CENTRE FOR QUALITY ASSESSMENT IN HIGHER EDUCATION

EVALUATION REPORT

STUDY FIELD of CIVIL ENGINEERING

at VYTAUTAS MAGNUS UNIVERSITY

Expert panel:

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4. **Professor dr. Marija Malenkovska Todorova** *member of academic community;*
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6. **Mr. Tomas Bedulskij,** *students' representative*.

Evaluation coordinator – *Jūratė Čergelienė*

Report language – English

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Study Field Data*

Title of the study programme	Hydraulic Engineering
State code	6211EX027
Type of studies	University studies
Cycle of studies	Second cycle
Mode of study and duration (in years)	Full-time (2 years), part-time (3 years)
Credit volume	120
Qualification degree and (or) professional qualification	Master of Engineering Sciences
Language of instruction	Lithuanian, English
Minimum education required	Bachelor's degree or its equivalent
Registration date of the study programme	1992

** 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 the 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) site visit of the expert panel to the higher education institution; 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 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 was evaluated as satisfactory (2 points).

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

1.2. EXPERT PANEL

The expert panel was assigned according to the Experts Selection Procedure (hereinafter referred to as the Procedure) as approved by the Director of Centre for Quality Assessment in Higher Education on 31 December 2019 Order No. V-149. The site visit to the HEI was conducted by the panel on *22 November, 2021.*

Associate Professor dr. George Markou, *associate professor at Pretoria University (South Africa);*
Professor dr. Tonu Meidla, *professor at Tartu University (Estonia);*
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Professor dr. Žymantas Rudžionis, *Director of Lithuanian Association of Civil Engineers at Kaunas branch (Lithuania);*
Mr. Tomas Bedulskij, *second cycle student of Asian Studies at Vilnius University (Lithuania).*

1.3. GENERAL INFORMATION

The documentation submitted by the HEI follows the outline recommended by 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.	ADDITIONAL MATERIAL FOR VMU CIVIL ENGINEERING EVALUATION _2021-11-18
2.	HST5001_Hidrotechnikos statinių kompiuterinis projektavimas
3.	HST5006_Hidrologinių sistemų skaitmeninis modeliavimas
4.	VMU EXIT 2021 survey results
5.	VMU questionnaire for EXIT survey
6.	VMU questionnaire for teaching and learning evaluation (sample of survey)
7.	VMU Teaching and learning survey results_2021 spring (sample of survey)
8.	VMU-Procedure-for-Study-QA_June-02-2021-edition
9.	HSI_2_pak tobulinimo plano_2021-22

1.4. BACKGROUND OF THE STUDY FIELD/STUDY FIELD POSITION/STATUS AND SIGNIFICANCE IN THE HEI

The Vytautas Magnus University (hereafter – VMU) was established in 1922 and was then re-established in 1989. It offers degrees at the BSc, MSc and PhD levels that cover a broad spectrum of fields. As stated in the Self-evaluation Report (hereafter – SER), it is an international and multilingual institution that strives to develop international networks and intercultural dialogues, participates in international scientific, academic and social projects, while encouraging teacher and student mobility.

There are 15 academic divisions at VMU: Faculty of Arts, Faculty of Catholic Theology, Faculty of Economics and Management, Faculty of Humanities, Faculty of Informatics, Faculty of Law, Faculty of Natural Sciences, Faculty of Political Science and Diplomacy, Faculty of Social Sciences, Agriculture Academy (hereinafter AA or the Academy), Education Academy, Music Academy, Innovative Studies Institute, Institute of Foreign Languages, Botanical Garden.

The Faculty of Water and Land Management was established in 1946, while in 2020 due to low number of students the Hydraulic Engineering programme had its content adjusted and it was integrated into the programme of Water and Land Engineering (Environmental Engineering study field) as a separate Hydraulic Engineering with specialization.

According to the SER, the most important research fields of the Faculty related to Civil Engineering are:

- Physical and digital modelling of hydraulic and hydrological processes;
- Application of Nano and other technologies in water management and construction processes;

- Research on durability of structures and materials of hydraulic engineering and agricultural structures;
- Drainage and irrigation systems, change of water balance elements;
- Water pollution and its reduction measures, restoration of damaged aquatic ecosystems;
- Management and sustainable use of water resources (hydropower, flood risk management, inland waterways, renovation of water bodies).

