



CENTRE FOR QUALITY ASSESSMENT IN HIGHER EDUCATION

EVALUATION REPORT
TRANSPORT ENGINEERING STUDY FIELD
at VYTAUTAS MAGNUS UNIVERSITY

Expert panel:

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5. Ms Irina Duma, *students' representative*.

Evaluation coordinator -

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Report language – English

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Study Field Data*

Title of the study programme	Programme "Transport machinery engineering"
State code	6211EX025
Type of studies	University studies
Cycle of studies	Second
Mode of study and duration (in years)	Full-time
Credit volume	120
Qualification degree and (or) professional qualification	Master of Engineering Sciences
Language of instruction	Lithuanian, English
Minimum education required	Higher university education
Registration date of the study programme	2013-05-31

** 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 the 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 18/11/2020.

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
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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.	Methodological advice for master's theses (in Lithuanian)
2.	Programme Subject descriptions

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

General information about the significance of the study field

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

Vytautas Magnus University (VMU) was established in 1922 and re-established in 1989. The University provides degree studies of all three cycles – bachelor, master and PhD studies ranging from humanities, social sciences and arts to the fundamental sciences, environmental sciences, and biotechnologies. There are 15 academic divisions at VMU, among them the Agriculture Academy and, as a subdivision, the Faculty of Agricultural Engineering, where the master study programme of Transport Machinery Engineering is carried out. The programme is carried out in cooperation with the Faculty of Bioeconomy Development and Faculty of Informatics. The Bachelor programme of the same kind was cancelled.

Due to the history of the organisation, the profile of the study programme stills shows traits of its past focus on agricultural machinery.

II. GENERAL ASSESSMENT

Study field and **second cycle** *Transport Engineering* (state code 6211EX025) at VYTAUTAS MAGNUS UNIVERSITY 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	3
2.	Links between science (art) and study activities	3
3.	Student admission and support	2
4.	Studying, student performance and graduate employment	3
5.	Teaching staff	3
6.	Learning facilities and resources	2
7.	Study quality management and publicity	2
	Total:	18

*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

Transport Engineering specialists are sought after in transport companies, vehicle and technological equipment sales, repair shops, vehicle expertise enterprises, road construction and maintenance companies, insurance organisations, public administration, and transport departments at various companies. The SER reports the fact that trends show that since 2012, the number of entities in the transport and storage sector has been steadily increasing.

In the Self-evaluation report it is stated that the study programme in Transport Machinery Engineering is carried out and linked to transport engineering, not to agriculture. However, the laboratory equipment is not sufficient to ensure the quality of study process for the wide spectrum of transport engineering studies. The research topics, teachers expertise and the relations with stakeholders are also revealing deep relations of the study programme to agricultural and power machines applications.

(2) Expert judgement/indicator analysis

Taking into account the actual state and historical relations of the study programme to transport with agricultural and power machinery applications (research topics, learning facilities and resources, teachers expertise and relations with stakeholders) it is recommended to adjust the strategy, aims and outcomes to be in conformity with actual state and realistic development possibilities of the study programme.

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

Vytautas Magnus university (VMU) is a community-based research, art and study institution, which pursues the mission of the University of Lithuania, established in Kaunas in 1922, creates liberal learning conditions for an individual, develops partnerships, takes active part in the life of

Kaunas, advances the future of Lithuania, and contributes to the global cultural and academic development.

The aim of the study programme is to deepen the knowledge acquired in the first cycle of studies essential for the application of engineering or research activity and high technologies in the field of transport engineering, to develop thinking and special abilities essential to conduct scientific research and implement novelties in the professional activity, to independently create and develop technologies, machinery and facilities of transport engineering.

The objectives of the second cycle study programme are to provide the knowledge of physical, social, technology sciences and sciences of other fields and to gain knowledge needed for professional activities contributing to the development of world's cultural and scientific development.

(2) Expert judgement/indicator analysis

The aims and outcomes of the Transport Machinery Engineering master degree study programme are in conformity with the mission of VMU; however, the objectives of the programme are quite general without any relations to the transport engineering field.

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

(1) Factual situation

The scope and structure of the study programme meet the general requirements for the execution of studies and the requirements of the description of the study field. The study programme of Transport Machinery Engineering (master degree) has 120 study credits, with the credits allocated for achieving necessary outcomes: the field studies providing the learning outcomes established under the field description, the studies specified by the University or optional studies, and the final degree project.

