology, UiT The Arctic University of Norway
Janne Lahtinen	Senior lecturer of Maritime Studies, Dynamic Positioning Instructor, Satakunta University of Applied Sciences (Finland)
Janek Saareoks	CEO, AS Schenker (Estonia)
Anett Nurm	Student, Estonian University of Life Sciences (Estonia)

4. TalTech submitted the following study programmes for assessment in the Transport Services Study Programme Group:

   Logistics (Master's study)

   Maritime Studies (Master's study)

   Navigation (professional higher education)

   Port and Shipping Management (professional higher education)

   Waterways Safety Management (professional higher education)

5. TalTech submitted a self-analysis report to the EKKA office on 12.08.2019, which was sent to the committee by the assessment coordinator on 23.08.2019.
6. The assessment visit to TalTech took place 22.–23.10.2019.
7. The Committee sent the draft assessment report to the EKKA office on 01.12.2019, which EKKA forwarded to the institution of higher education for comment on 03.12.2019 and to which TalTech submitted a reply on 18.12.2019.
8. The Committee submitted the final assessment report to the EKKA office on 10.01.2020. The assessment report is an integral part of the decision. The report is available on the EKKA website.
9. The Secretary of the Assessment Council forwarded the final assessment report and self-analysis report to the members of the Assessment Council on 09.03.2020.
10. The Council discussed the received documents at the meeting of 27.04.2020 with the participation of 10 members and decided to highlight the following strengths, recommendations and areas for improvement of the Transport Services Study Programme Group of TalTech.

Strengths of the study programmes and studies of the Transport Services Study Programme Group of Tallinn University of Technology:

1) Clearly, there has been progress in study programmes, learning and teaching, as well as in teaching staff, compared to the previous assessment. This is confirmed by external stakeholders as well as lecturers, students and alumni.
2) The merger of the Estonian Maritime Academy with TalTech has significantly improved the future prospects of the Maritime Academy. It is also a good opportunity for mutual educational and research cooperation between the Maritime Academy and the rest of TalTech.
3) The connection with the Estonian labor market is very good. The feedback from employers is very positive and open.
4) Both the newly renovated Maritime Academy and the TalTech campus offer a modern infrastructure for the development of the study programme group. The resources, including classrooms, laboratories and the library, are impressive.
5) The readiness for further development is certain. Proactive and development-oriented management is observed in all study programmes.
6) The study programme group is characterized by diversity of lecturers (part-time/full-time, tenure/visiting professors, etc.), subject courses (a wide range of subjects is covered), locations (different buildings, ship, boat), students (young and already working) and languages (Estonian, Russian, English).

Areas of improvement and recommendations through the study programmes and studies of the Transport Services Study Programme Group of Tallinn University of Technology:

1) Diversity, which is a strength of the study programme group, is also one of the areas for improvement. A more precise focus is needed to achieve specialization and scientific depth.
2) Both TalTech and its Estonian Maritime Academy have a good and strong reputation in the labor market. It should be used to provide students with more formalized opportunities for collaboration. Finding suitable internships and topics for graduation theses topics is not easy. At the level of the study programme group, an action plan should be developed to find internships and topics for graduation theses at the appropriate level.
3) Salaries are not competitive, which makes it a big problem to find full-time lecturers. Additional funding could be found through research projects (local and international) or by providing in-service training. TalTech and the Maritime Academy are well-equipped with their combined resources to be both a research partner and a provider of in-service training.

