CENTRE FOR QUALITY ASSESSMENT IN HIGHER EDUCATION

EVALUATION REPORT

TRANSPORT ENGINEERING STUDY FIELD

at VILNIUS GEDIMINAS TECHNICAL UNIVERSITY

Expert panel:

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3. **Assoc. Prof. Dr. Vasilij Djačkov,** *academic,*
4. **Mr Edmund Lisovski,** *representative of social partners'*
5. **Ms Irina Duma,** *students' representative.*

Evaluation coordinator -

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Report language – English

Study Field Data*

Title of the study programme	Programme " **Transport engineering** "	Programme " **Transport engineering** "
State code	6121EX051	6211EX058
Type of studies	Full time, part time	Full time
Cycle of studies	first	second
Mode of study and duration (in years)	4, 6	2
Credit volume	240	120
Qualification degree and (or) professional qualification	Bachelor of engineering	Master of engineering
Language of instruction	Lithuanian, English	Lithuanian, English
Minimum education required	Secondary education	Bachelor's degree
Registration date of the study programme	19 05 1997	19 05 1997

** 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 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) visit of the review team at the higher education institution; 3) production of the evaluation report by the review team and its publication; 4) follow-up activities.*

On the basis of 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 such study field is not accredited.

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

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

1.2. THE REVIEW TEAM

The expert panel was completed according he Experts Selection Procedure (hereinafter referred to as the Procedure) approved by the Director of Centre for Quality Assessment in Higher Education 31 December 2019 Order No. V-149. The Review Visit to HEI was conducted by the panel on 17/11/2020.

1. Prof. Dr.-Ing. Haldor E. Jochim, FH Aachen University of Applied Sciences, Professor of Railway Engineering, Dean of Civil Engineering (team leader), Germany
2. Prof. Dr. Sc. Eng. Irina Jackiva (Yatskiv), Transport and Telecommunication Institute Riga, Vice-Rector for Sciences and Development Affairs, Director of MSc in Transport and Logistics, Professor of Mathematical Methods and Modelling Department, Latvia
3. Assoc. Prof. Dr. Vasilij Djačkov, Klaipeda University, PhD in Technical Sciences (Specialization Transport Engineering), Lithuania
4. Mr Edmund Lisovski, JSC "Altas komercinis transportas", Product Development Manager, Vilnius, Lithuania
5. Ms Irina Duma, Technical University of Cluj-Napoca (Faculty of Automotive Engineering, Mechatronics and Mechanics), Master student of Advanced Techniques in Automotive Engineering, Romania.

1.3. GENERAL INFORMATION

The documentation submitted by the HEI follows the outline recommended by the 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.	Course Cards
2.	

1.4. BACKGROUND OF STUDY FIELD/STUDY FIELD PLACE AND SIGNIFICANCE IN HEI

Transport Engineering is an important engineering field in Lithuania, for various reasons.

1. Motor-cars (automobiles) have been a vital means of individual transport for many decades. Private car ownership is high with a tendency to increase further with rising income. Thus the engineering of motor-cars has become a major branch of mechanical engineering.

2. On a national and regional level, the technical service and repair of motor-cars has been gaining importance due to the rising number of cars. Well-trained specialists in this field are in great demand.

3. Taking into account the challenges by climate change it is obvious that the technology of motor cars must change in due course. Apart from becoming more efficient, the technology will have to move towards alternative means of energy fast. That change requires a huge amount of new thinking, resources and equipment in teaching and research.

4. Lithuania is the main transit country in the Baltics. The share of transport-related business is higher than the international average in this country. That is especially the case in goods traffic, thus leading to special attention to this part of automotive engineering when analysing study programmes and research.

Information about the role of the HEI

Vilnius Gediminas Technical University is a state higher education institution and a public legal entity operating as a public body. It is one of the largest higher education institutions in Lithuania, and an important university in technical and engineering education and research. The goals of VGTU are to educate professionals and to carry out research at an international level, especially in the fields of sustainable construction, transport, sustainable environmental protection, information technology and communication science. The university consists of

faculties, departments, research and training laboratories, research and academic institutes and centres, a library, a publishing house, the administrative unit and other divisions.
A faculty is a division that organises research and study processes. The most important division of studies and research at the university is the department, which manages the research and study programme. VGTU is a university with a technical profile, therefore engineering studies predominate.

II. GENERAL ASSESSMENT

The **first cycle** Transport Engineering study field at VILNIUS GEDIMINAS TECHNICAL UNIVERSITY (VGTU) is given **positive** evaluation.

Study field and cycle assessment in points by evaluation areas.

No.	Evaluation Area	Evaluation of an area in points*
1.	Study aims, outcomes and content	4
2.	Links between science (art) and study activities	4
3.	Student admission and support	4
4.	Studying, student performance and graduate employment	4
5.	Teaching staff	4
6.	Learning facilities and resources	3
7.	Study quality management and publicity	4
	Total:	**27**

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

The **second cycle** Transport Engineering study field at VILNIUS GEDIMINAS TECHNICAL UNIVERSITY (VGTU) is given **positive** evaluation.

Study field and cycle assessment in points by evaluation areas.

No.	Evaluation Area	Evaluation of an area in points*
1.	Study aims, outcomes and content	4
2.	Links between science (art) and study activities	4
3.	Student admission and support	4
4.	Studying, student performance and graduate employment	4
5.	Teaching staff	4
6.	Learning facilities and resources	3
7.	Study quality management and publicity	4
	Total:	**27**

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

III. STUDY FIELD ANALYSIS

3.1. STUDY AIMS, OUTCOMES AND CONTENT

Study programmes' 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 transport industry plays an important role in the country's economy and society and makes a significant input into gross domestic product. Therefore, it is very important to prepare skilled specialists and to supply the labour market with effective solutions in the field of transport systems to sustain the development rates of the country's and world economy.