The second cycle of Hydraulic Engineering study programmes was assessed in 2014 and was accredited for 6 years. The programme forms an important part of the VMU since it deals with issues related to water that is found to affect not only Lithuania, but the international community. It must also be noted herein that the programme is the only one in the region which makes it unique, but at the same time a crucial component for producing the much-needed Hydraulic Engineers.

II. GENERAL ASSESSMENT

Civil Engineering study field and second cycle at Vytautas Magnus University (VMU) 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	3
2.	Links between science (art) and studies	3
3.	Student admission and support	3
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:	20

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

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)

(1) Factual situation

The second level study programme Hydraulic Engineering (hereafter - HE; registration year 1992) at the Vytautas Magnus University (VMU) offers the degree of Master of Engineering Sciences. It's credit volume is 120 ECTS and it has two tuition languages – Lithuanian and English. HE programme belongs to the Agricultural Academy (hereafter - AA) that was established in 2018 and continues the activities of Aleksandras Stulginskis University (ASU, 2012–2018), Lithuanian University of Agriculture (1996–2012) and Lithuanian Academy of Agriculture (1924–1996), being run by the Faculty of Water and Land Management (FWLM), a department of AA.

As the former first level HE programme was rearranged in 2018 and integrated into the programme Water and Land Engineering (as a specialization in the study field of Environmental Engineering), HE represents a "stand-alone" master programme belonging to the civil engineering field of the construction sector (in accordance with Professional Standard in the Construction Sector). The aim of HE MSc programme is preparing engineering specialists capable of conducting scientific or applied research, evaluating water management structures and their impact on the environment using scientific methods and integrating knowledge from different fields, aimed at solving problems of water management and analysing/modeling the environmental and engineering phenomena.

The VMU states that the peculiarity of competencies of the graduates of this programme is that some of them are focused not only on civil engineering but also on fields of environmental engineering and agricultural sciences that are closely related to water engineering. VMU emphasises that there are no similar programmes at other universities within the country.

The need for specialists educated in the field of hydraulic engineering is clearly argued, referring to the number of companies (120) and employees (>5000) acting in the field of hydraulic engineering and exploitation of hydraulic structures, as well as by over 70 000 various hydraulic structures located within the country and overall extent of water consumption and management. An applied study suggests the need for specialists during 2021-2024 to be 10 on the MSc and 26 on BSc level. These figures, however, are not confirmed by actual employment studies of recent (2021) graduates and do not take into account new specialists educated in partly overlapping fields at other universities, particularly at the very large Vilnius Gediminas Technical University located in the nearby capital city. All these omissions lower the credibility of this

estimate. It is noteworthy that the number of admissions dropped heavily since 2019 and this means that VMU may have difficulties meeting the described challenges of specialists' market. The expert panel did not recognise any well-defined action plan for tackling this problem.

VMU emphasizes the competences of environmental engineering and agricultural sciences as a unique feature of the HE programme stating that there are no similar programmes at other universities in the country. This peculiarity, however, is insufficiently supported by the actual content of the programme. These aspects are mainly covered with elective courses (like Environmental Protection Structures, Technology of Drainage and Irrigation, etc) that are not available on request but only dependent on formation of a profitable group (at least 6 students) that may heavily limit their availability, considering shrinking admission numbers.

(2) Expert judgement/indicator analysis

The expert panel was pleased to recognise that VMU has recognised and well argued the needs of the society for the graduates in the field of hydraulic engineering. However, the expert panel expresses doubts concerning the ability of VMU to meet the challenges of the particularly narrow sector of the labour market and did not find evidence about the existence of an action plan for tackling the problem.

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

The HE programme is broadly linked to the subtopics of Strategic Objective 5 of VMU (university impact on societal development) and specifically to the subtopic 5.3 seeking leadership in the training of agricultural specialists and in the development of Agriculture, Forestry, Aquaculture and Rural Development Policies. The latter document is also clearly outlining the ambition of expanding expert and consultation services based on the recent achievements, addressing both the agricultural entities and public institutions and aiming at contributing actively to the European Green Deal, digitalization of agriculture, circular economy and other initiatives as well as to the substantiation of ideas by research and their implementation in Lithuania. These aims and strategic goals are in good accordance with the general aim of the HE programme to design modern water management structures and engineering in accordance with long-term environmental impact forecasts, to propose projects on water quality improvement and rational use, as well as at to identify and solve various water engineering problems, understand applied methodologies and their limitations, choose engineering equipment and software, know the principles of organization of engineering activities and use modern technologies that conserve land and water resources.