4) The language problem is topical and needs a clear solution. The committee recommends using materials in English and conducting studies in Estonian. The lecturer must develop Estonian terminology, but should not deal with the translation of all materials. There are two reasons for this: firstly, a better selection of materials is available in English, secondly, there are few lecturers and they should be used to create new value rather than to translate existing textbooks.
5) The challenge is to find a balance between theory and practice, both in terms of course content and students. The fact that students come from different backgrounds is a strength in the study programmes and also an area for improvement. The amount of theoretical learning must be sufficient for the theory to be applied in practice.
6) Although study programmes clearly show progress towards strong theoretical basic subjects, their share in Master's studies should be higher.
7) The number of students in study groups is relatively small (5-10). Opportunities should be found to reorganize study groups/subjects to increase the number of students in a study group.
8) It is important for the Maritime Academy to find synergies from joining TalTech - the resources provided by Taltech should be used for joint subjects, laboratories, staff training and other support activities.
9) In order to open Doctoral studies in the Transport Services Study Programme Group, an international benchmarking with other similar study programmes should be carried out in advance. Master's study programs should be sufficiently focused and scientifically deep to enable the student to pursue Doctoral studies in the field. Currently, the focus of Master's study programmes is on basic knowledge rather than understanding the broad context of the field. Master's study programmes should be reviewed in the light of the different requirements arising from research questions and scenarios in the field, and the extent to which these study programmes allow for progress towards Doctoral studies should be analyzed.
10) Attention should be paid to the scientific level of the graduation theses of the study programme group.
11) Students clearly stated their views on the entrance examinations (interview and test) in the Master's program and in the Maritime Transport and Port and Shipping Management study programmes. Entrance examinations are, according to the students, formal and relatively simple, and they are passed by many students, who, in the end, do not find the motivation to complete their studies. There was similar feedback on the internship, which should provide students with valuable input and practical experience. It is necessary to continue working on reviewing the format of entrance interviews to find better motivated students.
12) Attention must be paid to the use of technology, various tools and software. If the most modern equipment is used only ten days a year, but large sums are paid for their renewal, is this investment justified?

It is recommended to continue developing technology, software, etc. in cooperation with the rest of TalTech and to take advantage of access to technology in other specialties.

13) The possibilities of the Moodle and course management system should be used to the maximum. TalTech also provides a central support service for lecturers to develop their skills and solve technical problems. Given the availability of these support services and other similar resources, the possibility of making e-learning development courses compulsory for lecturers should be considered.

LOGISTICS (MASTER'S STUDY)

Strengths

1) The study programme plays a large and important role in the development of logistics competence in Estonian society, business and industry. The scope of the subject courses and the choice of disciplines in the study programme is its strength and is in line with international trends in business logistics.
2) The Committee considers that the existence of two specializations is a strength of the study programme, as they provide a good bridge between the engineering and business training required for logistician. It is a smart and strong combination that goes hand in hand with wider developments in the field.
3) Study visits to different companies are an important added value.
4) The study programme has an active council and good cooperation with alumni.
5) Flexible study opportunities, including afternoon and evening lectures that allow students to combine their work and study.
6) The combination of full-time and part-time lecturers with engineering and business logistics backgrounds fits very well with the study programme profile and should certainly be maintained.
7) The study programme leader has a very important role in the study programme, especially considering his strategic vision and ability to form a team of lecturers according to the specifics of the study programme and to bring real cases from industry to the study programme.

Areas for improvement and recommendations

1) It is necessary to develop students' analytical skills. The study programme includes subjects that support quantitative analysis skills, but there is a need to:
    - introduce a preliminary course for students who do not have previous experience and knowledge in similar disciplines.

- Provide electives that enable students to further develop their quantitative analysis competencies, including learning the methods used in logistical analysis. These subjects should be clearly linked to process management and the subjects that support them.
- The Bachelor's studies in logistics (logistics and supply chain) is one of the five majors in the Bachelor's degree programme in business, so it is not directly related to this assessment. However, it is necessary to address the topic of Bachelor's studies in the field of logistics here, as it is clearly related to the offered Master's study programme. The problem was also raised by industry and the Committee also sees it as a problem for the Master's study programme in Logistics. In the Bachelor's study of logistics and supply chain (as also pointed out in the previous assessment report of the study programme group) it is necessary to develop a good understanding of engineering, ICT and (quantitative) economics. Analytical and system development skills are needed. The location of Bachelor's study in logistics and supply chain at university and faculty should also be reviewed.

2) Cooperation with other institutions of higher education should be developed. For example, TTK University of Applied Sciences has invested in supply chain and transport planning simulation software, which could be a good basis for cooperation and also opportunities to obtain students to the Master's program in logistics.
3) It is necessary to ensure that students, regardless of their previous background, achieve a sufficient level of learning outcomes in the engineering subjects offered at the beginning of their studies.