The first-cycle (Bachelor) study programme of Transport Engineering focuses on educating specialists with theoretical and practical knowledge The aims of the second-cycle (Master)study programme are to provide special up-to-date knowledge of technological science in the field of land transport engineering studies, to develop special problem-solving capabilities required for research and to acquire leadership and innovation capabilities applicable to technological problem-solving.

Efforts are made to avoid duplication mainly of the Bachelor programme with similar study programmes in other universities of the country. The study programme is constantly updated and adapted to the changing market conditions.

(2) Expert judgement/indicator analysis

Transport Engineering Bachelor and Master study programmes aims and outcomes are in conformity to the needs of the society and the labour market.

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

According to the self-evaluation report, the objective of the Bachelor study programme is to prepare competitive, critically thinking specialists in transport engineering, providing them with the knowledge of fundamental sciences, engineering and management; educating them to creatively solve the problems of transport engineering, to design various vehicles, systems and companies, to analyse and socially responsible manage technological processes, to solve the

tasks of vehicle efficiency increase integrating renewable energy sources, and to maintain personal professional competence by lifelong learning.

On page 10, the self-evaluation report II also states that the VGTU's objectives in the Master programme are: to prepare qualified, creative and socially active professionals, who can work successfully in both the scientific community and labour markets of Lithuania and elsewhere; to conduct international-level research concentrating scientific activities in departments with the highest level of competence; to implement VGTU's policy of recruiting established scientists; to develop research-based innovations that benefit society and business; to take its place as one of the university leaders in the Baltic region in the fields of sustainable construction, transport, sustainable environment, information technologies and communication; to promote the sustainable development of the country and region; to develop the innovative society.

(2) Expert judgement/indicator analysis

Transport Engineering Bachelor and Master study programmes aims and outcomes are in conformity with the above described objectives and the mission of VGTU, which is to develop a publicly responsible, creative, competitive individual who is receptive to science, the latest technologies and cultural values; to promote scientific progress, social and economic wellbeing; and to create value that ensures the development of both Lithuania and the region in a global context.

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

(1) Factual situation

On p. 10-11, the SER I states that the learning outcomes for the study Programme were drafted in accordance with the descriptor for the cycle of studies and meet the requirements in the Lithuanian Descriptor of the Content of Qualifications and in line with a number of other legal acts.

According to the SER, the Master study Programme has been developed in compliance with the requirements outlined in ISCED classification, in according with the Descriptor for the General Requirements for Master's Degree programmes, Vilnius Gediminas Technical University study provisions and the requirements of the descriptor, considering the remarks of the stakeholders, students and CQAHE experts as well as the experience of other HI institutions abroad.

The scope of the Bachelor degree studies is 240 credits consisting of the field of studies courses, course units for deepening knowledge in the field of studies, internships and final thesis. The distribution of the subjects is in accordance with the legal acts.

The scope of the Master degree studies is 120 credits consisting of field of studies courses, elective courses and final thesis. The distribution of the subjects is in accordance with the legal acts.

(2) Expert judgement/indicator analysis

The Transport Engineering Bachelor and Master Study Programmes are in compliance with applicable legal requirements to the field and cycle study programmes.

***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 Bachelor Programme focuses on educating specialists with theoretical and practical knowledge (SER I p. 8): a significant part of the disciplines taught in the Programme are with exercises or laboratory work, during which students perform real tests with real equipment and real measuring instruments. This allows students to consolidate the theoretical knowledge provided during lectures in a more effective manner. Another important feature of the Programme is its versatility – the Programme has as many as five specializations (one of them is taught in English) adapted to the needs of the contemporary world: Automobile Transport Engineering; Railway Transport Engineering; Mobile Machinery Engineering; Self-Driving Vehicles; Automotive Engineering (available in English).

The Master programme (SER II p. 9) is designed to provide specific relevant knowledge of technological sciences related to land transport engineering, to form special problem-solving capabilities required for research and to develop the leadership and innovation capabilities applicable to technological problem-solving. Graduates of Automotive Transport Engineering specialise in research in the field of automobile maintenance, development, efficient and safe operation, graduates of Railway Engineering specialise in the field of maintenance, development and safe operation of the rolling-stock. Graduates of Vehicles and Equipment Engineering specialise in the field of road construction, loading vehicles and equipment, pipeline transport technological equipment maintenance, improvement, efficient and safe operation. Graduates of Transport Engineering Management specialise in the field of management optimisation of transport companies, structural improvement, research, assessment of the needs for vehicle maintenance, business development.

(2) Expert judgement/indicator analysis

The SER I and II give evidence that the recommendations of the last external evaluation of both programmes have been implemented.
In the Transport Engineering Bachelor Degree programme the principles of critical review and evaluation are developed in all the categories of the Programme's learning outcomes. Communication and Project planning and management skills have been included in Personal and social skills and partially in Research skills.

As to the Master programme, the learning outcomes have been included into course descriptions. The relationships between the outcomes of the courses and the programme have been clearly substantiated and interlinked.
The distinction between Transport Engineering taught and researched in the Faculty and transport-oriented programmes in other Faculties (Environmental Engineering, Civil Engineering) is explained plausibly (SER p. 15).

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 course units of the Transport Engineering bachelor study programme are arranged to consistently develop student abilities. At the beginning, fundamental course units are presented. Later studies are fundamental course units for supporting world view, holistic thinking and understanding general processes. Specific course units deepen knowledge of a certain sufficiently narrow field and the learner becomes an expert in a particular field. Optional course units broaden the learners' horizons, assist in acquiring knowledge of the selected specialization and the basics of other fields, which helps to better understand certain ongoing processes of specific course units. Training takes place in the seventh semester and provides students with practical skills in the individual field of study. The complex project presents the opportunity to gain teamwork experience. The bachelor's thesis demonstrates student skills acquired throughout the studies in their entirety.
During the 1st semester of the Transport Engineering master study programme the final thesis topics are chosen, the theoretical knowledge of the chosen field is deepened, the analysis of literature sources are performed. The development of the final thesis continues during the whole master degree study process.
The description of the Transport Engineering master study programme has been revised by supplementing the requirements for graduates with minors in the investigated field of studies entering the programme, allowing the candidates to take bridging courses during the first term to help them meet the requirements for the programme.