(2) Expert judgement/indicator analysis

The study programme of Transport Machinery Engineering (master degree) is in compliance with applicable legal requirements of 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

In the Self-evaluation report only information about general aims and learning outcomes of the programme and links between study subjects and general learning outcomes were provided. They are in compliance with the provisions of the EUR-ACE Accreditation standard for

engineering study programmes and with the Description of Study Cycles. During the visit to VMU it was explained and the evidence provided that detailed description of the links between learning outcomes and teaching/learning and assessment methods are described in the subject curricular. Links between specific learning outcomes and courses of the study programme matrix were not provided, as they do not appear to be compulsory.

(2) Expert judgement/indicator analysis

The study programme outcomes ought to be supplemented with links between specific learning outcomes and courses of the study programme matrix, even if that is not compulsory.

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

Since master studies include obligatory research papers, at the beginning of the studies, in the first semester, the subjects "Research methodology" and „Numerical methods in engineering" are included in the study plan. There is a subject devoted to research work in each semester of the study programme.

(2) Expert judgement/indicator analysis

The structure of the study programme ensures consistent development of competences of students. However, it is difficult to understand the relations of the subjects with learning outcomes without a relation matrix provided.

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

Master students choose the preferred research area and the topic of research works and final work in the first semester. They can select alternative study subjects, which allows deepening the knowledge in the selected area in the second and third semester. The choice is usually limited by a compulsory minimum threshold of student participants. The threshold for a study subject to be executed are 6 students.

(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 Transport Machinery Engineering master degree study programme final theses are in compliance with the field and cycle requirements. Students present the results of their master theses in the conferences. However, critical literature sources review and analyses of recent advances in research is missing in the final papers. Mostly, literature review is done together with the situation analysis and most of the reviewed sources are between 10 and 15 years old. Final papers (also evaluated with high marks) have also deficiencies in text formatting and content, and non-peer review literature sources (Wikipedia) are used.

(2) Expert judgement/indicator analysis

Some final papers have deficiencies of quality (see in the factual situation section). There are some gaps in the quality management system of final papers, as can be seen in non-penalised deficits in literature sources and text formatting.

Recommendations for this evaluation area:

- 1. It is recommended to adjust the strategy, aims and outcomes to be in conformity with actual-state and realistic development possibilities of the study programme, relating the objectives of the programme to the transport engineering field.*
- 2. The study programme outcomes should be supplemented with links between specific learning outcomes and the courses in the study programme matrix.*
- 3. Attention should be paid to the quality of the final paper (content, form and representation, and the use of peer-reviewed literature sources). During the preparation of the final thesis the scientific value of the research is to be assured, recent advances in the field to be analysed.*

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

An independent comparative assessment about research is carried out every five years by foreign experts (SER p. 12). During this evaluation, the research and experimental development activities of faculty staff in the field of Transport Engineering were assessed as “good”. The expert given score in this evaluation indicates that the unit is strong with limited international

recognition and that the research carried out is of high level and recognized at national level. It should be noted that other universities received a higher score in this study field. According to the self-evaluation, 10 publications referenced in the database of Web of Science were published in the years 2017 and 2018 with a citation index, 8 articles in 2019, and on average 2 articles per year in journals without a citation index. 4 to 5 articles have been published annually in other international databases, approximately 1 per person. There are papers in journals Q1 and Q2 etc.

(2) Expert judgement/indicator analysis

Since detailed data about projects and plans for scientific activities for this programme were not presented, it seems that there isn't enough use of University resources for it and the national and international funding for research and cooperation with business. As we saw on Figure 2.1, the scientific publications of the teachers in the study field for the year 2017–2019 has a tendency to decrease.

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

(1) Factual situation

During the evaluation period, two groups of researchers carried out research directly related to the field of studies. One research area is to with the evaluation of energy and ecological performance of mobile machinery, including studies on the use of biofuels in transport, research of new combustion processes in internal combustion engines, vehicle dynamics, traction characteristics, impact of the 4x4 drive wheel kinematics on the machinery's ecological and energy indicators. The topics of the second scientific group are related to tribological processes in mechanical and mechatronic systems. Aspects of tribology are evaluated for the reliability of mechanical systems in construction, production, and operation stages. This topic is relevant as the reliability of machine kinematic pairs significantly influences the performance of the machine. The results of the scientific research are integrated into the study subjects "Vehicle dynamics", "Theory of Internal Combustion Engines", "Advanced Materials and Production Technologies", "Reliability of engineering systems" etc.).

For the dissemination of research results, the international scientific conferences "Mobile Technology" and "BALTTRIB" are organized by the institute, which allow to share the experience and good practice with scientists from other countries. Since these conferences are not very close to the area of the study programme, we suggest participating more in international conferences that do not take place at the home University.

The participation of students in research projects is not mentioned in the self-evaluation report. The interviews did not provide the experts with evidence that they participate in a significant way.

(2) Expert judgement/indicator analysis

It is not very clear how research, applied science and art activities carried out by the HEI are integrated in studies, since students who participate in projects and use ongoing research in their master theses are not mentioned in the self-evaluation report.