MARITIME STUDIES (MASTER'S STUDY)

Strengths

1) The study programme offers students a broader knowledge of the field of business in maritime affairs, which is very important for the Estonian economy.
2) Access to teaching materials and scientific literature has improved significantly. There is access to maritime information resources and e-literature.
3) Lecturers from different TalTech faculties are involved in the teaching, which shapes the broader academic background and improves the scientific level. After the merger of Taltech and the Maritime Academy, students have more opportunities.

4) Since joining, TalTech has significantly supported research initiatives in the maritime field.
5) There is close cooperation with companies in the field and external resources are also used in teaching.
6) Joining TalTech has contributed to the self-development of teachers, as the university offers in-house training in pedagogy. Lecturers can have a say in the content and structure of in-service training aimed at them.
7) The presence of an educational technologist allows lecturers to focus more on their core activities. It also contributes to the use of modern teaching methods.
8) The student council has a direct line of communication with management and they collect feedback on subjects across the university.

Areas for improvement and recommendations

1) The level of internationalization of the study programme leaves much to be desired, but is understandable given that the majority of students study and work simultaneously.
2) Specialization title *Technical use and navigation* of *ships* refers to technology and the use of technology for better solutions for ships and navigation. However, technical subjects are optional subjects, where 18 out of 30 credits must be chosen. Thus, the student can choose a specialization, but at the same time refrain from choosing technical subjects. This approach is strange and should be reconsidered.
3) There are too few visiting lecturers. Employers expect the Maritime Academy to work to involve practitioners who are better placed to introduce the day-to-day life of the field.
4) Students should undertake internships in companies that meet their professional goals and allow for a better understanding of the realities of everyday work and the development of problem-solving skills. As a general rule, students can perform their internship at their place of work, but support systems must be provided for students who do not work in the maritime field on a daily basis.
5) Changes in the feedback system have taken place in cooperation with students. The Committee proposes to include in the system a group of student representatives responsible for gathering constructive feedback on each subject. A group of student representatives would meet with the lecturers responsible for the subjects to keep them informed of development plans. In this way, students can be directly and constructively involved in the feedback and development process. It also increases students' responsibility for developing subjects and achieving learning outcomes. Learning objectives should not be the subject of discussion, they should be in place in advance.
6) Training in the development of pedagogical and e-learning skills should be mandatory for lecturers in all study programmes at regular intervals.

7) One development opportunity is to seek common interests with other study programmes. Many opportunities for cooperation within TalTech have not been used. For example, in the case of graduation projects, greater cooperation would benefit both the study programme and the graduation thesis.
8) Many students take feedback very lightly. Although student feedback is important, the light-hearted attitude of some students may still call into question the quality of the feedback.
9) Representatives of companies in the field assessed the level of graduation theses lower than average. The ability of written self-expression is low and is one of the reasons for the low level of graduation theses and failure of writing them. In the view of the industry, the shortcomings of theoretical learning are reflected in the lack of problem-solving skills. Students often do not understand the need for theory because it is perceived as a deviation from reality and practice. Experience could be shared with the Master's programme in Logistics to get ideas for improving communication with employers and industry to better match their expectations with students' assignments, case studies and graduation theses.
10) Lack of motivation seems to be the cause of the high dropout rate. Support services need to be put in place to help keep students motivated. Motivation can be increased by adding practical case studies to the study, which can be combined with research. Students should be given written assignments that would help them develop their self-expression skills and improve the quality of their graduation theses. As this is a problem in many study programmes, it is worth looking for solutions together.
11) The integration of Russian-speaking students is a problem. At the beginning of their studies, they are in the majority, but at the end there are only a few of them left. Russian-speaking students should be encouraged to join the Estonian-speaking community and vice versa. Social relationships between students are the glue that holds a group together. As the studies are conducted entirely in Estonian, it is necessary to offer language courses for Russian-speaking students that would help them to cope better with learning in Estonian.