(2) Expert judgement/indicator analysis

The expert panel is pleased to conclude that the field of civil engineering is clearly reflected in the strategic documents of VMU and the aims and goals of the study programmes are sufficiently considering the strategic priorities of VMU.

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

(1) Factual situation

The composition of study programmes was analysed against the legal acts specifying the requirements about the general scope, the scope of the subjects of the narrow study field and the scope of the final thesis, as well as the scope of contact and individual work.

The overall structure of the HE programme, both for full-time and part-time studies, comprises 60 ECTS of compulsory subjects in the field (in accordance with the state requirements), 12 ECTS of compulsory subjects of other fields, 18 ECTS of optional subjects (with a possibility of choosing also two subjects of other study fields) and 30 ECTS MSc thesis. This shows that HE programme fully complies with the legal requirements of the second level university education (Approval of the description of the requirements for the conduct of general studies, 30.12.2016, V-1168). Agreement with the Descriptor of Study Cycles (V-1012, 16.11.2016) and the Competence requirements for a civil engineer provided in the professional standard of the construction sector (second cycle, VII qualification level – V1-140, 12.07.2019) is also declared. 20% of the compulsory study field courses are taught by professors (conforms to the requirements).

The HE programme was evaluated in 2014, with good results overall and with recommendations to improve the competencies related to research and independent thinking among learning outcomes. The programme now contains 12 ECTS of research work (two subjects). In the last meeting of the study programme committee in April-May 2020, the composition of the programme, the compliance of the subject content with the study cycle and academic requirements and the sufficiency of the scope of the programmes to achieve the study outcomes was evaluated, likely in relation with the preparation of the SER.

(2) Expert judgement/indicator analysis

The expert panel concludes that the overall structure of the HE programme does formally comply with the legal requirements of the second level university education and the results of the previous evaluation are duly considered.

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

(1) Factual situation

The HE programme is aimed at training qualified engineering specialists for conducting scientific or applied research, evaluating water structures and their impact on the environment using advanced scientific methods and integrating knowledge of different fields at solving theoretical and practical water management problems, as well as analysing environmental changes, engineering phenomena and processes using the latest information technologies. The learning outcomes of the individual subjects are designed generally in accordance with the learning outcomes of the programme. VMU emphasizes the relationships between the HE programme and the fields of environmental engineering and agricultural sciences. The expert panel observed that

the links to environmental engineering can be recognized in the list of elective subjects but the links to agricultural sciences are less clear.

The programme contains a remarkable amount of independent research work (42 ECTS, 36.7% of the total scope of the programme) and this is also reflected in the coherence matrix of subjects and learning outcomes of the HE where emphasis is put on research and solution of engineering tasks whilst some aspects related to engineering analysis and engineering design are likely undervalued. At the same time, the programme allocates no room for practice/internship.

The compliance of the programme content to the Descriptor of the study field of Engineering (V-964, 10.09.2015) in terms of programme goals, learning outcomes and content of the subjects is mostly sufficient but still not convincing in some aspects. The programme is insufficiently considering knowledge of basic fields of natural science and mathematical regularities and laws that are necessary to understand fundamental basics of engineering (V-964, 18.1.1.1; the subjects Restoration of Disturbed Water Ecosystems, Building Legal Regulation and Optimization of Hydraulic Construction Works Processes – see Table 1.2 in the SER – are most likely insufficiently covering these aspects). The programme does insufficiently also address knowledge and understanding of basic Engineering study field concepts (ibid.,18.1.1.2). In a combination with a massive research orientation, restricted availability of some important elective subjects (because of restrictions in the programme and limited availability – see 3.1.5 below) and the limited availability and value of industrial internship, the possibility of admitting candidates with non-engineering background (mentioned in the admission rules) casts doubt on the uniform quality of training level in graduates, on the sufficiency of their knowledge and preparation for practical work.

According to the SER, a wide variety of active teaching/learning methods are flexibly applied, like preparation and presentation of reports, case analysis, problem solving, demonstration, project preparation and presentation, information analysis and summarization, video review, etc. The types of final assessment of individual subjects are much more limited, comprising written examination and defence of research results, although small size of groups would facilitate more flexibility and variation.