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

All master students prepare final works of exploratory character and publish the results in scientific or other journals and present the research findings at conferences. The Agriculture Academy organises the conference "Young Scientist" yearly.

(2) Expert judgement/indicator analysis

A small number of students engage in research activities and present their research in international research conferences. It is reflected in final theses.

Recommendations for this evaluation area:

- 1. It is recommended to increase the number of students involved in research conferences and other activities and develop the students' research skills,*
- 2. It is recommended to improve and enhance international collaboration in research and participation of staff in high-level international conferences outside Lithuania,*
- 3. It is recommended to increase the cooperation with partners from industry for strengthening applied science activities.*

3.3. STUDENT ADMISSION AND SUPPORT

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

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

(1) Factual situation

For the second cycle, the admission methodology is detailed in the Self Evaluation Report. It is suitable for both university and college bachelor degree graduates, taking into consideration their previous academic path.

(2) Expert judgement/indicator analysis

There is a noticeable decrease in the number of candidates to the second cycle admission (especially in 2019). Considering the fact that VMU is going to drop off the bachelor study field in Transport Engineering, there is considerable doubt that the number of candidates to the second cycle will remain sufficient.

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

(1) Factual situation

The procedure of recognition is in line with the national legal framework. VMU recognises non-formal and informal education acquired by voluntary work, internships and so on. In the reported timeframe, there were no requests for recognition of partial studies.

(2) Expert judgement/indicator analysis

We believe that these procedures of recognition of prior education should be more advertised among students, in order for them to benefit from such opportunities.

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

(1) Factual situation

Academic mobility for students is conducted through numerous institutional agreements within international programmes such as Erasmus+. However, the particular number of the Transport Engineering study field students is quite small compared to the total number of mobile students within VMU.

(2) Expert judgement/indicator analysis

The international mobility opportunities are not very appealing for second cycle students, who are also employed during their studies; therefore the number of Transport Engineering students within VMU is expected to remain the same or drop even more. Financial support to students going into international mobility might be a factor for convincing them to take part in this kind of opportunity.

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

Regarding the student support system, a methodology has been in place since 2016, which focuses on student retention, career orientation and individual support given to students. For the

student retention topic, the situation is analysed individually and then discussed at faculty and university level. Academic consultations are also organised by teachers for students who might need a thoroughgoing study for some subjects. In terms of career orientation, there is a dedicated centre within the university, which organises events and guides students to the suitable jobs for them.

In terms of financial support, according to the discussions conducted during the visit, the review team was informed about the fact that students were promised to have private funded scholarships but, for unknown reasons, those scholarships were eventually redirected to other study fields.

(2) Expert judgement/indicator analysis

The situation of the student support, especially the financial one, is not very clearly provided. We have noticed a slight lack of transparency in terms of promises to candidates and the factual situation provided during the visit.

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

(1) Factual situation

In terms of study content, VMU is currently going through a transition process from agricultural machines to vehicles in general (and more specifically to automobiles), therefore the description of the study field and the available equipment in the laboratories do not fully comply with the expected study content (full preparation for agricultural vehicles, while the study content would focus more on automobiles).

(2) Expert judgement/indicator analysis

Students might not be fully informed on the possibilities provided in VMU in terms of learning resources and research activities.

Recommendations for this evaluation area:

- 1. The development of advertising activities for second cycle studies is highly recommended in order to attract candidates to VMU within the Transport Engineering study field;*
- 2. Increased transparency of financial support allowance and other opportunities offered for students is recommended;*
- 3. Activities for attracting students to international mobilities opportunities should be developed in order to benefit the most from the institutional agreements the VMU has with other universities from abroad.*

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 offers full-time Master's studies. The teaching process is organized in learning sessions which take place twice a semester.

The students interviewed by the panel voiced doubts about study schedule harmonization. Similar doubts concerned the questions of the survey and the processes for improvement.

The faculty recently implemented and started using an actively virtual learning environment, "Moodle", during the COVID19 pandemic. It has enabled them to organize distance learning. However, a survey on students' and lecturers' opinions about the quality of the learning environment has not been held yet.

The Faculty claim that the teaching process is flexible with the aim of encouraging student engagement.

(2) Expert judgement/indicator analysis

The experts appreciate the efforts of the faculty to provide individual flexible learning processes, thus encouraging students to become involved. The experts assess a contradiction between the statements in the report and by the students in the interviews as to learning process fields such as study schedule, distance learning and effectiveness of solving systemic problems.

Since there were only a few active students who communicated with an expert panel the experts are cautious in their appraisal of the quality in this section. The faculty should investigate these discrepancies by increasing student engagement.

