CENTRE FOR QUALITY ASSESSMENT IN HIGHER EDUCATION

EVALUATION REPORT

STUDY FIELD of SAFETY ENGINEERING

at Vilnius Gediminas Technical University

Expert panel:

1. **Prof. dr. Paul Swuste (panel chairperson),** *academic;*
2. **Prof. dr. Georgios Boustras,** *academic;*
3. **Mr Vygandas Kurkulis,** *representative of social partners;*
4. **Mr Aidas Čurovas ,** *students' representative.*

Evaluation coordinator – *Ms Miglė Palujanskaitė*

Report language – English

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Study Field Data

Title of the study programme	***Fire Protection***	***Safety Engineering***
State code	6121EX032	6211EX031
Type of studies	University studies	University studies
Cycle of studies	First	Second
Mode of study and duration (in years)	Full-time studies, 4 years	Full-time studies, 1,5 years
Credit volume	240	90
Qualification degree and (or) professional qualification	Bachelor degree in engineering	Master degree in engineering
Language of instruction	Lithuanian	Lithuanian
Minimum education required	Secondary education	Higher education
Registration date of the study programme	19 May 1997	04 June 2003

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I. INTRODUCTION

1.1. BACKGROUND OF THE EVALUATION PROCESS

The evaluations of study fields in Lithuanian Higher Education Institutions (HEIs) are based on the Procedure for the External Evaluation and Accreditation of Studies, Evaluation Areas and Indicators, approved by the Minister of Education, Science and Sport on 17 July 2019, Order No. V-835, and are carried out according to the procedure outlined in the Methodology of External Evaluation of Study Fields approved by the Director of the Centre for Quality Assessment in Higher Education (hereafter – SKVC) on 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 (SER) prepared by HEI; 2) site visit of the expert panel to the HEI; 3) production of the external evaluation report (EER) by the expert panel and its publication; 4) follow-up activities.*

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

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

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

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

1.2. EXPERT PANEL

The expert panel was assigned according to the Experts Selection Procedure as approved by the Director of SKVC on 31 December 2019, Order No. V-149. The site visit to the HEI was conducted by the expert panel on *8 November 2022.*

Prof. dr. Paul Swuste (panel chairperson), *academic (the Netherlands); Associate professor in the Safety Science section of Delft University of Technology (Technische Universiteit Delft);*
Prof. dr. Georgios Boustras, *academic (Cyprus); Professor in Risk Assessment at European University Cyprus;*
Mr Vygandas Kurkulis, *representative of social partners (Lithuania); Member of Board at Nacional Fire Officers Union, Lector at Utena University of Applied Sciences, President of Fire Safety Works and Services Association;*
Mr Aidas Čurovas, *student's representative (Lithuania); second-year Bachelor's student of Ship Design and Construction study programme at Klaipėda University.*

1.3. GENERAL INFORMATION

The documentation submitted by the HEI follows the outline recommended by SKVC. Along with the SER 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.	Vilnius Tech Strategy
2.	Vilnius Tech Planning, Execution and Reporting of Research Activities Description of the Procedure

1.4. EVALUATION REPORT STUDY FIELD OF SAFETY ENGINEERING AT VILNIUS GEDIMINAS TECHNICAL UNIVERSITY

Vilnius Gediminas Technical University (hereinafter – VILNIUS TECH) is a state-owned higher education institution. The university is a public legal entity operating as a public institution. The structure of the university is approved and changed by the University Council based on the proposals of the rector. The university consists of 10 faculties, many departments, scientific and study laboratories, scientific and academic institutes as well as centres, a library, a publishing house, administration and other subdivisions. The university offers studies in 25 fields of study.

2 VILNIUS TECH programmes are implemented in the field of safety engineering: 1 bachelor's and 1 master's programme. The Bachelor's study programme of Fire Protection has been implemented since 1992 and the Master's study programme of Safety Engineering has been implemented since 2003. VILNIUS TECH is the only higher education institution in Lithuania which trains qualified fire safety specialists.

The previous external evaluation of the Fire Protection and Safety Engineering study programmes was held in 2016. Both programmes were accredited for 6 years.

II. GENERAL ASSESSMENT

Safety Engineering study field and *first cycle* at Vilnius Gediminas Technical 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.	Intended and achieved learning outcomes and curriculum	2
2.	Links between science (art) and studies	2
3.	Student admission and support	2
4.	Teaching and learning, student performance and graduate employment	3
5.	Teaching staff	3
6.	Learning facilities and resources	3
7.	Study quality management and public information	2
	Total:	17

*1 (unsatisfactory) - the area does not meet the minimum requirements, there are fundamental shortcomings that prevent the implementation of the field studies.
2 (satisfactory) - the area meets the minimum requirements, and there are fundamental shortcomings that need to be eliminated.
3 (good) - the area is being developed systematically, without any fundamental shortcomings.
4 (very good) - the area is evaluated very well in the national context and internationally, without any shortcomings;
5 (excellent) - the area is evaluated exceptionally well in the national context and internationally.