(2) Expert judgement/indicator analysis

Bachelor and Master Transport Engineering study programmes ensure consistent development of competences of students.
The bridging courses are a good offer for the students to meet the requirements of the Bachelor programme. It would even be useful to extend them even further to let the students acquire the necessary additional knowledge and extend the subject description accordingly. This might improve the dropout rates caused by the time difficulties that master students meet due to having to combine work with studies.

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 students of the Transport Engineering bachelor study programme can choose one subject from the proposed alternatives given by the study programme from the 2nd to the 5th and in the 7th semester.

For deepening the specialisation of the Transport Engineering master study programme, three alternative subjects are provided in the 2nd semester. At the university level, a free optional subject (6 credits) is provided only in the 3rd semester of the Master's study programme.

Students and listeners can study according to individual study plans which are created by arranging the subjects of study programmes in time according to the needs of students/listeners. The students' study plan is made by choosing courses (modules) from the study programme. Students can combine full-time studies with part-time studies. Study programmes or individual course units can be studied remotely.

(2) Expert judgement/indicator analysis

The opportunities for students to personalise the structure of field study programmes according to their personal learning objectives and intended learning outcomes are present in the study programme structure.

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

(1) Factual situation

The procedure for the preparation and defence of final theses is regulated by "The description of the procedure for preparation and defence of final theses", approved by the VGTU Rector's order no. 10.8-575 of June 12, 2019.
The topics of final theses are presented to the department by the lecturers, students choose the proposed thesis topic and thus get assigned the Supervisor of the thesis. Students can also propose their topic of the final thesis in coordination with the Supervisor. At the department meetings, the topics of final theses are discussed and adjusted, it is assessed whether they correspond to the aim of the TESP and the intended learning outcomes. The Dean approves the topics of the final theses and the Supervisors by his decree during the 1st semester.
The list of final theses for bachelor and master degree studies for the last three years is provided in the Self-Evaluation Report.

The review of the example of final theses by the experts confirmed that the final theses are in compliance with the field and cycle requirements. However, there are some drawbacks in master degree final theses. Some of them provide only research situation analysis and are deficient in critical literature review. Many final master degree theses do not show sufficient conclusions on the accomplished critical literature review.

(2) Expert judgement/indicator analysis

The Transport Engineering Programme bachelor and master degree final theses are in compliance with the field and cycle requirements. However, measures should be taken to ensure better content quality of the master degree final theses.

Recommendations for this evaluation area:

The supervision of the Master degree final theses should be improved to ensure better research situation analysis, literature review and conclusions .

3.2. LINKS BETWEEN SCIENCE (ART) AND STUDY ACTIVITIES

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 latest assessment of Research and Development (R&D) activity in transport engineering was carried out in 2018. In this external evaluation, the quality of the research activity was given 3 points, the economic and social impact of R&D activity – 4 points and the viability of R&D activity – 5 points. The grading system is not explained in the SER I, where this is mentioned on p. 19, but the experts know from other accreditations that these are grades ranging from 'good' to 'very good'. The conducted research on Transport Engineering (T003) is thus of a high standard and recognized at the national level.
The research of the faculty of Transport engineering at VGTU is carried out based on the field of science approved by VGTU – "Sustainable Transport", which is identified as a priority in the Lithuanian Smart Specialisation Strategy. The topics are Autonomous land and air transport; Environmentally friendly transport; Green logistics; International transport corridors; Traffic safety technologies; Urban mobility.
A comparison of the results for 2017, 2018 and 2019 shows an increase in the number of papers in the field of Transport Engineering in VGTU. In 2017, in the field of Transport Engineering in Lithuania there were 39 papers published, of which 26 papers were published by VGTU researchers, accounting for 66.7% of the total papers in Lithuania. In 2018, 45 papers were

published by VGTU researchers, which accounted for 73.8% of the total papers in the field of transport in Lithuania. For the period of the last 3 years, the teaching and research staff of the Faculty have prepared 248 research papers.
The Faculty collaborates closely with the academic community, business, decision makers and society. Wide-ranging cooperation with the business sector is observed.
According to the SER the international cooperation in the field of scientific research the study programme is conducted through cooperation agreements with foreign scientific institutions and participation in joint scientific projects for ex. EU funded programmes (there are at least 11 examples mentioned in the SER). Future plans for the development of international cooperation in scientific research include tangible and relevant measures.
In 2016, to increase internationalization, the focus was switched in favour of searching for new foreign partners involved in the performance of international projects, which led to winning three Horizon 2020 (H2020) and two Interreg projects, thus ensuring significant funding for research intensifying cooperation with EU industrial companies and research institutions. The representatives of the Faculty actively participate as experts in the transport committee of the H2020 programme and contribute to the development of the transport sector in the Baltic Sea Region.
The scientific-research budget is planned to cover the scientific and research activities.

(2) Expert judgement/indicator analysis

Most of the previous accreditation recommendations were implemented straight after the accreditation process and it gave a visible progress for Faculty development.
The topics of the publications are generally related to the courses delivered by the academic staff members.

Very good results are reported in the SER, but they are mainly quantitative. To review quality standards set for Research quality criteria for the Research output should be included too.
The Staff of the Faculty is active in ERASMUS programmes and visited foreign Universities on a regular basis. The staff of the Faculty participate in EU research projects and some of the partners are invited for guest lectures.
But it is important to invite more foreign professors and researchers for courses and research works. This will give the necessary international aspect to the study and attract more students.

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

(1) Factual situation

The academic staff of the Faculty do research work and therefore are well acquainted with the latest trends and innovations in their field. Course units are taught by the staff working on research projects, so that the current transport engineering issues and technologies being

developed are addressed. Frequently there are possibilities for the renewal of specializations and individual course units.
In the 2nd cycle studies more than 50% of modules are read by the staff working on projects where current transport engineering issues are solved and new technologies developed.