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

(1) Factual situation

Library and other infrastructure consider the needs of students with disabilities. With a valid flexible learning schedule they can be partially or completely exempted from fees. Students with disabilities can get informational support, contacts are provided at the VMU web-side. According to an advertisement from the VMU on the Internet (<https://www.vdu.lt/en/studies/why-vmu/a-disabled-friendly-university>) the VMU was awarded a certificate of Lithuanian Association of People with Disabilities in 2015, which states that infrastructure of the university is adapted and provided services are friendly to people with disabilities. During the evaluated period, there were no students with disabilities.

(2) Expert judgement/indicator analysis

The Faculty ensures access to courses for socially vulnerable groups and students with special needs in accordance with Lithuanian regulations.

VMU University holds an award for being friendly to people with disabilities. It has continuously implemented its disability-related policies and has upheld similar values for more than two decades. In 2015 it was awarded a certificate of Lithuanian Association of People with Disabilities which states that infrastructure of the university is adapted and provided services are friendly to people with disabilities.

<https://www.vdu.lt/en/studies/why-vmu/a-disabled-friendly-university/>

The experts believe that this topic has been given constant attention.

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

According to the SER report, the faculty has implemented a monitoring system of student study progress and feedback.

The Studies Department is responsible for administration, coordination, monitoring of student surveys and achievement monitoring at university level. VMU independent body, The Studies Department has agricultural academy subdivision. This structure reflects the special transitional structure the Agricultural Academy is undergoing in the process of integration into the VMU.

The Faculty is responsible for planning, organizing and conducting the monitoring of students' registration and achievements. Neither from the SER report nor from the interviews has it become fully transparent how the two bodies of the Academy and the Faculty cooperate.

The students interviewed by the panel voiced doubts on the implementation of changes owing to survey results.

The percentage of students who terminated or suspended their studies is not high. According to the SER, 17,2% of students terminated or suspended their studies (went on academic leave). Of these, 6,9% students terminated their studies while 10,3% students went on academic leave. The main reasons for the termination or suspension of studies are roughly summarized in the report. The SER report does not consider proposals for reducing the reasons of studies being suspended.

(2) Expert judgement/indicator analysis

The report mentions two institutions involved in monitoring of student study progress and feedback to students. The report did not clarify the cooperation and responsibilities of these two bodies in a sufficient way. The expert panel did not succeed in clarifying those issues during the interviews. Furthermore, students interviewed by the panel voiced doubts about the implementation of measures owing to survey results.

In the interview the senior management stated that the percentage of students, terminated or suspended their studies, was small and the faculty do not focus on this. They monitor the students continuously in events on various levels and by personal contacts. Given that almost all the outgoing students were state-funded the expert panel recommends to investigate the cases precisely and to draw up a preventive action plan.

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

The report has data only about the monitoring of students' achievements before and after examination sessions and in connection with teaching quality. Monitoring is focused only at students with negative evaluation and who are under-achievement of more than 30%. This data is used for the improvement of the study process and to provide the required support for students. A decision-making hierarchy is provided,

Not all students are evaluated, but only those who are under-achievers. The aim of the assessment system is to help the students who lag behind to close possible learning gaps.

The report does not provide data about assessment of intermediate and advanced students.

In the interview the SER staff stated that evaluation data are collected about all students, but the correlation with the study progress did not become clear for the expert panel.

(2) Expert judgement/indicator analysis

The experts appreciate the efforts of the faculty in support for students with negative evaluations. Since the report does not provide data about Evaluation of the feedback provided to students in the course of the studies to promote self-assessment and subsequent planning of study progress, the expert panel recommend the SER staff to check this topic and prepare a comprehensive evaluation.

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

(1) Factual situation

The evaluation of graduates' employability consists of a questionnaire given to graduates of one year after graduation, which needs to be filled in regarding their career path. VMU tracks three main areas in the field of Transport Engineering.

The employability rate among second study cycle graduates is quite high during the past three years (80 to 100%). Also, most master's students already have a job in the field of transport engineering once they graduate from their first cycle studies.

(2) Expert judgement/indicator analysis

During the remote visit, there was no conclusive answer as to whether university representatives have drawn any conclusions based on graduates' survey results or not.

Moreover, it is not clearly specified how many students have a job position that requires the Transport Engineering second cycle learning outcomes and how many students work in each area considered by VMU.

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

(1) Factual situation

The policies for academic integrity, tolerance and non-discrimination are detailed in internal documents at university level - VMU Statute, the Code of Ethics and Study Regulations. In order to prevent plagiarism, final theses are verified through a similarity software and the similarity report is attached in the annexes of the final paper. A maximum percent for similarity (20%) is specified and allowed in order to publicly defend the final papers.