(2) Expert judgement/indicator analysis

The expert panel was pleased to recognise that the learning outcomes of the individual subjects are designed generally in accordance with the learning outcomes of the programme, but recognised the imbalance between the massive emphasis on research along with more limited attention to basic and practical knowledge, as well as limited selection of final assessment methods.

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

(1) Factual situation

The workload is calculated in ECTS (1 ECTS corresponds to 26,67 hours of student work; however, this is not valid for the graduation thesis) and the programme consists of only 6 ECTS courses (except for the graduation paper). The share of contact work was previously 42 hours per

6-ECTS-course but it was remarkably increased (to 60 hours per 6 ECTS) in 2020, because of changing regulations. Correspondence of workload to the ECTS volume of individual subjects is regularly evaluated. The arrangements of full-time and part-time studies are clearly specified (Self-evaluation Report, Annex 1). At the same time, there is no full-time programme exposed on the website and this allows suggest that in reality the students are not admitted to the full-time course.

Subjects are generally organised in logical succession, from basic to more in-depth courses. Majority of the general subjects of the study field are compulsory but the programme also contains a list of elective subjects of the study field and a possibility of choosing three of them. It is still noteworthy that several important speciality subjects (i.e. Technology of Drainage and Irrigation, Reconstruction of Hydraulic Structures, Modelling of Water Supply and Sewer Systems, Building Information Modelling (BIM) in Hydraulic Engineering) are found among the elective courses and can't be selected simultaneously because of limitations of the programme. The students who met the expert panel say that the actual list of 18 ECTS of elective courses is negotiated within the group, but as for the formation of a profitable group (at least 6 students) is a prerequisite for offering these courses, their practical availability will be limited, particularly considering the admission numbers of the last few years. The expert panel also recognised some disagreements between the Annex 1 and the list of electives in the programme displayed in the university website (the courses like Environment Protection Structures, Modelling of Seepage, Decision Support Systems For Water Management are not indicated on the website and are likely not available). This means much less flexibility in the programme. The students met by the expert panel expressed their mild concern about limited opportunities for specialisation within the remarkably wide HE programme.

The fact that the programme allocates no room for practice/internship is still noteworthy, as internship is mentioned in SER (p. 11). The students were addressing the problems of internship during the meeting with the expert panel, expressing their concerns about limited internship, as well as limited value of some internships to the development of new skills and competences.

(2) Expert judgement/indicator analysis

The expert panel concluded that the organisation of the subjects within the programme is in general terms, ensuring consistent development of the skills of students, but also recognised limited opportunities for specialisation and limited internship. The latter aspects of the programme need to be developed.

3.1.6. Evaluation of opportunities for students to personalise the structure of field study programmes according to their personal learning objectives and intended learning outcomes

(1) Factual situation

The VMU is offering a possibility to agree to an individual schedule of studies in order to meet specific learning needs. An individual study schedule redistributes the courses of the programme and enables longer periods of studies. This field is clearly regulated (Order No. 2-10/9.03.2016 on organization of individual studies, affirmed by the Senate of VMU). The students who met the expert panel had no experience in using a personalised study plan.

There is seemingly only little need for such a measure as students are considering the workload of studies to be rather low and the overall schedule relaxed, facilitating full-time work.

A very limited opportunity to select the subjects from the specialty electives list is provided in the curriculum and this is also subject to the availability of respective courses (see the chapter 3.1.5 above). Additionally, there is the possibility of selecting the topic of the final thesis. This means a very low level of flexibility in the programme and there is currently no room for further personalisation opportunities. The practice of taking fees for additional subjects taken from other programmes is additionally restricting access to the personal complementary skills development in relevant areas like basics of management, public speaking, etc.

(2) Expert judgement/indicator analysis

The expert panel is rating the opportunities for students to personalise their studies as being very low and clearly below the reasonable minimum.

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

(1) Factual situation

The preparation and defence of final theses is regulated by VMU Study Regulations and General Order on the Final Theses Preparation and Defence. The latter document describes general requirements for final theses and defence procedures. The methodological requirements set by the Faculty were updated in 2019. The defence of the final theses takes place at the end of the last semester.