Safety Engineering study field and *second cycle* at Vilnius Gediminas Technical 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.	Intended and achieved learning outcomes and curriculum	2
2.	Links between science (art) and studies	2
3.	Student admission and support	2
4.	Teaching and learning, student performance and graduate employment	3
5.	Teaching staff	3
6.	Learning facilities and resources	3
7.	Study quality management and public information	2
	Total:	17

*1 (unsatisfactory) - the area does not meet the minimum requirements, there are fundamental shortcomings that prevent the implementation of the field studies.
2 (satisfactory) - the area meets the minimum requirements, and there are fundamental shortcomings that need to be eliminated.
3 (good) - the area is being developed systematically, without any fundamental shortcomings.
4 (very good) - the area is evaluated very well in the national context and internationally, without any shortcomings;
5 (excellent) - the area is evaluated exceptionally well in the national context and internationally.

III. STUDY FIELD ANALYSIS

3.1. INTENDED AND ACHIEVED LEARNING OUTCOMES AND CURRICULUM

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

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

According to the Self-Evaluation Report, VILNIUS TECH aims to train qualified, creative and socially active professionals, capable of successfully entering the Lithuanian as well as foreign labour and research markets.

The programs under evaluation are addressing a real societal need: safety and security. In this respect there is a clear societal aspect as well as a clear practical aspect in these programs. The societal part is obvious whereas the practical aspect is satisfied by the association of the programs with the Lithuanian Fire Service and the exposure of students to real life situations.

The learning outcomes for the Fire Protection and Safety Engineering studies are described in detail in the same document. For Fire Protection it starts with the basics of natural and social sciences, humanities, and continues both with the knowledge and understanding of engineering problems and fires and to apply this knowledge in the design of projects. Working effectively in teams and communicating with the engineering community and the general public are the final learning outcomes.

Like in Fire Protection, also in Safety Engineering study program learning outcomes address knowledge of Safety Engineering problems, and apply this knowledge to solve these problems. Different from Fire Protection there is an emphasis to solve unprecedented problems. This is a uniquely academic focus to educate students in addressing new problems by applying knowledge and skills to situations, not previously encountered before, where problem solving, instead of rule following, is the core of the educational programme.

Input for the needs of society and/or labour market is provided in the Self-Evaluation Report by employers, who value the fact that apart from an academic and theoretical knowledge of the field of Fire Protection, graduates also have good practical skills and competences. Also graduates from both Fire Protection and Safety Engineering study programs have excellent job

opportunities. Not only employers share this opinion, as can be read in this document, also according to graduates from the two study programs, the preparedness for the labour market is excellent. Based on the results of the visit, the feedback the Committee received was that students that are recruited at the early stages of their University tuition are not likely to return.

Although the intentions of the program are to satisfy the above needs, the Committee based on the evidence provided as well as the outcome of the study visit, suggest that the programs need further strengthening and in some aspects a redesign.

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

Assuming the strategy of HEI is similar to VILNIUS TECH, in the Self-Evaluation Report it shows a new set of goals was adopted. In 2021, to improve the quality of studies and research. More specifically, the university tries to develop civic responsibility, creative, competitive personality, receptive to science and the latest technologies and cultural values, to promote scientific progress, social and economic well-being. This goal introduced training sessions, and the introduction of experts carrying out scientific research in the area of sustainable construction. The Rectorate during the meetings with the Expert Panel did not provide information supporting the above, neither a presentation. Although it is clear that VILNIUS TECH is on a trajectory of growth and international recognition, neither the position of the department hosting the programs within the University, nor the programs structure, nor the results of the visit suggest that the program fits with the overall strategy of the institution. Again it should be stressed that a comprehensive presentation from the Rectorate, describing the strategy of the University for these programs was not conducted. The Expert Panel has experience from both being evaluators, as well as evaluated and believe that no effort was made to present that, neither any strategies were presented.

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

The Self-Evaluation Report contains a list of nine laws, decrees, orders of the Ministry of Education and resolutions of the university senate. Both study programs, Fire Protection and Safety Engineering, are complying with legal requirements as is shown in tables 1 and 2 of Self-Evaluation Report. No information was provided during the meeting that supports the above, in the form of a presentation.

Table No. 1 Study programme's Fire protection compliance to general requirements for *first cycle study programmes (bachelor)*

Criteria	General* legal requirements	In the Programmes
Scope of the programme in ECTS	180, 210 or 240 ECTS	240 ECTS
ECTS for the study field	No less than 120 ECTS	177 ECTS
ECTS for studies specified by University or optional studies	No more than 120 ECTS	63 ECTS
ECTS for internship	No less than 15 ECTS	15 ECTS
ECTS for final thesis (project)	No less than 15 ECTS	15 ECTS
Contact hours	No less than 20 % of learning	38%
Individual learning	No less than 30 % of learning	62%

Table No. 2 Study programme's Safety engineering compliance to general requirements for *second cycle study programmes (master)*

Criteria	General* legal requirements	In the Programmes
Scope of the programme in ECTS	90 or 120 ECTS	90 ECTS
ECTS for the study field	No less than 60 ECTS	90 ECTS
ECTS for studies specified by University or optional studies	No more than 30 ECTS	0 ECTS
ECTS for final thesis (project)	No less than 30 ECTS	30 ECTS
Contact hours	No less than 10 % of learning	17%

Individual learning	No less than 50 % of learning	83%

In Fire Safety first cycle studies, at least 62% of the total study time is devoted to students' independent work, while in second-cycle studies in Safety Engineering, independent work accounts for at least 83% of the total study time. It fully meets the requirements by the Ministry of Education.

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

According to the Self-Evaluation Report, the results of the study programmes are based upon the European handbook of the European Union.