(2) Expert judgement/indicator analysis

There is no information provided on prevention mechanisms other than the checking of plagiarism which only happens by the termination of studies, while there should also be a tracking system on the effectiveness of these mechanisms.

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

There is a dedicated procedure for submitting appeals and complaints in case of possible disagreements between students and teachers regarding the student performance assessment. However, no complaints were registered in the reported period of time.

(2) Expert judgement/indicator analysis

N/A.

Recommendations for this evaluation area:

1. Check whether all students are really involved in the monitoring of student study progress in a sufficient way. Attention has to be paid to intermediate and advanced students. It is important that all students would be involved in the feedback process.

2. *Prevention mechanisms for ethics and academic integrity 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, together with specific notions for research ethics).*

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 needed information about permanent teaching staff and their compliance with the legal requirements was presented. The study programme of Transport Machinery Engineering employs 6 professors, 4 associate professors and 3 lecturers with a doctoral degree. All of them are permanent teachers and the VMU is the main workplace. During the assessment period the number of professors and associate professors decreased, but the number of students also decreased, so the ratio number of teaching staff/number of students didn't change (about 0.54).

All teachers participating in the study program also teach in other study programmes, so their workload in the Transport machinery engineering (TME) study programme makes only a part of their total pedagogical workload and 70% of university workload is allocated for the pedagogical and methodological work, whereas the rest 30% is allocated to the scientific work.

Main research interests of them lie in the frame of the programme and there are papers in journals Q1 and Q2 etc.

The proportion of teachers in the study programme who speak English at B2 and above level represents ~70% of all teachers working in the study programme.

Information about lecturers-practitioners and the dynamics of teaching staff is not included in the SER.

(2) Expert judgement/indicator analysis

The strategy of teaching staff development and their involvement in the process of research and professional development in terms of industrial experiences on a regular basis is not obvious. That may be due to the transition period of the program. During the site visit the experts did not receive a sufficient answer to their question about how they attract staff from industry.

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

Concrete numbers of outgoing and incoming teaching staff are not provided. In the SER only total numbers regarding the University as a whole are included. In the interview the programme staff told the experts that there were 'two or three' lecturers taking part in Erasmus+ programmes.

During the site visit experts also asked students about visiting researchers and lecturers, without being given a sufficient answer.

(2) Expert judgement/indicator analysis

Processes of academic mobility should be improved and more visible on programme level.

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

(1) Factual situation

At VMU, teacher professional development is organised under different groups of competences: didactics, digital, research, management, foreign language, intercultural, subject-related and personal competences and regulated by legal university procedures.

But in the SER concrete information about teachers from this programme and how often they improved their competences in these areas is not provided. In the interview two lecturers from the programme staff told the experts that they participated in such training.

(2) Expert judgement/indicator analysis

The improvement of teachers' competences should be organised according to the procedures more explicitly.

Recommendations for this evaluation area:

- 1. It is recommended to support and facilitate teaching staff to undertake more professional development in terms of industrial experiences on a regular basis;*
- 2. It is recommended to consider different ways to rejuvenate staff and attract staff from industry;*
- 3. It is recommended to pay more attention on planning of staff composition and turnover, including involvement of female academic staff;*
- 4. It is recommended to improve international collaboration including participation in mobility programs.*

According to the experts, the English language skills of the teaching staff are not sufficient, possibly a reason why the exchange mobility of staff is low. It is necessary to encourage teachers' staff to participate in mobility 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 self-evaluation report states that the faculty has a sufficient number of classrooms for lectures, laboratory works and seminars. The classrooms for lectures are never overwhelmed with the current number of students. All electronic resources, scientific journals, electronic books, and databases are available for the students via a remote VPN service. There is also the possibility to use electronic textbooks from the VGTU library.

Laboratory equipment:

The experts assess a contradiction between the statements in the report and the real situation. During an interview with SER staff and teachers the expert panel inquired how it might be possible to teach vehicle safety and road traffic accidents reconstruction without laboratory equipment and without software. The experts did not get sufficient answers to this question. The expert panel could not find any data on laboratory equipment dedicated for hybrid transmissions in the report and the data provided additionally. During the interview with the teachers the panel got information that there was transmission for a Toyota Prius vehicle. In many cases the faculty use equipment from UAB "Autotoja", an external partner, for this subject's laboratory activities.

During the interview with students they stated that most laboratory work was based on tractors and agricultural machines and that there was no other vehicle equipment. They stated that they had been surprised noticing the focus on agricultural machines, rather than on general transport engineering, when they started their courses.

During the interview with the teachers' representatives the expert panel perceived according messages. Teachers said that they would like to have more equipment for the transport engineering study field, such as vehicle diagnostics equipment, renewal of equipment (which are already quite old), especially regarding hybrid and electric vehicles. The agricultural equipment is the most up-to-date, since most partners are from this study field.