(2) Expert judgement/indicator analysis

Research seems to be an integral part of the study programmes linked to the study process by lecturers' research activities, which leads to the improvement and updating of the study course content, design of practical tasks.

In the 1st study cycle the inclusion of research methods/critical thinking in the curriculum does not appear to be adequate, particularly because the explicit emphasis on scientific research in the Faculty suggests otherwise. Multi-disciplinary projects do not appear to be conducted.

***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

Students of both cycles are encouraged to do research through the final theses, term papers and complex projects.
The 1st cycle students focus on the application of the latest scientific achievements in solving engineering tasks, and research work is carried out during the 2nd cycle studies.
To stimulate 2nd cycle students' ability to be interested in research, to develop their creativity, the module "Research in Transport Engineering" has been introduced in the study programme.
Students are encouraged to present research outcomes at scientific conferences, for example, VGTU conference for young researchers 'Science – the Future of Lithuania', taking place every year. In the SER information about it is presented at great length.
Final theses of the 2nd cycle students are linked to ongoing and past projects, as well as to the initial screening of new ideas from which project applications will be submitted in the future.

(2) Expert judgement/indicator analysis

The research conferences organized in-house get students involved in presenting their thesis papers. This seems to be a very effective practice. Faculty members also confirmed that the research activities are a part of the study process and specifically the master programme students confirm that they are involved in the projects.
The numbers of students who conduct research and have attended conferences are not high enough (7% and 9% in 2019 year) and should be increased.
It is necessary to consider more additional opportunities for attracting funding for students to engage them in research activities (internship, involvement in projects etc.). These types of activities will need more attention in the future.

Recommendations for this evaluation area:

- *Review quality standards set for Research by including quality criteria for the Research output. Interdisciplinary research might help with the benchmarking during that process and is strongly recommended.*
- *Expand cooperation with internationally recognised researchers and industry experts relevant for the study programme.*
- *It is necessary to increase the number of students involved in research projects and other activities for the development of the students' research skills.*
- *The role of research methods should be emphasized in the 1st cycle programme.*

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

The number of students admitted within both study cycles, together with the lowest and maximum grades, is presented in the Self Evaluation Report (for the past three years: 2017, 2018 and 2019).

The admission criteria were not specifically detailed in the self-evaluation report, but they are clear and easy to follow on the website (https://www.vgtu.lt/for-international-students/admission/50773?lang=2).

The general admission methodology for the first cycle is in line with the centralised admission process in Lithuania;

(2) Expert judgement/indicator analysis

The student selection and admission criteria follow the general Lithuanian criteria and are published on the website in an adequate way.

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

There is a procedure of recognition of foreign qualifications for both study cycles, based on the ECTS system. The procedures are in place for mobile students and students of prior studies in the Lithuanian education system. The whole process is coordinated by the Center for International Studies (ISC) established in 2015.

(2) Expert judgement/indicator analysis

It is noticed that these procedures are not always publicly available in English, therefore the attractiveness for international students may not be as high as it could be.

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

(1) Factual situation

VGTU has institutional agreements through international mobility programmes, such as Erasmus+ and DAAD. The procedure for admitting students to take part in these mobilities is publicly available online and the criteria of ECTS recognition is in accordance with the European Commission guidebook.

According to the discussions carried out during the visit, VGTU supports outgoing students with carrying out international mobility, including financially. One reason for students not applying for mobility may be that the change from their hometown to a capital city is already major enough and they are afraid of another change to an international environment. From the interviews with students, the panel got the impression that this view may not be far-fetched.

(2) Expert judgement/indicator analysis

There is a slight drop of outgoing students during the past three years (for Erasmus+ mobilities), while for DAAD mobilities no students applied in 2019. This development suggests that there might be a lack of advertising for these kinds of mobility among students.

***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

The financial support for students consists of scholarships (for academic performances) and allowances (for social cases), together with loans, for all categories of students.

Other academic, psychological and personal support is offered both by the university itself and by the Student Body, which is involved in all aspects of the students' life within the university.

According to the discussions held with university representatives, the VGTU's efforts to improve the psychological support system consists of appointing a 2nd psychologist in order to have individual meetings with students, student mentors for their younger colleagues and teacher mentors.

(2) Expert judgement/indicator analysis

According to the discussions held during the visit, the financial support is sufficient to cover the basic needs of students (accommodation within university dormitories, canteen meals and public transportation), therefore the financial support for students is considered to target its goal.

***3.3.5** Evaluation of the sufficiency of study information and student counselling.*

(1) Factual situation

The main information needed for students regarding the study field content, learning outcomes and counselling opportunities are publicly available and at their disposal.

However, according to the questionnaires disseminated by the university, one of the main reasons of students dropout is the lack of knowledge about what the first cycle of studies is about, lack of proper preparation from the secondary education and complexity of the study field's content.

(2) Expert judgement/indicator analysis

The dropout rate is high (a little bit less than 50% for full-time studies and a little bit above 50% for part-time studies) in the first cycle of studies, which suggests that there is a need for improvement of the support services. Even though there are bridging courses (in order to keep up with the fundamental subjects such as Mathematics, Chemistry and Physics) in order to help students in the transition process from secondary to higher education, it is suggested that there should be an improvement of the counselling services in order to reduce the dropout ratio and to increase the studies termination ratio (for the first cycle of studies).