The content of the final theses and their compliance with the field studies are analysed by the institute. The topics comprise assessment and renewal of the condition of hydraulic engineering, land reclamation, port structures, water supply and sewage engineering networks, durability and strength of building materials. The topics can also be proposed by the social partners.

The time of the defence, the requirements and respective procedures are clearly set. The compliance of the final theses with the requirements of the field and cycle is assessed by the Final Thesis Evaluation Commission, reporting to the Faculty Council. The Faculty Council may approve or disapprove the report of the Commission. A commission for the assessment of the thesis consisting of 3–5 persons is formed of the study field experts and affirmed by the Dean of the Faculty. The chairman or at least one member of the commission must come from another institution (social partners, alumni, researchers from other scientific institutions) and all members must have a PhD or equivalent degree. According to the information given to the expert panel by the members of teaching staff, usually there are two external members -- the chairman and one commission member.

The final thesis can be defended only in case of approbation of research results at a conference and publishing in a peer reviewed scientific publication. If the student fails, a new attempt is possible after at least six months from the first defence passed by.

The topics of the final theses are relevant and there is a remarkable number of topics proposed by social partners in the list. The examination of a selection of the theses shows that the content and the complexity level are adequate for a MSc programme.

(2) Expert judgement/indicator analysis

The expert panel was pleased to consider the procedures and regulations of compiling and defending the final theses fully adequate and the final theses fully compliant with field and cycle requirements.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. The field of civil engineering is clearly reflected in the strategic documents and the aims and goals of the study programmes are sufficiently considering these strategic priorities.

2. The overall structure of the programme does formally comply with the legal requirements of the second level university education.

3. The results of the previous evaluation are duly considered.

4. The learning outcomes of the individual subjects are generally in accordance with the learning outcomes of the programme.

5. The organisation of the subjects in the programme is supporting consistent development of competences of students.

6. The content and complexity level of the final theses, as well as defence procedures, are fully compliant with field and cycle requirements.

(2) Weaknesses:

1. The university lacks a clear and concise action plan on how to fulfil the demand of the society for the graduates in the field of hydraulic engineering.

2. The massive emphasis on research is not in a good balance with limited attention to basic and practical knowledge.

3. The final assessment of the subjects could benefit from a wider variety of the assessment methods that are duly adjusted to the type and character of individual subjects.

4. The opportunities for specialisation and internship are too limited in the programme.

5. The opportunities of students to personalise their studies need to be increased rapidly and substantially.

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

(1) Factual situation

The teachers (researchers) of the faculty, carry out research that is closely related to the EU and Lithuanian R&D priorities. The main research areas are: Physical and digital modelling of hydraulic and hydrological processes; Application of Nano and other technologies in water management and construction processes; Durability studies of hydraulic engineering and agricultural building structures and materials; Drainage and irrigation systems, Change of water balance elements; Water pollution and measures to reduce it, Restoration of damaged aquatic ecosystems; Management and sustainable use of water resources. All these directions are closely related to the ongoing studies.

At the beginning of each academic year, teachers adjust/update study course lecture notes, laboratory/practical work, visual material, case studies and discussions to include new scientific knowledge, their research outcomes.

The researchers of the faculty maintain relations with both Lithuanian and foreign science, studies and business partners. The main fields of cooperation are research (implementation of research projects, joint publications, organization of conferences and seminars) and studies (mobility of students and teachers).

All twelve members of the Teaching Staff presented at least three significant publications during the past five years. Members of the teaching Staff participated, during the past four years, in six International Research Projects, in one National Research Project, in one International Project with Economic Entities, in sixteen Projects with Lithuanian Economic Entities, and in eleven Projects with State Institutions.

(2) Expert judgement/indicator analysis

The expert panel acknowledges the fact that research and teaching staff of VMU are involved in R&D activities.

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

(1) Factual situation

Teaching staff at VMU integrate the accumulated experience and scientific innovations from their research activities into their courses. The main scientific innovations that are integrated into the studies are related to the application of Nano and smart technologies, digital construction, sustainable construction, modelling of hydrological and hydraulic processes, improvement of drainage and irrigation methods, sustainable hydropower, flood risk management, climate change. Students are also introduced to the scientific innovations of the field when preparing their final theses. During the period under review, the main focus of teachers was on the latest scientific achievements related to Smart Specialization and the European Green Course.