Computer programs are also used in the teaching process of the study programme.

The report listed many programs. Most of them are suitable for engineering and calculation works at Bachelors' stage.

The expert panel did not find special software usually used in the Master thesis preparation process.

From the 7 Master theses the expert panel were shown only one had simulation data using "PTV Vissim" software. Others had analytical parts or a blend of analytical parts and real experiment data. "PTV Vissim" software is not on the list of Faculty computer programs.

During the interview with the teachers' representatives the expert panel found that the faculty had bought "ANSYS" software for special projects, but teaching staff do not have sufficient skills yet to help students apply it.

(2) Expert judgement/indicator analysis

The experts assess a contradiction between the statements in the report and the information from the interviews. Most of the contradictions refer to laboratory equipment and computer programs.

The aims of the study field and its content correlate with automotive transport. However, the laboratory equipment is still focused on agricultural machines while there is no equipment correlated with vehicle safety or hybrid transmissions.

Laboratory activities use equipment of external partners, such as UAB "Autotoja", for maintenance and repair works. If the faculty is serious about research it is recommended that they purchase equipment or think about a cooperation agreement with KTU laboratories.

The SER report named Computer programs the faculty has acquired, but the expert panel could not find which software versions and packages the students have at their disposal. The licences belong to the Faculty, and according to the interviews students can use them remotely, but it remained unclear to what extent.

The panel also found that topics of Master thesis are limited to the available laboratory equipment. The theses' content is dominated by performing physical tests, rather than using simulations or analytic engineering software.

Because of the lack of breadth in the topics of the theses the experts cannot give a positive statement in favour of the learning resources. The faculty should complement its strategic development by further development of its learning resources, especially with the aim of improving the correlation between study content and laboratory equipment.

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

(1) Factual situation

In the report any data about the Faculty special plan for upgrading of resources needed to carry out the field studies. The SER states that the VMU maintains and upgrades hardware and software continuously, a plan of the renewal of information technology for the library is also mentioned.

However, the expert panel does not find information about the Faculty budget dedicated for research, upgrading of laboratory equipment and an increasing range of computer programs.

(2) Expert judgement/indicator analysis

Though the Faculty mentions as one area of improvement the “Enhancement of the financial capacity for the maintenance and renewal of laboratory equipment”. But there is no further information about what steps the faculty is planning. The SER staff were interviewed about commercial scientific works or other governmental research support that could bring financial support.

The Faculty members replied that the Faculty has a very small research turnover with business and there are only a few ongoing governmental supported projects. To improve matters the faculty has implemented a special organisation involved in tenders and advertising the Faculty’s services to business.

The Faculty management mentioned some ideas for improving the general transport sector, but the improvement would be suitable for all fields. They have established a study cluster for the Mechanical Engineering study field and are planning to establish such a cluster for the Transport Engineering study field, too.

Because of the lacking breadth of topics in the theses the experts cannot give a positive statement in favour of the situation of the learning resources. The faculty should develop a financial strategy to complement its strategic development of its learning resources, especially the correlation between study content and laboratory equipment.

Recommendations for this evaluation area:

- 1. It is recommended to check the correlation between study field aims, content and laboratory equipment. The laboratory equipment is still focused on agricultural machines and lacks equipment correlated with vehicle safety or hybrid transmissions.*
- 2. It is recommended to improve the quality of future self-evaluation reports in the field of learning facilities and resources. From our point of view the report can be used in a useful way, also as an internal document for creating strategies for the faculty.*
- 3. It is recommended to check the financial budget of research, upgrading laboratory and software equipment in a sufficient way and clarify it if necessary.*

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

The university mentions the following people and committees in charge of the various tasks of quality assurance: Chancellor of the Academy, Academy Council, Faculty Council, Dean of the Faculty, Director of the Institute and the Study Programme Committee (SPC).

This structure reflects the special transitional structure the Agricultural Academy is undergoing in the process of integration into the VMU. From the report it is not entirely obvious whether the Faculty and the Academy are organised in a parallel way or which tasks have been passed on from the Academy to the Faculty.

According to the report, the Council (Faculty Council it is assumed) is responsible for the quality assurance of the study field. It discusses the issues of the study field and makes decisions on the improvement of the field on an annual basis. For example, the Council approves renewals, results of internal assessments and quality improvement plans of programmes.

The SPC includes teachers, students, alumni, employers and other competent people on request. It reviews, assesses and updates the study programme on an annual basis. The SPC also supervises the implementation of the programme, organises its evaluation and renewal, and assesses the module descriptions. It considers the proposals of teachers, students, employers and other social partners to improve the quality of the study programme and recommends their implementation. The SPC makes decisions by common agreement, and they are documented as meeting minutes.