Annex 3 and Annex 4 provide a mapping of competences and learning outcomes for the two programmes under evaluation. It should be noted that syllabi were not provided in the SER but relevant information is available at the University website. In the recommendation section of this report, the Committee provides their opinion on certain modules that have to be added.

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

The Fire Protection and Safety Engineering study programmes are designed in a specific sequence with compulsory and optional course units. Course prerequisites are clearly mentioned in the course guide and a clear study path is available.

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

As discussed previously and according to the study path of the programmes, students pick optional courses. These courses provide a personalised path for the students. During the On-site visit of the Committee, it became apparent that students feedback should be taken seriously on-board and relevant results should be part of the Periodic Assessment of the Course.

As the groups are not big and there are students who start to work from second year and not often can participate in lectures, in some cases individual plans are made. In cases when only 5 students are left in the academic group, each student is allowed to study based on an individual plan after receiving an agreement from the rector.

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

The final thesis of the programmes is a student's independent project work, either research or an applied topic and is defended by the student before the examination commission. The topic of the thesis is approved by the Dean of the faculty, and the thesis is coached by the teaching staff. Students may have a preference in appointing a final thesis supervisor. According to the titles provided, the examined theses seem to comply with the overall theme of the field and cycle. Theses in English were not available, nor abstracts in English. In relation to other indicators (e. g. internationalisation) it is advisable that an English abstract is included in the body of the text. Definition, approval, supervision and examination of the theses are according to high standards. Impartiality and independence of the process is guaranteed. It was not clear whether theses are also set from social partners.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. There is a clear relevance of the topic (fire prevention) as students are receiving interest for work recruitment in the early stages of their university tuition.

(2) Weaknesses:

1. It was not evident whether students that are recruited full time at a workplace, finish their degree.
2. A process of redesigning the curriculum of both programs should be initiated. Certain modules are missing from the programme curriculum of both cycles:
    a. Loss prevention and process safety (including HAZOP and HAZAN, SIL etc).
    b. Fire codes – with a focus on national (Lithuanian), international (NFPA, BS) fire codes and international standards (eurocodes).
    c. as part of the "tactics of fire and rescue I or II" an introduction to the European Civil Protection Mechanism should be included.
    d. A module that will promote integration of professional practise and standards will have to be included.

3.2. LINKS BETWEEN SCIENCE (ART) AND STUDIES

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

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

According to the Self-Evaluation Report, the main research direction of the research units of the Safety Engineering field is Sustainable construction. Research is hereby one of the inputs of the curriculum, and theses not only addresses scientifically interesting topics, but also topics relevant for business. In 2019 a faculty research plan aimed to increase the scientific output in relevant journals with a relatively high citation rate (> 1); the Committee asked to have access to this document, but it was not provided. As in other parts of the report, it should be noted that integration of English (at least as part of) studies will be beneficial. The Committee notes our respect to Lithuanian language and culture. A fundamental issue that emerges for the programmes under evaluation is the lack of belonging within the University structure. Teaching staff at the programs – mainly – come from different departments (e. g. electrical engineering, mechanical etc). On one hand, this is interesting as it brings a variety of engineering schools of thought, on the other hand, it does not provide students with a uniform "culture" and a direct relationship with the study area. As external funded research (based on the information reported) is limited, relationships with the local industry were not evident.

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

Students are stimulated and trained to use, comprehend, and apply the latest research findings for their projects and own research. Lecturers, coaching these students, will participate in conferences and publish their research findings in relevant scientific journals. From the overview of the publications provided in Annex 5, it was not evident whether Faculty participate in International Conferences.

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

The Self-Evaluation Report states that students are involved in research activities during the modules they attend and the final theses they work on, also in their report presentations at

conferences. One specific conference for young scientists 'Science – the future of Lithuania' is organised by the university where students can present their research results. The Committee did not find evidence of the above argument, during the visit. Relevant statistics were not evident.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. N/A

(2) Weaknesses:

1. Lack of participation in Conferences (National and International) from both Faculty and students.
2. Language limitation should not be an obstacle for internationalising research and teaching output.
3. Limited collaboration (either through Erasmus or bilaterally) with institutions offering similar programs.

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

The admission of students to the field study programmes is described in detail in the Self-Evaluation Report. Admission requirements are clear. The requirements and procedures are approved by the Ministry of Education, science and sport of the Republic of Lithuania. The university provides admission to full-time and part-time studies.

During the period of 2019-2021 the admission was organised using a competition model which is based on competitive score (CS). It consists of grades received in subjects and additional scores. The whole principle, structure and even the calculator of CS are presented in the VILNIUS TECH website.

Since 2015 the minimum competitive score has been changing annually and in the year 2021 the minimum score to enter a state-funded place was 5.4.

The admission of master's studies has clearly pointed out criteria and processes which are approved by the Rector of the university. If they want to study in second cycle studies, they must pass the compulsory bachelor's study course unit examinations and complete course work.

The university tries to increase the number of admitted students and to attract more students to select the study programme by visiting schools in cooperation with the social partners. The tasks of those trips are to engage students by presenting them with study programme and job opportunities after they finish university.

Despite the visits, the number of students, who selected to study in the first and second cycle study programmes of this study field, has slightly decreased due to the demographic situation in Lithuania.

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

VILNIUS TECH possesses an established procedure to ratify and recognize certificates obtained abroad. Information on how international students are admitted is published on the website of the university. The part-time study course units passed abroad follow a different procedure based on a separate document which is approved by the Senate.