Recommendations for this evaluation area:

- *It would be useful to have the admission information also in English, preferably easily accessible on the website, in order to attract international students, especially for those programmes that are fully taught in English;*
- *Efforts to raise the awareness and attractivity of international mobilities programmes should be conducted in order to ensure the participation of each student who would wish to be part of this kind of experience;*

- *It is considered that a tracking mechanism of the efficiency of student counselling and support processes would be helpful to improve those services that might not work in the required quality;*
- *In order to ensure the continuity of counselling services, it is recommended that they be held virtually, with a fixed schedule, in order to reach all students that might be in need (both group and individual meetings);*
- *The study information for candidates to the first cycle does not appear to be sufficient, given the reasons for dropping out from university, therefore a more complex advertising for the study field is recommended.*

3.4. STUDYING, 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

The faculty provides Transport Engineering studies in all three cycles:
The Bachelor programme offers five specializations, depending on the interests of the students and one specialisation in the English language. There is a choice of full-time and part-time studies. The full-time mode of studies is the basic one.
The Master programme offers four specializations, serving individual interests of the students, and one specialisation in the English language. Second-cycle lectures take place in the evenings, from 4:20 p.m. until 9.30 p.m.

VGTU implemented and started using the Moodle virtual learning environment actively before the COVID19 pandemic, which enabled it to organize distance learning more efficiently.
Teaching staff members actively communicate with last year's Bachelor students and ask social partners (e.g. alumni club members) to take part in meetings to explain prospective advantages of a master's degree. By sharing their career stories graduates also convey information about the market demand for Master graduates.
Those graduates, who, having demonstrated an excellent abilities in the field of Transport Engineering and R&D, get invited regularly and can apply for doctoral studies in the science field of Transport engineering

(2) Expert judgement/indicator analysis

In the SER it is stated that the study programme provides interactive study methods adequate for achieving the intended learning outcomes. The interactive study methods used in the programme are mentioned in the descriptions of course units (Annex No. 5).

Many of programmes have classic learning outcomes. It is recommended to update the learning outcomes taking into account new developments.

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

(1) Factual situation

The VGTU facilities and library infrastructure are compatible with most the needs of students with disabilities. The schedule for earning credits can be practised in a flexible way, and they can be partially or completely exempted from fees. At the meeting faculty teachers mentioned that the Faculty had students with disabilities and that they are offered emotional support or short-term psychological help.

(2) Expert judgement/indicator analysis

The Faculty ensures access for socially vulnerable groups and students with special needs in accordance with Lithuanian regulations. See 3.1. Recommendation.

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

There is a monitoring system of student study progress, the results are provided in a way the experts understand easily, and so do the students. The monitoring tools are listed in the SER extensively and during the interviews the students showed that they understand these tools.
Students who terminate the studies also fill in surveys. That helps clarify the causes for drop-outs.
In order to maintain student motivation, the faculty invites social partners to share their experiences in integrated lectures. Students often use their own cars to reach laboratories for doing their individual measurements or calculations.

(2) Expert judgement/indicator analysis

Pursuant to the criteria for the strategic activity plan approved by the Faculty, the share of graduates from the first cycle studies must be at least 70% of the number admitted. The indicator is fulfilled almost satisfactorily for full- time studies, but not satisfactorily for part time studies. At the meeting the panel did not hear a plan how the Faculty intends to achieve this strategic Faculty target for first-cycle part-time students.

3.4.4. *Evaluation of the feedback provided to students in the course of the studies to promote self-assessment and subsequent planning of study progress.*

(1) Factual situation

Developing and implementing the feedback system is a part of the quality monitoring of the study process. Achievements are announced via the AIS subsystem. Provision of the study material and the communication with students are managed by use of the MOODLE virtual study environment. The efficiency of such systems was revealed during the COVID-19 quarantine. For students there is an obligation to fill up surveys twice in a calendar year. The Survey data and the Dean's comments on the actions taken in the faculties are available for students and teachers.

(2) Expert judgement/indicator analysis

At the SER for the first cycle study a table is attached showing the results of the student survey on the study process. However, the SER for the second cycle does not show any survey data. During the meeting with students the expert panel got feedback that the faculty nevertheless pay attention to survey results and react in a positive way. Not all students seemed to agree that the surveys should be obligatory, as they currently are. Sometimes, just when students need to check their exam grades or to do something urgent in the system, the requirement to fill in the survey appears. Students tend to be annoyed by this, which might influence the results in a negative way.

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

(1) Factual situation

There is a graduate employment tracking mechanism, which consists of a questionnaire spread among graduates. According to the data provided by VGTU, there is a share of 30-40% of graduates employed within companies in the field of Transport Engineering, in a timeframe of 10 years after graduation, and the percentage declines over time.

(2) Expert judgement/indicator analysis

There is no specific data provided on the graduates' job positions that require the learning outcomes of the study field. However, most graduates have positions that require high qualifications and a part of them continue their career path within the companies that they have conducted their internships in.

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

(1) Factual situation

The ethics and academic integrity system within VGTU consists of specific norms to be followed by the whole university community. Regarding intellectual property and citing, VGTU uses plagiarism detection software programs for bachelor's and master's thesis.

(2) Expert judgement/indicator analysis

Besides tracking the deviations from the ethics and academic principles, together with the availability of these principles online, there should be a trend for organisational prevention mechanisms put in place at institutional level and particularities highlighted at study field level, such as academic writing courses delivered from the first years of studies (not only explaining the norms at the moment of thesis writing) and awareness campaigns regarding possible violations of ethic and academic integrity rules.

***3.4.7.** 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

A methodology of submitting appeals and complaints regarding the study process is presented in the Self Evaluation Reports. Apart from this methodology, students have the chance to submit their thoughts on the study content, including their opinion on the teaching methods at the end of each semester, by filling in a questionnaire for each course. The high completion rate is ensured by the rule that without having the questionnaire completed, students cannot instantly access the learning resources for the following semester (see also section 3.4.4).

(3) Expert judgement/indicator analysis

Even though the constraint for learning resources seems to provide a high number of submitted feedback forms regarding each course, we believe that motivating students by showing them that their feedback is considered and changes can be made based on their completions would be even more efficient as a feedback.