The SER report states that the results of the analysis and proposals for improvement are presented to the Faculty Council for approval.

The panel inquired the senior management about strategies against dropouts. They replied that they monitor the students continuously in events on various levels and by personal contacts.

(2) Expert judgement/indicator analysis

The report mentions a number of institutions in charge of parts of the quality assurance process. It mentions institutions that are common in other universities and those that are unusual, namely the institutions of the Academy. This structure appears to be a result of the transitional process into the Vytautas Magnus University. From an external point of view, there seem to be parallel structures. Those structures might make the quality assessment process and particularly the decision-taking in the process difficult. The report did not clarify the decision-taking process in a sufficient way, for instance keeping open the task-sharing between Councils, Chancellor and Dean. The expert panel did not succeed in clarifying those issues during the interviews.

The explanation of the monitoring of students by the management seems credible but cannot be assessed objectively.

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

Students are reported to give their assessments of studies through the student representative in the SPC, via student surveys and in direct discussions with teachers. The survey of teaching and learning evaluation of the study courses is conducted at the end of each semester. This aspect is referred to in more detail in section 3.7.4.

Graduates are surveyed about the programme, final theses, and the preparation for the labour market at the end of their courses. On inquiry by the panel the senior management stated that there is an alumni club for graduates enabling the graduates to take influence on the Study Committee.

According to the report, employers are surveyed about the work quality and adaptation process of alumni and interns. Career Days at the University and informal discussions are mentioned as further opportunities for obtaining their opinions and suggestions about the improvement of the study programme. According to the report, social partners are also invited to the SPC, and teachers are invited to present their comments and suggestions in the Faculty committees. Additionally, the university has also started conducting anonymous surveys with teachers.

Employers and graduates were interviewed about their practical experiences with collaboration with the faculty. The employers confirmed that they were being asked for advice by the faculty and for involvement in the evaluation committee, due to the wish for recruitment of qualified staff. The alumni emphasised the perspectives the university gave them with regard to finding good jobs at renowned companies. Some stakeholders have established scholarships for students.

(2) Expert judgement/indicator analysis

Since there were only very few employers present at the panel interview the experts are cautious in their appraisal of the quality in this section. The alumni, who were in the majority at the meeting, represent the successful part of the students and emphasised the positive experience with the university. Given that there are discrepancies between the statements of alumni and current students (cf. section 3.7.4), the experts cannot give an unqualified statement in favour of the quality processes. The faculty should complement its strategic development by further development of its processes.

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

(1) Factual situation

According to the university, the Head of the SPC transmits the information from the surveys to the teachers, social partners and other stakeholders. Teachers have access to the results of the

surveys in relation to the subjects they teach. The Student representative in the SPC publishes the decisions to other students of the study programme.

Three months after each survey a summary of the results of the feedback data analysis is presented to social stakeholders. The results are published on the VMU website, e-mailed to students and teachers, stored in Outlook folders, delivered in social media, and shared by other channels. On inquiry by the panel the teachers confirmed that stakeholders can access the results on the Internet.

(2) Expert judgement/indicator analysis

The experts appreciate the efforts of the faculty in distributing the results of their quality assessment procedures among the public affected. The circumstantial evidence of these efforts being successful is deemed sufficient. On the other hand, there is not sufficient evidence that responsibility for decisions and actions is sufficiently and unambiguously assigned within the faculty.

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

(1) Factual situation

The University reports about the results of the most recent „EXIT 2019“ survey among graduates. Several items were evaluated in scales of 1 to 4: the conformity of the content of the programme to its purpose (3.70); seminars, laboratory works and other study classes were in line with students' expectations (3.18); overall quality of the study programme (3.88); would recommend the study program to others (3.73). Students also appreciate the contribution of the VMU to their preparation for the labour market, with the result: poorly = 10%, satisfactory = 50%, good = 40%.

The University also reports that, according to the teaching and study survey, students are positive about the professional ethics of the teachers of the programme, the access of study material in MOODLE, the application of various study methods and the organization of studies. However, quantitative results were not given in the report about those survey outcomes.

The students interviewed by the panel had diverse views about their participation. Whereas some students emphasise their individual responsibilities and appreciated the chances the university has given them, others were more critical and voiced doubts about the impact of their participation on the quality of the Study Programme. The doubts concerned the questions of the survey and the processes for improvement.

(2) Expert judgement/indicator analysis

The experts assess a contradiction between the statements in the report and by the students. Whereas the surveys appear to show good results as to the quality of the programme the students show some doubts and report little participation in the surveys.