In 2015 VILNIUS TECH acquired the right to carry out the academic recognition of education and qualifications connected with higher education and acquired in accordance with the educational programmes of foreign states and international organisations.

There were no foreign students in this study field who needed to have their foreign qualification recognized in the last 3 years.

This study programme is not presented in English and after the meeting with lecturers we were told that not all lecturers speak in English or have little understanding of it.

3.3.3. Evaluation of conditions for ensuring academic mobility of students

According to the Rectorate, students in Safety Engineering field are not only encouraged to study part of the study course units abroad but also advised, which particular educational institution to choose where the studies would also be useful for the bachelor's or master's thesis the student is working on, by the university's coordinator of Erasmus+ and teaching staff as it

is a great opportunity for students to broaden their understanding and to see different cultures. Despite that, students are also presented with an opportunity to do internships in foreign companies.

None of the students of the Safety Engineering study field in the time of 2019-2022 participated in the Erasmus+ student exchange programme due to fear of losing their jobs in Lithuania. During the meeting with University's students, it became apparent that ERASMUS mobility is not advertised to the students, in a way that could enhance their abilities of benefiting from that.

In the meeting with students it was mentioned that Covid-19 did its part too but the main reason why no one is going on an exchange programme is that students do not get enough information about the exchange programmes and have to research it themselves. This reduces interest in the possibility to travel and study abroad for some time.

But even when they are offered to study elsewhere it does not satisfy them as the options that they get are countries near to Lithuania (Latvia and similar). There is no interest in studying in neighbouring countries.

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

VILNIUS TECH provides its students with all the essential support. They have introductory lectures, where they are introduced to the university, structure, study programme or field, library system and other necessary information.

University also has a curator programme in the first cycle of full-time studies who helps new students to get to know the university and to acquire a sense of community easier.

The "Moodle" system is used in the university, which allows lecturers to present teaching/learning educational material. VILNIUS TECH also organises consultations and seminars for VILNIUS TECH students on the questions of career choice, internship and job search, practical advice for a job interview.

All students are provided with accommodation near the educational buildings.

Social support for students is provided by awarding scholarships for study results, one-time scholarships from VILNIUS TECH and faculty scholarship funds, social scholarships (awarded by the State Studies Foundation) as well as personal scholarships.

On the other hand, during the last 4-5 years students tend to leave university due to lack of motivation which comes from poor material situations. That is because scholarships are too little to maintain yourself in Vilnius, and there is not enough information about it.

Looking at 2021, 60% of students did not complete their Safety Engineering studies because of various reasons. From the meeting with administration we understood that the university does everything to help the students. They have psychologists who try to find out why they want to drop out and higher education institution tries to suggest students best solutions. For example, they are suggested to take an academic break and come back after a year or to postpone thesis defence because the university does not want students to waste their time for nothing. Mainly it is personal reasons for the drop out.

3.3.5 Evaluation of the sufficiency of study information and student counselling

VILNIUS TECH has two courses ("Introduction to studies" and "Introduction to the specialization") during which the curator of the study programme, vice-dean's and the library representative give all the needed information, talk about different procedures, inform about the structure of the university, marking system and other crucial information.

Consultations with lecturers are also provided. Each lecturer assigns visiting hours for additional counselling which are typically two hours twice or three times a week. Those visiting hours are scheduled. Students do not indicate that they require additional consulting.

There is also a possibility to attends consultations before the exams of each study course unit. The consultation can be held in work rooms, via email or "Moodle" environment or by phone. All the needed contact information of lecturers is published on the university's website.

In the meeting with students they said that the situation with provided material in *Moodle* varies. Some lecturers tend to provide not enough material about the things they are studying and others give a little too much information and they have to filter unnecessary parts out. This makes things a bit complicated. In general, as stated in other parts of this report, student feedback should be better organised.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Clear admission criterion and career possibilities.
2. Admitted students have high average marks.

(2) Weaknesses:

1. Students feedback (in various parts of the process) is not optimised and should be further enhanced.
2. Academic mobility of students is not communicated well which complicates the situation with the number of students going on exchange programs.
3. Study language – Lithuanian which means no international students. It is advisable that certain modules are offered in English, in order to attract Erasmus students.
4. Scholarships are not enough to maintain. Have to work and study at the same time.
5. Often demographics and the global pandemic were used as excuses, as reported during the study visit.

3.4. TEACHING AND LEARNING, STUDENT PERFORMANCE AND GRADUATE EMPLOYMENT

Teaching and learning, 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

The organisation of studies is regulated by the study regulations, calendar schedule and the orders of the rector or decrees of the vice-rector for studies or the dean. All information related to this is easily accessible on the university's website and can be adapted to the individual needs of the student. Wide teaching methods are used: lectures, workshops, laboratory work as well as self-study and internships. The scope of students' self-study work is regulated by the forms of self-study indicated in the descriptor of each course unit and harmonised with the total amount of credits of the course unit. All these forms of learning are implemented using different learning methods: oral lectures, presentation, discussions, group work, case studies, testing, project work, which encourages students to get involved in the teaching process. It should be

noted that in several disciplines, the assessment of complex work is applied, which encourages the student to look at problems more broadly developing their critical way of thinking.

Students have possibilities to attend consultations conducted by teachers individually or in groups during the course of their independent work. A group consultation is planned before the examinations. Lecture schedules are drawn up by the faculty appointed by the dean, they are coordinated with the teaching staff of the course. The proposals of the students are taken into consideration as well. The approved lecture schedules for students and the teaching staff are published in the VILNIUS TECH information system.