NAVIGATION (PROFESSIONAL HIGHER EDUCATION)

Strengths

1) The state-of-the-art simulation center which is currently being updated deserves recognition. The center is also a unique data source that can be used both for research at TalTech and for developing international cooperation. The navigation simulation offers excellent opportunities to practice navigation, and some lecturers also have the corresponding pedagogical training and experience.

2) Lecturers have specific knowledge in their field and their work experience allows them to provide good practical examples of everyday work. Lecturers have excellent relationships with their students, which means that the lack of motivation is certainly not due to the way lecturers teach their subjects. Lecturers include representatives of both younger and older generation, which in turn allows for different approaches to learning and teaching.

Areas for improvement and recommendations

1) To involve guest lecturers or professors from other faculties/universities, both locally and internationally. Through this, research-based learning in addition to standard learning could be included in STCW (*Standards of Training, Certification and Watchkeeping for Seafarers*) courses.
2) To involve alumni and employers more in study programme development. The interviews revealed that they had not been contacted for this purpose.
3) To enable students to gain early experience at sea, showing them how different professionals actually work in a ship's crew. Hopefully this will help increase motivation and reduce dropouts.
4) Constant updating of educational software is expensive. As there is a wide range of such teaching aids in place, it is advisable to put in place a long-term plan that ensures continuous development of the tools, mitigates the risks of renewal, ensures sustainability in terms of lecturers and keeps know-how in-house.
5) To encourage academic staff from other faculties and international partners to use the opportunities of the simulation center for research. Students could also be involved as assistants in scientific simulation experiments. It would also help solve the problem of motivation.
6) English is the official language of the shipping industry. At the same time, the GDMSS protocol is monitored in Estonian in the simulation room. English should be used more in studies, which would facilitate the use of sources in the graduation thesis and encourage students to look for work outside Estonia as well. It is also important to pay attention to the lecturers' English language expression and writing skills.
7) Pedagogical training or the development of a teaching portfolio should be a requirement for all new lecturers selected or appointed to full-time positions.

PORT AND SHIPPING MANAGEMENT (PROFESSIONAL HIGHER EDUCATION)

Strengths

1) Study programme development takes place in several stages, where the focus is on the combination of subjects in the study programme as well as on their content. International comparative analyzes with similar study programmes have highlighted various examples that can be applied in the context of this study programme. This is a very good and constructive approach to study programme development.
2) TalTech core subjects (such as mathematics and information technology) are included in the study programme, which is in line with the merger strategy.
3) The greater number and variety of electives gives students more freedom of choice.
4) Awareness of plagiarism and its consequences and open dialogue between lecturers and students on work and research ethics.
5) Very good contact with industry stakeholders.
6) E-learning opportunities are widely used compared to the specialties of maritime studies or navigation. This allows lecturers to plan resources and make the learning process more efficient. Some subjects can be taken by students in distance learning.
7) Students have excellent job prospects. Learning is based on a holistic approach to the field, stakeholders have the opportunity to contribute to learning in different ways. Research-based learning is clearly present.

Areas for improvement and recommendations

1) The study programme council should also include two other representatives of the world of work - a logistics company and a company representative who imports or exports products through the supply chain including ports and shipping.
2) More suitable courses from other TalTech units could be included in the study programme to allow lecturers in the core subjects of the study programme to focus more on the development of specialty subjects and the development of new ones.
3) According to employers, it is not necessary for an educational institution to have the latest and most expensive technology if employers can offer it as part of an internship or train their own employees. The acquired basic knowledge and basic technologies allow the student to learn quickly and they can apply their knowledge and skills already while performing their internship/working.
4) Considering all the changes made in the study programme, which in turn have changed learning and teaching, it would be necessary to make the pedagogical and e-learning in-service training offered by TalTech mandatory for lecturers. This would ensure a common understanding and approach to learning and teaching.

5) The Maritime Academy should be more proactive in gaining an overview of possible internship placements for its students. The student should seek, apply for and present himself/herself for an internship as part of his/her practical training.
6) There is a need to find a better balance between practical and theoretical learning. At the moment, learning is too theoretical and practical skills are in the background. This leads to a lack of practical problem-solving skills, which puts the development thereof on companies.
7) Research results should be communicated through various channels. The language barrier here is an obstacle, because the dissemination of research results is based on cooperation with other researchers and foreign higher education institutions through a peer review system, but in this case it is almost impossible because both teaching and research (incl. graduation theses) are in Estonian.