Recommendations for this evaluation area:

- *A prevention mechanism should be put in place by having official awareness sessions of the ethics and academic integrity principles (e.g. academic writing, citing, examples of deviations from the ethics and academic integrity principles - for the first cycle and specific notions for research ethics in the second cycle).*

3.5. TEACHING STAFF

Study field teaching 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. Entrance requirements are well-founded, consistent and transparent.*

(1) Factual situation

In SER the required information about teaching staff was presented. The study programme employs 109 lecturers and 72% of them are professors and associate professors.
The educational experience of the majority of the teaching staff exceeds 10 years significantly. Many of them teach in more than one subject, have written several course books on the subjects taught, have researched in the field and have had internships in the companies, research and education institutions.
Although during the assessment period the number of professors and associate professors slightly decreased, the teacher/student ratio in the past three years remains quite stable (about 0.42) though the numbers of students decreased. The study process appears to be carried out consistently and stably.
Referring to the figures provided in report, it can be said that teachers whose principal employment is HEI, i.e. VGTU and who teach in the study field make up the main part of the teaching staff. The rest of the teachers work at scientific/education institutions (including universities, colleges, and institutes). The relative share of teachers employed at least part-time was about 56% in the 2019-2020 academic year.
About 20% of teachers who are involved in the Programmes in both cycles have experience in industry. In the past 3 years, there was no change in this tendency and the turnover of teachers-practicians remains stable (SER I p. 47).
Main research interests of teaching staff lie in the areas of the programme and are published in papers in journals and international conference proceedings etc.
70% of lecturer workload is allocated for the pedagogical and methodological work, the rest to the scientific work (SER I p. 48, SER II p. 40).
The distribution of the teaching staff turnover by position and age is adequate, for instance, (1) associate professors make up to 60% of the teaching staff, most of them fall in the group of 31-50 years of age; (2) there are good resources for staff renewal (12 PhD candidates) in the faculty. There is support from the University for teachers aspiring to obtain the status of associate professors immediately after PhD defence and publishing 3 papers.
50% of the programme's teachers (9 people) speak English at least at the B2 level.

(2) Expert judgement/indicator analysis

All teaching staff have to comply with the qualification requirements on educational and scientific publications and internships during the tenure period. Therefore, the teaching staff meets at least minimum qualification requirements.
There is good support for publications from University.
Referring to the data provided in the SER, it can be stated that the programme under evaluation can be carried out in English language.

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

(1) Factual situation

In the SER all necessary information about academic mobility is presented: ingoing/outgoing. The number of incoming (13-18) and outcoming (44-78) lecturers can also be obtained in detail. The number of outcoming lecturers – in 2017/2018 and 2018/2019 equalled 75%; in 2019/2020 they equalled 40% (lower due to COVID). It has increased significantly since the last assessment. The number of incoming lecturers equals approx.15%.

(2) Expert judgement/indicator analysis

For achieving a sufficient number of research projects it is necessary to enhance international collaboration for academic activities, for instance by inviting foreign researchers and lecturers.

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

(1) Factual situation

The Faculty uses several instruments for improving the competence of the teaching staff.
PhD students are introduced into teaching through educational training. Research fellows are placed in external Research Centres, and there is cooperation with other Technical Universities in Lithuania.
Advanced training courses, including about the English language, are offered for all teachers.
If professors do not fulfil their publishing requirement they are relegated for one year.

(2) Expert judgement/indicator analysis

The panel rate the instruments for competence improvement of the teachers sufficient.

Recommendations for this evaluation area:

Teaching staff should be supported and facilitated to undertake more professional development in terms of industrial experiences on a regular basis.

Expanding cooperation with internally recognised teachers and industry experts will be relevant for the study direction programs.

3.6. LEARNING FACILITIES AND RESOURCES

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

The faculty has a sufficient number of classrooms for lectures, laboratory works and seminars. The classrooms for lectures are never overcrowded. Only one temporary big problem is with the allocation of the study premises in the city. The central library is open (24/7) to meet the scientific and study needs of the university community. All electronic resources, scientific journals, electronic books and databases are available for the student's remote via VPN service.
An introductory practice is carried out during the 2nd semester of studies at the BA level: Students pay weekly introductory visits to enterprises. Professional practice is carried out in the 7th semester. The duration of the professional practice is 8 weeks. Usually, students find the practice placement on their own, however the Faculty is willing to help the student with the placement in case of problems. Social partners are directly involved in this process.

(2) Expert judgement/indicator analysis

Lectures take place at 3 campuses in different parts of the city. This complicates the study process for students and teachers. The plans, reported on p. 46 of SER II and during the visit of the experts, for establishing all facilities in one place are therefore welcome from the point of view of the expert panel. During the visit the experts received the information that the campus facilities are expected to be finished by the end of 2022.
The library and reading rooms are rich in modern information sources and the faculty has a budget dedicated for purchasing books and journals.
The panel can confirm the impression that the cooperation with Social partners is strong and the active involvement in the allocation of practice placements is successful and useful to the students.

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

(1) Factual situation

Within the framework of a national project for the 'Development and Renewal of Higher Education and R&D Infrastructure in the Transport and Civil Engineering Sectors' the Faculty purchased modern software and laboratory equipment for scientific research for more than 660,000 euros (SER I p. 56). (There is a small difference between the Lithuanian and English SER versions on p 61:
In the Lithuanian version the project is specified in more detail as being a part of the National Special Complex Programme VP2-1.1-ŠMM-04-V-02-010, realisation period – 2010.10.01–2015.08.3; budget 660 000 EUR.)

Additionally, equipment was obtained through the efforts of the university staff and partial material support from social partners. Some equipment and software were bought for special commercial research projects and stay at the laboratory for student needs. The list of equipment is listed in the SER annex. The laboratories of the Transport Engineering faculty will take up to 1 900 m² which is considerably more than is currently available (±700 m²). It is planned to provide laboratories with the latest equipment. (The total estimated investment of all faculties for laboratory equipment is about 5 300 000 euros).

(2) Expert judgement/indicator analysis

From 11 Bachelor final theses attached only 4 have strength calculations using CAD software. Growth is only observed in 2020 compared with 2018-2019. In a considerable part of the attached Master theses research laboratory equipment and software was used. There was a really high level of student involvement in research, often using their own cars or employer transport and Faculty laboratory equipment for the measurements.