It is noteworthy that during the COVID-19 pandemic, the university was able to quickly adapt to the changed safety requirements and within a couple of weeks reoriented the system of training and testing on achievements, applying distance learning opportunities.

Bachelor degree graduates of Safety Engineering can continue their studies in 6 study programmes of VILNIUS TECH (Safety Engineering, Construction Materials and Products, Construction Technologies and Management, Innovation and Technology Communication, Engineering Economics and Management, Business administration). During a meeting to alumni they agreed that the graduates wish to continue their studies in other study programmes provided by VILNIUS TECH. They have opportunities to study there too, only for them individual study programs are created or additional levelling studies are provided.

The master's degree graduates of the Safety Engineering study programmes may continue their studies in VILNIUS TECH as doctoral students of another university. In the majority of cases the graduates of this study programme choose doctoral studies of Civil engineering and Materials engineering. However, a large number of students have not completed their master's studies on time, as the SER shows, this significantly reduces the value of the Study programme.

Exams are scheduled with each other and with teachers. There are clear procedures for when and how additional exams can be taken (without passing or appearing). Information about this is published even before the session.

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

The university offers a flexible assessment schedule and may reduce tuition fees as it values each student and looks into the needs of students with disabilities.

There were special training sessions for university teachers on the specific features of studies related to students with disabilities, and provided support materials on the Moodle platform applicable in the study process.

All of the university facilities are fully adjusted for students with disabilities at the university premises. Special conditions are provided for students with mobility disabilities (toilets, elevator for the disabled, corridors, etc). A special schema is located on the university's website, indicating how people with reduced mobility can reach different places. It should be noted that the plan is presented only in Lithuanian, in the English version it is to add it. The psychologist delivers lectures to the teaching staff about mental disabilities. Psychological counselling is available for students with disabilities, providing emotional support, certain information and referring to the appropriate medical facility, if necessary.

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

VILNIUS TECH study progress monitoring is carried out at the three levels (the university, faculty and committee of a certain study programme). The results of the examination sessions are summarised and discussed twice a year. In case of result differences between different study programmes, the relevant study programme committee and the respective faculty takes note of this. The study programme committee may initiate changes in the content of the study programme or a certain course unit. Large-scale changes are always to be discussed in the faculty study committee, and the faculty administration mediates in solving problems with the lecturers of the departments of other faculties.

In order to ensure better student achievements VILNIUS TECH has a Student Achievement Monitoring and Improvement Plan. Under this plan certain measures are envisaged to monitor and improve the achievements (SER p. 36, table 8). During the meeting with the training staff, it was not possible to get an explanation of how the program actually works.

It should be noted that in recent years, the number of students admitted to the Fire Safety specialty has been decreasing, as is the number of students who have completed their studies. Although employers and social partners unanimously prove that this type of specialist is in dire need. It is necessary to note that in 2021 not a single student completed their first cycle studies.

The number of Safety Engineering students is much lower, even tending to increase, which indicates that this specialty is really needed, although in 2021 as many as 60% of all students

did not complete their studies on time. It is necessary to evaluate the reasons for such a jump and to foresee actions that will allow in the future to avoid such a significant loss of students.

Although it is established that the dean of the Faculty of Civil Engineering performs the monitoring of the employment and career success of graduates at the level of programmes in the field of Safety Engineering, however, no detailed analysis of this has been provided in the SER and during visits at University.

The most recent surveys were conducted in 2022, graduates of the latest 3 years were surveyed, with over 40% of graduates of each study programme under analysis in participation. However, during the meeting, the students expressed their wish that their feedback be taken more seriously.

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

The employability of students is formally difficult to assess, since data are only available on those who have been employed within 12 months of graduation. Due to the high demand for specialists in Safety Engineering and Fire Safety in the market, already students of 3-4 courses (even in the 2nd course, as indicated by representatives of employers) have the opportunity to work in the specialty, and many do this. Such an opportunity is also positively reflected in the assessment carried out by graduates (90% of graduates evaluate the preparedness for the labour market after graduation as excellent, very good and good). In a meeting with alumni and current students, they indicated that during their master's studies they worked, most in their specialty. At the same time during the on-site visit some students mentioned that they do not have enough time for their studies because they have a job. In this case university can help students by developing time management skills.

Additionally, according to SER 40 % of the graduates indicated that after graduation they had to undergo additional training, so an even closer relationship with potential employers and their involvement in the study process (internships, final theses, scientific research) would be encouraged. Although the employers themselves did not make proposals for the improvement of the curriculum, limiting themselves to assessing the professional readiness of graduates well. It should be appreciated that employers emphasised the lack of certain personal qualities of graduates. It is believed that their greater involvement in the learning process would help students develop the missing qualities as well.

It should be noted that there is no data on the employment of fire safety specialists in foreign markets. Several graduates of the evaluated programs work in foreign companies in Lithuania.

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

The principles of academic integrity are clearly formed and defined at Code of Academic Ethics of Vilnius Gediminas Technical University in the study process. Each student enrolling at the university signs a student's declaration of academic integrity, which is valid for the entire term of the study contract. It is important to note that during the last 3 years no cases of academic dishonesty have been recorded in the study programmes in the field of safety engineering.