The experts cannot rule out that the surveys of the university was mainly used by those students and graduates who were satisfied with their individual achievements and the quality of the university. Since the university did not provide quantitative figures about the participation of students in the survey and day-to-day processes, the concerns of the experts could not be solved and must be upheld. The panel express the necessity for the faculty to check whether the students are really involved in the quality improvement processes in a sufficient way.

Recommendations for this evaluation area:

- 1. It is recommended to check whether the students are really involved in the quality improvement processes in a sufficient way. It is important that the students who are not satisfied also take part.*
- 2. It is recommended to improve the detailed quantitative analysis of the survey results.*
- 3. It is recommended to check whether the decision-taking process within the academy and the faculty as well as between them is defined in a sufficient way and clarify it if necessary.*

IV. RECOMMENDATIONS

1.

It is recommended to adjust the strategy, aims and outcomes and laboratory equipment to be in conformity with the desired and realistic development of the study programme.

2.

It is recommended that the Faculty analyse the decision-taking process within the academy and the faculty as well as between both organisations (academy and faculty).

3.

It is recommended that the Faculty increase advertising activities for the second cycle studies, in order to attract students from other fields and/or higher education institutions.

4.

It is recommended to increase the transparency of financial support allowance and other opportunities for students.

5.

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

6.

It is necessary to develop a concrete plan for scientific activities in the field related to the study programme with financial viability, incl. special actions for internationalisation.

7.

It is recommended to develop a human resource development plan including:

- *staff composition and turnover, involvement of female academic staff;*
- *support for teaching staff to undertake more professional development in terms of industrial experiences;*
- *different ways to rejuvenate staff and attract staff from industry etc.*

VI. SUMMARY

The Faculty has been in a transitional process since its integration into Vytautas Magnus University. Transitional and parallel structures might make the quality assessment process and particularly decision-taking difficult. One example is the task-sharing between Councils, Chancellor and Dean. The transition process is reflected in many of the problems of the study programme.

The general structure of the study programme ensures consistent development of competences of students. However, it is recommended to adjust the strategy, aims and outcomes to be in conformity with the realistic development possibilities of the study programme. The historical relations of the study programme to agricultural and power machinery technology is valuable but contradicts the ambitions of the University to offer a broader programme. The objectives of the programme, which are quite general without any relations to the transport engineering field, should be adapted accordingly. The study programme's outcomes ought to be supplemented with links between the courses of the study programme matrix and the specific learning outcomes.

Considering the fact that the VMU is going to drop the bachelor study field in Transport Engineering, there is considerable doubt that the number of candidates for the second cycle will remain sufficient. The experts appreciate the recognition of alternative prior education for admission to the programme.

A small number of students engage in research activities and present their research in international research conferences. However, there should be more of them. The number of scientific publications of the teachers in the study field should be upheld.

The international mobility opportunities do not seem to be very appealing for second cycle students, who are also employed during their studies. Financial support to students going into international mobility might be a factor for convincing them to take part in this kind of opportunity.

The experts appreciate the efforts of the faculty to provide individual and flexible learning processes, thus encouraging students to become involved in the process of academic learning.

The experts appreciate the efforts of the faculty in support of students with negative evaluations but recommend checking this topic and preparing a comprehensive evaluation.

Though the Faculty monitors the students continuously in events on various levels and by personal contacts, state-funded students drop out of the programme. The expert panel recommends to investigate the cases precisely and to draw up a preventive action plan.

The strategy of teaching staff development and their involvement in the process of research and professional development in terms of industrial experiences on a regular basis is not obvious, which may be due to the transition period of the programme.

Since the number of research projects should be higher it is recommended to establish more international collaboration, to invite foreign researchers and lecturers and to create an environment that is attractive for young researchers and lecturers, and to improve English language skills. The improvement of teachers' competences stipulated in the procedural rules should be organised more explicitly.

The panel also found that topics of Master theses are limited to the available laboratory equipment. The content of the theses is dominated by performing physical tests in the existing laboratories, rather than using simulations or analytic engineering software, and some final papers have deficiencies in quality. The experts recommend improving the quality management system of final papers and complementing its strategic development by further development of its learning resources, especially with the aim of improving the correlation between the study content, which is broad, and the laboratory equipment, which is highly specialised. The faculty should develop a financial strategy to complement its strategic development of its learning resources.

The alumni interviewed by the experts were mainly successful former students emphasising the positive experience with the university. The surveys also show good results as to the quality of the programme. However, the students currently enrolled who were interviewed by the experts showed doubts about the measures triggered by the quality processes and reported little participation in the surveys. Since the university did not provide quantitative figures about the participation of students in the survey and day-to-day processes, the experts express the necessity for the faculty to check whether the students are really involved in the quality improvement processes in a sufficient way.

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*.