Recommendations for this evaluation area:

See p. 3.6.1; 3.6.2. Expert judgement

3.7. STUDY QUALITY MANAGEMENT AND PUBLICITY

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

According to the SER report, the university ensures the inner study quality by implementing a great number of formal documents.

For the preparation of the new study programmes and their improvement and upgrade the University uses the Study Programme Centre (SPC). The committee members are teaching staff, social partners and student representatives. According to the answers the faculty gave in the interview there is one SPC for the Bachelor programme and the Master programme each in the faculty. The functions of the SPC are extensive; the University mainly mentions the following tasks:

- *Carrying out constant monitoring of the content and the organisation of the study programme, the suitability and competence of the teaching staff, the adequacy and sufficiency of material and information resources,*
- *Organising surveys of students, teaching staff, graduates and employees on the issues of the study programme quality,*
- *Analysing the results of the surveys and announcing them to the departments and faculties,*
- *Identifying drawbacks of the programme and discussing improvements,*
- *Organising discussions at the university,*
- *Preparing the self-analysis of the programme for the internal and external evaluation and accreditation,*
- *Announcing the results and discussing them with the accreditation personnel and students,*
- *Organising the appropriate presentation of the study programme on the university web page (cf. 3.7.3),*
- *Considering the suitability of the planned educational resources for the study programme,*
- *Initiating the introduction of advanced teaching techniques, including distance learning and making suggestions to the teaching staff for the improvement of the study material,*
- *Submitting the documentation for external evaluation or accreditation.*

The main internal institutions that take decisions are

- *The University Study Committee, Rectorate and Senate on the university level;*
- *The Dean for the organisation and financial issues regarding the study process, including its publication on the faculty level;*
- *The head of the committee for the execution of the study programme;*
- *the SPC, the Committee of the Faculty Study Programme and the Faculty Council for their respective competences on the faculty level.*

The expert panel inquired about the quality assurance of theses. The teachers of the faculty provide feedback opportunities and individual consultation.

(2) Expert judgement/indicator analysis

The expert panel asked detailed questions about the practice of feedback mechanisms, dropout prevention strategies, continuous monitoring of students' performance and individual support for students. All questions were answered in a convincing way, which showed that the faculty are well-informed about the theory and practice of their quality assessment process and their

results. Additionally, teachers update their modules routinely and offer feedback opportunities and individual consultation, both of which is good scientific and management practice.

The faculty also mentioned areas for improvement in their report. The panel also inquired about details of those areas of improvement:

- *Cooperation with industry can be improved. The faculty states that, since there is little research and development in small companies, they have not been 'natural' partners of the university so far. The university will be trying to take the initiative to find closer collaboration with those partners.*
- *The university explained that, since the participation of students with surveys was deemed not sufficient, additional meetings between the faculty administration and students have been introduced. The faculty reports that this is helping improve students' participation. This is in some contradiction to the findings in section 3.7.4, according to which the participation in surveys is compulsory for the students.*

Generally, the answers to these issues have also convinced the experts that the quality assessment system of the faculty is already very sophisticated and that deficits which are identified are dealt with quickly and competently.

***3.7.2.** Evaluation of the effectiveness of the involvement of stakeholders (students and other stakeholders) in internal quality assurance. Evaluation of the planning and upgrading of resources needed to carry out the field studies.*

(1) Factual situation

According to the University, students, employers, graduates, teaching staff and administration representatives actively participate in the improvement of the study process.

For example, the employers of the graduate students organise introductory visits and lectures for the faculty students and teaching staff and offer traineeships. They provide recommendations for the improvement of the study programme, traineeship issues and collaborate in final theses. Some employers donate equipment and co-finance material provision of the study laboratories and other teaching equipment.

The university lays great emphasis on the fact that the teaching staff, being an internal party of stakeholders, improve the level of study quality on a day-to-day basis by updating the study courses, preparing educational literature and trying to convey the teaching material in a more interesting and understandable way. They are also involved in the preparation of the self-evaluation report.

External stakeholders appeared in the interviews in great numbers, showing great interest in participation. The alumni praise the Alumni association as very valuable. Alumni and employers

expressed general satisfaction with the quality of the university as a whole and with most parts of the programmes. Company employees are encouraged to attend the master course at VGTU to improve their scientific skills.

(2) Expert judgement/indicator analysis

Since the report and the interviews show full agreement on the relevant questions about stakeholder involvement, the expert panel do not have any critical remarks regarding this item.

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

(1) Factual situation

All information related to the implementation of the study programmes is stored using the University study information data collection and management system "Alma Informatica". The document management system, which has been operating since 2019, contains the most significant university documents.
The faculty uses the IS.VGTU system, which consists of several subsystems for the Dean, Vice Deans and academic staff; it contains all relevant information about students' achievements and organisational issues.
The aims and learning outcomes of the Programme, feedback statistics and subsequent activities are published in detail on the VGTU website (mano.vgtu.lt), as well as in the university's internal information system. In addition, the websites frequented by secondary school students, university students and other stakeholders have links to the VGTU website.

(2) Expert judgement/indicator analysis

The experts wondered why the university uses various software systems. The university replied that each system has its strengths and weaknesses and thus its specific use in the process. Since the inquiry of students and alumni did not show any contradictions on that point, the experts accept this point of view. A weakness may lie in the fact that many software products are only available in student and academic versions.

***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

According to the report of the university, special attention is paid to the students' opinion on the improvement of the studies' quality and studies' management. The students of the faculty directly participate in the study process and at the same time may observe, control and improve

that process. The representatives of the faculty's student union are the members of the Faculty Studies Committee and Faculty Council. One example quoted in the SER reports about the students suggesting a significant change of the study calendar: Since 2019, 4th-year students have been starting their internship in the beginning of the autumn semester rather than during the summer break.
Surveys are taken for each course and each semester, sometimes more than once per semester. It is mandatory to fill in the questionnaire; otherwise students are not able to move on to the online learning resources of the next semester. The results are discussed in Rectorate, Faculty's Offices, University Study Committee and at Study Programme Committee meetings.