Relationships between members of the academic community are based on the principles of respect, goodwill, impartiality and non-discrimination. There have been no cases of violation of the principles of tolerance and non-discrimination.

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

The procedures for resolving student appeals and complaints are provided in the Description of procedures for resolving student appeals and complaints. The procedures are set out in an understandable and logical timeframe, ensuring that a full assessment can be carried out. Over the last 3 years no appeals have been filed in the Civil Engineering faculty.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Graduates of both study programmes find employment during their studies and have highly qualified jobs in the fields related to the study programmes.
2. Employers express positive feedback about the preparedness of the graduates for the labour market.

(2) Weaknesses:

1. It was reported that students do not have enough time for their studies because they have a job. More attention from the University should be paid to developing students' time management skills.
2. The feedback system from potential employers and graduates needs to be improved.
3. It is necessary to have more active cooperation with potential employers, involving them in the study process and improving study programmes.
4. A large number of students have not completed their master's studies on time. Measures need to be taken to enable the completion of the studies begun.

3.5. TEACHING STAFF

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

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

Evaluation of course(s) at the VILNIUS TECH is based on the information provided in advance to the visit of the Expert Panel, as well as the on-site visit of the Panel on the premises and its meetings with the Faculty.

The ***Fire Protection study programme*** is supported by 13 Scientific Collaborators (4 PhD's), 17 Associate Professors and 2 Professors. The ***Safety Engineering study programme*** is supported by 1 Scientific Collaborator, 4 Associate Professors and 1 Professor.

The educational background (areas of expertise) of the teaching staff is adequate to the level of the degrees, but there is not a pivotal figure (champion) in the areas of fire protection and safety science that would drive the degree both in teaching as well as research. The teaching workload of the instructors is rather heavy (7 classes per week). It should be noted that in 4 cases, teaching staff present teaching engagement of 1.25 and 1.5 FTE. Additional Teaching Load should be looked at and rectified in the future, as this would have an impact on the research and community engagement abilities of these academics. Senior administration informed the Committee that there is a scheme of monetary rewards, but no Teaching Hour Reduction; as much as monetary incentives are important, it should be noted that time is important for research. Academic Staff informed the Committee that there is a monetary scheme on research production (publications) in place and on an ad-hoc basis the Dean of the Faculty can provide

Teaching Hour Reduction to the Faculty. The Committee asked for the relevant documentation but this was not available. It is advisable that important matters dealing with research should be a product of a democratic process at the department / school / faculty level and then they should be ratified by relevant senate decisions.

From a research perspective we note the following:

- In the fire domain there are only a handful of relevant publications (3-4), 2 of which are focusing on process safety mostly. This is inline with the observation of the Committee that a domain expert is required.
- In the safety domain there are very few publications reported (2, from which one is conference proceedings). This is inline with the observation of the Committee that a domain expert is required.
- There is more research work in the domain of process safety, water treatment, mathematics.
- 4 Internationally funded projects are reported (in 2020), one of them an Horizon 2020 project, 3 of which are generated from the same person.
- In terms of Scopus metrics, there are individuals with a clear research impact, yet this is not resulting in group research work.
- There is limited incoming faculty but much outgoing faculty mobility through Erasmus mobility.
- There is no information on research groups in the SER, although during the visit the Committee were informed that there were 3. It should be noted that formation of research groups is a first step in increasing research production (publications and funding) aiming to assist - in particular - new faculty and / or faculty that have been research inactive for some time.
- There is no documented information on research policies that would provide Teaching Hour Reductions and research support initiatives. As stated above these are essential and should be decided at a departmental level.
- There is no submitted documented research strategy. This lack of research strategy explains the scarcity in research focus (described in previous points).

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

Based on the information provided in the SER, the ratio between outgoing to incoming academic mobility is very large. Despite the relatively high number of outgoing teaching mobility, this is not resulting in the increase of internationality in research and teaching with obvious impacts on Faculty and students. **According to the SER there were 8 incoming and 39 outgoing visits**.

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

A number of measures that can (further) improve the competences of the teaching staff are mentioned above. In summary proposals are as follows:

1. Adoption of a focused research strategy, discussed in a departmental level
2. Formation of research groups
3. Internationalisation
4. Adoption of more teaching classes in English

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Faculty has been supporting the programme for a number of years.
2. There are individual Faculty members that have an established research path, evident in publications in peer reviewed scopus and web of science listed journals (Q1 and Q2).

(2) Weaknesses:

1. A Faculty domain expert in the area of safety science is not available.
2. A Faculty domain expert in the area of Fire Protection is not available.
3. A clear Research Strategy is not available in English, in order to be assessed. No presentation on Research was provided. Same stands for strategies at the Department level. This has an impact on the research output of the department.
4. A clear Internationalisation Strategy in the Department level is not available. No presentation on Internationalisation was provided. This has an impact on research and teaching in the department.
5. A clear strategy on dealing with the impacts to the students of the global pandemic is not available, resulting in dissatisfaction both from the academic, as well as the student body.

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

Assessment of Facilities and Learning Resources for the Safety Engineering course at Vilnius Gediminas Technical University is based on the Self-Evaluation Report submitted, as well as the physical inspection conducted during the Evaluation Committee visit at the premises of the aforementioned university.