WATERWAYS SAFETY MANAGEMENT (PROFESSIONAL HIGHER EDUCATION)

Strengths

1) An action plan has been developed for the accreditation of "A" or "B" categories by the International Hydrographic Organization.
2) Collaboration with external partners to access of students to state-of-the-art equipment and training opportunities.
3) A very active study programme manager who has a strategic vision for study programme development. Active study programme council and good relations with alumni.
4) One of the strengths of the study programme is the possibility to apply theoretical knowledge in the real world of work. This is further strengthened by the targeted development of profession-specific digital competences and tools.
5) Although the study programme is practical in nature, the management of the study programme has also been able to integrate research-based tasks into the teaching, in cooperation with lecturers from other TalTech faculties. This is a great example of cooperation and its development between TalTech and the Maritime Academy.

Areas for improvement and recommendations

1) Consideration needs to be given to maintaining a good level of learning and teaching as the total number of students increases due to the drop-out rate. This issue should be addressed as part of the preparations for IHO accreditation.

2) The development of a study information system should be continued to support the management of learning. It should also be explored how e-learning opportunities can better support the implementation of the study programme and how it can reduce the physical distance between the main campus of TalTech and the Maritime Academy, i.e., ensure better access to subjects and learning materials.
3) Most of the lecturers work part-time, which is why the relationship with the employer university is relatively weak. Differences in the roles of full-time lecturers (assistant professor is engaged 100% in teaching, another professor is engaged 100% in research) also do not contribute to the creation of a unified team.
4) Not all academic employees with research responsibilities are engaged in research. Teachers on the tenure path would like to do more research, but are overwhelmed with teaching. However, the professor engaged in research is also ready to teach. In order to free up resources for research, the teaching burden on people on the tenure path should be reduced. If TalTech wants to achieve its research goals, it is necessary to hire more people to do it. However, if TalTech considers the current composition to be sufficient, the targets should be set reduced a bit.
5) To reduce drop-out rates, alumni or others working in the field should be invited to describe their future career opportunities to students more.
6) Students are interested in research and development, and it is worth using this enthusiasm and involving them in various projects.
7) Students should be more encouraged to undertake internships at sea and in an international environment.

11. Clause 41 of the document "Quality Assessment of the Study Programme Group at the First and Second Level of Higher Education" stipulates that the Assessment Council shall approve the assessment report within 3 months after its receipt. The Council will consider the strengths, areas for improvement and recommendations identified by the Assessment Committee and decide to carry out the next quality assessment of the Study Programme Group in seven, five or three years.

12. The Council considered the strengths, areas for improvement and recommendations set out in clause 10 and found that the study programme, the studies provided on it and the development activities related to the studies meet the requirements.

13. In view of the above, the Council

DECIDED

To approve the assessment report and to carry out the next assessment of the quality of the Transport Services Study Programme Group of Tallinn University of Technology in 7 years.

The decision was adopted by 10 votes in favor. None opposed.

14. The decision is valid until 27.04.2027

15. A person who considers that the decision has violated his or her rights or restricted his or her freedoms may file a challenge with the Assessment Council of EKKA within 30 days after the appellant became aware of or should have become aware of the contested act. The Assessment Council shall send the challenge to the challenge committee of the Assessment Council of EKKA, which shall submit a written, impartial opinion to the Assessment Council on the reasoning of the challenge within 5 days of receipt of the challenge. The Assessment Council shall resolve the challenge within 10 days of receipt, taking into account the reasoned position of the appeal committee. If the challenge needs to be further investigated, the Assessment Council may extend the term for reviewing the challenge by up to 30 days. Contestation of a decision in court is possible within 30 days as of its service by submitting an appeal to the Tallinn Courthouse of the Tallinn Administrative Court pursuant to the procedure provided for in the Administrative Court Procedure Act.

Eve Eisenschmidt
Head of the Council

Hillar Bauman
Secretary of the Council