(2) Expert judgement/indicator analysis

The expert panel found a fair number of students of the Bachelor course in the interviews, but no students of the master courses were present. Thus an important question, about the involvement of Master students in research projects, could only be put before the Bachelor students. They presumed that few Master students are involved in research projects because most of them already have jobs and cannot integrate research work into their daily schedule.
On the positive side, the students were in one mind about the quality assessment and the feedback they get from the university being as described by the faculty: well-organised with electronic technology, anonymous and published regularly. They did not seem to be much bothered by taking part in the surveys being an obligation rather than voluntary.
The opinion of the current Bachelor students supports the expert panel's impression of a well-functioning and responsive quality-assurance system. The only shortcoming was the absence of Master students during the interview session, which is ultimately reflected in the mark given for this area.

Recommendations for this evaluation area:

The university is recommended to try to take the initiative to find closer collaboration with external/industrial partners.

The participation of students in surveys should be further observed, and the University should weigh the voluntary character suited to a University against the higher participation rate achieved by making/leaving the survey compulsory for the students.

IV. EXAMPLES OF EXCELLENCE

One example of excellence is the organisation of the process of the teaching staffs' academic mobility. There are opportunities for lecturers to improve the English Languages skills, update their knowledge and professional skills and there is a transparent selection system (page 49). Candidates who take part in the mobility for first time get additional extra points in competition. And as result, the number of outgoing teachers has increased significantly.

V. RECOMMENDATIONS

1.

It is recommended to have a stronger monitoring system for student support services and student counselling, together with a response plan for those items that may not function at the desired rate.

2.

It is recommended to have a more detailed tracking system for graduates, which would also include the necessity of the learning outcomes in their jobs.

3.

It is recommended to review quality standards set for research by including quality criteria for the research output. Interdisciplinary research might help with the benchmarking during that process and is strongly recommended.

4.

It is recommended to support teaching staff in facilitating more professional development in terms of industrial experiences on a regular basis.

VI. SUMMARY

Generally, the aims and outcomes of the Transport Engineering Bachelor and Master study programmes are in conformity to the needs of the society and the labour market. They are also in conformity with the objectives and the mission of VGTU.

The recommendations of the last external evaluation related to aims, outcomes and content have been implemented. The learning outcomes have been included into course descriptions. The relationships between the outcomes of the courses and the programme have been clearly substantiated and interlinked. The distinction between Transport Engineering taught and researched in the Faculty and transport-oriented programmes in other Faculties (Environmental Engineering, Civil Engineering) is explained plausibly.

The Bachelor and Master Transport Engineering study programmes ensure consistent development of the competences of students. The bridging courses on offer are a good measure to support the students to meet the requirements of the programme and improve dropout rates.
As the dropout rate is still high in the first cycle of studies, the experts suggest an improvement of counselling services.

Since many programmes still show classic learning outcomes, it is recommended to review the learning outcomes with a view on updating them to new developments.
The Bachelor and Master degree final theses are generally of good quality. However, since there are some exceptions additional measures should be taken to ensure more uniform quality mainly of the master degree's final theses in particular.
Though the Faculty explicitly emphasises scientific research and critical thinking, that aspect does not appear prominently in the 1st study cycle. In particular, more multi-disciplinary projects should be conducted.

The in-house research conferences get students involved in presenting their thesis papers, mainly those of the 2nd study cycle. This seems to be a very effective practice and may help the numbers of students who conduct research and attend conferences rise. Attracting funding for students to engage them in research activities (internship, involvement in projects etc.) should also help.

The staff of the Faculty are active in ERASMUS programmes and visit foreign Universities on a regular basis. They also participate in EU research projects and partners are invited for guest lectures. However, even more foreign professors and researchers for courses and research works should be invited.

There is a slight drop of outgoing students during the past three years for Erasmus+ mobility, while no students applied for DAAD mobilities in 2019. This development suggests that there might be a lack of advertising for mobility among students.

For achieving a sufficient number of research projects it is necessary to enhance international collaboration for academic activities. In future the SER can be improved by including the review of quality standards set for research output.

The cooperation with social partners is good and the active involvement in the allocation of practice placements is successful and useful to the students. Industry cooperation, however, needs improvement. The university will be trying to take the initiative to find closer collaboration with industry partners.

Not all students seemed to agree that the surveys should be obligatory, as they currently are. Sometimes, just when students need to check their exam grades or to do something urgent in the system, the requirement to fill in the survey appears. Students tend to be annoyed by this, which might influence the results in a negative way.
In general, though, Students are satisfied with the feedback they get from the university. The opinion of the current Bachelor students supports the expert panel's impression of a well-functioning and responsive quality-assurance system. Additionally, teachers offer feedback opportunities and individual consultation, both of which is good scientific and management practice.
On balance, the experts are convinced that the quality assessment system of the faculty is already very sophisticated and that deficits which are identified are dealt with quickly and competently.

One problem is that lectures take place at three campuses in different parts of the city. This complicates the study process for students and teachers. The plans for establishing all facilities in one place are therefore welcome and necessary.

The Faculty fulfils the requirements for carrying out the programme in the English language. This aspect is particularly important for the expected students from China. Organising the programme for them is bound to be a challenge, and the next evaluation should direct detailed attention on that future programme.

Expert panel signatures:

1. **Prof. Dr.-Ing. Haldor E. Jochim, (team leader)**
2. **Prof., Dr.Sc.Eng. Irina Jackiva (Yatskiv),** *academic,*
3. **Assoc. Prof. Dr. Vasilij Djačkov,** *academic,*
4. **Mr Edmund Lisovski,** *representative of social partners'*
5. **Ms Irina Duma,** *students' representative*.