According to the SER:

Lecture rooms and auditoriums are provided with the necessary support facilities for conducting classes. Due to the ongoing global pandemic, teaching support facilities have been enhanced with the necessary items to conduct teaching in a distance learning mode (Zoom and MS Teams). Students can perform independent tasks in the "Technology and Management Sciences Reading Room" (Saulėtekio 11, Central building, SRC C03), at the library (Saulėtekio 14), in the Vilnius Tech lobby, or in other Vilnius Tech spaces with work and rest areas for students installed. Wireless Internet connection is available on the Vilnius Tech premises. In virtually every location students can log in and use it to complete assignments. In case hardware is required for independent assignments, students can use computer classes SRL-I 520, SRL-I 521. Also in the summer of 2019 a modern specialised SRK-I auditorium 213 was newly installed. The university has an e-learning group at the Centre for Educational Technologies aiming to provide visual and other aids in order to support hybrid learning with the use of an LMS (Learning Management System), in our case Moodle.

Bachelor in Fire Protection students benefit from having access to the laboratories at the training base of the Fire Fighters Training School of the Department of Fire Protection and Rescue under the Ministry of the Interior. In particular they can use the following parts of the training base:

- Fire Fighters Training School training field;
- the sports ground for fire brigades with a training tower;
- the fire brigade garages.

In the training field students complete practical tasks with fire and rescue equipment, train for deployment of fire forces and equipment at the fire site, develop teamwork skills, extinguish fires using different extinguishing materials, perform practical rescue operations of people and property in various contexts.

There are four training laboratories for the specialty of Fire Protection: Combustion and Fire Suppression, Technological Process Fire Prevention, Building Materials and Human Safety. The Fire Protection bachelors of the second year perform laboratory work in the discipline of "Combustion and Fire Suppression Theory" in the Fire protection laboratory (SRL-I 608A), as for the disciplines of "Materials Science" and "Building Materials" – in the Laboratory of Building Materials (SRL-I 105). The Fire protection laboratory was established with the assistance of the Department of Fire Protection and Rescue, the Main School of Fire Service in Warsaw and the Fire Research Centre. The Fire Protection bachelors of the third year perform laboratory work in the discipline of "Technological Process Fire Prevention" in the Fire protection training laboratory (SRL-I 608), as for the discipline of "Human and civil protection" – in the Training Laboratory of Human Safety (SRL-I 523). In addition to that there is an Applied Laboratory of Buildings, Structures and Materials of the Department of Reinforced Concrete Structures and Geotechnics.

Bachelor's and Master's students can use the laboratory base of the Fire Research Centre during the final thesis process. Students can conduct the experimental research required for the master's final thesis under the supervision of laboratory professionals. The following equipment is used:

Equipment to test material flammability:

- equipment for determining the heat of combustion of materials in accordance with standard EN ISO 1716;
- equipment for determining the non-combustibility performance according to standard EN ISO 1182;
- Equipment for the thermal attack of a single burning item exposed to SBI materials in accordance with standard EN 13823;
- single flame source test equipment according to standard EN ISO 11925-2;
- equipment for determination of flooring product burning behaviour using a radiant heat source according to standard EN ISO 9239-1;

- Premixed flame test equipment for 1 kW electric and optical fibre cables in accordance with standard EN 30332-1-2;
- equipment for determining the performance of roofs to external fire exposure in accordance with standard CEN/TS 1187.

Fire resistance test equipment:

- Fire Resistance Test Furnace HASLE Refractories A/S“, 2600 kW;
- furnace for smoke protection testing;
- equipment to determine the resistance to repeated opening and closing of windows and doors in accordance with standard EN 1191;

Other equipment:

- fire pressure hose test equipment according to standard DIN 14811;
- Netzsch TG 209 F1 Libra Thermal Analyzer;
- equipment for measurements of the thickness of non-magnetizable coatings on magnetizable base metals in accordance with EN ISO 2178.

Students in the Safety Engineering study programme also have access to the following software: STATISTICA, FDS, FTA, Event Tree Analysis, EGRESS 2002.

The University Data Centre is adequately equipped with a number of physical and remote servers and the latest in IT Infrastructure; as of 2021 there is a switch to cloud bases technologies and storage. University based software is available in a virtual fashion as well as on a mobile version.

In general, the VILNIUS TECH library is well equipped to support the students and academic teaching staff and it is open 24/7. The thematic reading room of Technology and Management Sciences (VILNIUS TECH Central Building) offers its services to students from 9 AM to 9 PM. The library offers 13 customised study spaces with 393 workstations, 60 of which are computerised. Scientific printed books in foreign languages are purchased up to 5 copies, textbooks – up to 15 copies. The library offers a plethora of online scientific resources, VILNIUS TECH institution members have full access to 53 145 e-books, 9 427 scientific journals, 471 213 conference cycles, 29 500 videos as well as different statistical data, reports and publications.

During the visit the following were noted:

1. Relevant books (Fire Protection) were not available in the library or the catalogue during the visit. Fundamental readings were not available.
2. Relevant books (Occupational Safety and Health) were not available in the library or the catalogue during the visit. Fundamental readings were not available.
3. Laboratory space and usage should be optimised according to the relevant national Health and Safety legislation.

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

According to the SER Para 6.2 there is a generic plan, listing a number of initiatives. Modernisation plans should be followed with a time action plan. At the same time, it should be noted that the equipment in the Fire Academy is of high standard and should be further integrated in the course.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Laboratories have the relevant equipment
2. Teaching facilities are of high standard
3. Laboratories available at the Fire Fighters Training School of the Department of Fire Protection and Rescue under the Ministry of the Interior are well organised and should be better utilised for teaching and research purposes.

(2) Weaknesses:

1. Laboratory space and usage is not optimised. Safety is of paramount importance.
2. Fundamental readings are not available in the library.

3.7. STUDY QUALITY MANAGEMENT AND PUBLIC INFORMATION

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

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

In the Self-Evaluation Report, the internal quality assurance process is explained. It aims to assess the efficiency and transparency of the study programmes, using periodic inspections and

monitoring as tools and ensure the participation of social stakeholders. Also external evaluation and accreditation are used as quality control. Obviously it involves study programmes, but also the assessment of student achievements, assisting students with career planning, creating a professional atmosphere for the teaching staff, and the organisation of regular feedback amongst stakeholders. During the meeting with Staff, it became apparent that Staff did not „owe" the programs under evaluation.

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

According to the Self-Evaluation Report, stakeholders, employers and representatives of professional organisations, are chairing the degree Award Commission, where final theses are discussed. Together with social stakeholders they are involved in the study programme as lectures. Students are represented in study committees, the university council and the Senate. During the visit and the meetings with the relevant stakeholders, it became apparent that flow of information between the bodies and communication channels between students and faculty, are not adequate.

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

All information on study programmes is presented on websites of VILNIUS TECH, as well as on those of departments. Administrative offices have subsystems to review study plans, and to manage student data.

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

The Self-Evaluation Report mentions that students' progress is constantly analysed as a feedback for the content of course units and study methods, the quality of presentations and suggestions to improve the quality of the studies. As stated in many other parts of this report, student feedback should be further integrated in the process. In particular, given the nature of the programs under evaluation and the fact that many of the students start working before the end of their studies, their opinion can act as a catalyst.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. A quality assurance system is in place.

(2) Weaknesses:

1. Faculty involvement in the programmes under evaluation should be enhanced in order for the Faculty to develop a sense of ownership to the programs under evaluation.
2. Student feedback should be further integrated in various parts of the process.

IV. RECOMMENDATIONS

Evaluation Area	Recommendations for the Evaluation Area (study cycle)
Intended and achieved learning outcomes and curriculum	1) The following modules should be added and the overall programme should be modified accordingly: a) Loss prevention and process safety b) Fire codes - with a focus on national (Lithuanian), international (NFPA, BS) fire codes and international standards (Eurocodes) c) as part of the "tactics of fire and rescue I or II" an introduction to the European Civil Protection Mechanism should be included d) A module that will promote integration of professional practise and standards will have to be included 2) A student attrition strategy should be developed in order to provide incentives to students to finish their degree. 3) An abstract in English for the final thesis, should be made compulsory.
Links between science (art) and studies	1) Faculty and students should be encouraged to internationalise their work.
Student admission and support	1) Better communication about exchange programmes; 2) Scholarship programmes should be enhanced, in particular in collaboration with industrial partners
Teaching and learning, student performance and graduate employment	1) Student feedback should be considered and this should be actively indicated in the Periodic Assessment of the program

Teaching staff	1) A Faculty domain expert in the area of safety science should be recruited. The new Faculty member should be competent to undertake teaching and research on an international level. 2) A Faculty domain expert in the area of Fire Protection should be recruited. The new Faculty member should be competent to undertake teaching and research on an international level. 3) A clear Research Strategy in the Department level, should be developed. 4) A clear Internationalisation Strategy at the Department level should be developed. 5) Student feedback should be further integrated and should be part of the Periodic Assessment of the course. 6) Faculty feedback should be further integrated and should be part of the Periodic Assessment of the course.
Learning facilities and resources	1) Fundamental Books in Fire Prevention should be available in the library. 2) Fundamental Books in Safety Science should be available in the library. 3) Laboratories at the University premises should be better organised, in terms of space available.
Study quality management and public information	1) Faculty involvement in the programmes under evaluation should be enhanced in order for the Faculty to develop a sense of ownership to the programs under evaluation. 2) Student feedback should be further integrated in various parts of the process.

V. SUMMARY

The Expert Panel conducted a visit to the University premises and had meetings with relevant stakeholders, further to receiving the SER of the courses under evaluation. The Expert Panel concluded that the courses under evaluation are marginal with regards to the University; the University should find ways of embracing the department and supporting the courses in a more appropriate way. This was evident throughout the meetings and serious efforts should be taken in order to rectify fundamental issues that affect the programmes, the faculty associated with the programmes and the student body. It should also be noted that the University could have regarded the accreditation meeting in a more structured way. No presentations were provided in any of the meetings and in general there was a widely perceived feeling of lack of "ownership" of the programmes. The Committee strongly believes that both programs are relevant to the economical and societal conditions of Lithuania and for this reason it has decided to provide a 3 year accreditation, subject to the provision after one year, of a report that indicates that all the recommendations that are given in this document are dealt with, in a satisfactory manner. Systemic and fundamental issues exist and should be addressed constructively. Internationalisation and research are two areas that should be fostered and specialised plans should be drawn, in order to encourage them. Students can only benefit from a course environment that promotes internationalisation and a body of academics that provide them with the latest in cutting edge research. Flow of information between the bodies is not evident and should be encouraged. Students, alumni and industrial stakeholders are an excellent source of information that are willing to support the programs in many ways, according to the Expert Panel. Their opinions and experience should be utilised.

Expert panel chairperson signature:
Prof. dr. Paul Swuste

(signature)