(2) Expert judgement/indicator analysis

The expert panel acknowledges the fact that research and teaching staff of VMU were involved in R&D activities, introduce the results of their research to the study program.

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

Second cycle students prepare final theses of a research nature, and the outcomes of the research are published in scientific or popular science journals and presented at conferences. During the activities of R&D projects, efforts are made to attract the most talented students to their implementation. In the period of 2017–2020, eight students were attracted to R&D activities.

(2) Expert judgement/indicator analysis

The expert panel acknowledges the fact that second cycle students are given the opportunity to get involved in research activities.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Second cycle students are offered the opportunity to participate in research projects.

2. Their projects and dissertations include research elements and approaches of the state-of-the-art.

3. The members of the staff are involved in research projects.

(2) Weaknesses:

1. Most students are not willing or are not available to travel abroad and gain from international agreements and opportunities.

3.3. STUDENT ADMISSION AND SUPPORT

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

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

(1) Factual situation

The admission requirements for the second-cycle studies are informative – there are two sections in the VMU webpage where entrants can find information about the admission requirements, description of admission procedure, programme-specific requirements as well as description of study programme (general description, study plan and short annotations about each study subject), career opportunities and so on. The admission to the second-cycle studies is facilitated by internal VMU's system for the admissions. Admission rules for the current academic year are publicly accessible on VMU internet page. Admission provides an entry into studies for graduates of other fields or college via possibility of additional studies. English information for international students is also present. Data on admission rates indicate a steady decrease from 2018. Currently, students are admitted only to part-time studies. The intake of students shows a steady decrease from 2017 to 2020.

(2) Expert judgement/indicator analysis

The possibility of additional studies provides access for colleges' students or students from other study fields, but HEI should reassess the formal admissions requirements – for example, students who graduated in the Fisheries study field can be admitted without additional studies. Also, students from virtually any other study field can be admitted if they complete additional studies. Flexible access to studies is not a negative practice by itself, but the current requirements are questionable, whether the procedure is not too loose.

Needless to say, VMU has positive ambitions regarding the intake of students, but the reality shows a decrease in admissions – although number of admitted students increased by 17 % in year 2018 (compared to year 2017), there is a massive decrease of the number of students in year 2019 (around 50 % of year 2018) which kept a slight decrease in year 2020 (around 12 % of year 2019). Various study programme marketing communication plans were provided to the evaluation team and after evaluating them, it is obsereved that VMU tries to attract entrants by implementing strategic communication. This communication though, is found to be general and does not target, as in this case, the under evaluation study programme.

Although the VMU's efforts to market the study programme in various (inter)national events are commendable and the bilingual nature of VMU's communication-information platforms may indicate a welcoming environment for international students, having only 1 international student during 2017–2020 requires reassessing the strategy of marketing.

Interviews with the SER group revealed that currently all students are in part-time studies. This decision was made based on students' needs. Thus, admission to full-time studies is not executed. Although being attentive to students' needs is a creditable virtue, it cannot be fixed and must be re-evaluated every year in order to make sure that the full-time option is still not necessary to implement.

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

VMU has regulations and practices regarding recognition of foreign qualifications, partial studies and prior non-formal and informal learning. The recognition of foreign qualifications is organized centrally in the International Cooperation Department that (if there is a need) consults with the Centre for Quality Assessment in Higher Education. The procedures for the recognition of non-formal and informal competences are described in VMU Study regulations, Description of the Procedure for Assessment and Recognition of Competences acquired through Non-Formal and Informal Education and VMU Description of Organization of Non-Formal Adult Education. Candidates from VMU can access the procedure of the recognition for free. VMU gained rights to carry out academic recognition for foreign qualifications from 2017, but the SER lacks data about the situation of this process. The procedure of recognizing part-time studies abroad is mostly successful, for the VMU ensures an agreed study plan before leaving for the exchange and there were no cases of non-reading partial studies during the period of 2017–2020.

(2) Expert judgement/indicator analysis

It is noteworthy that VMU has regulated its procedures and students are able to apply for them, but the SER provides very abstract information. It lacks factual data about recognition of foreign competencies as well as non-formal and informal learning. Thus, it may indicate that the university does not analyze or does not see the need to analyze this data. Although the process of recognition of partial studies seems to be in order, the same does not apply with the process of recognition of non-formal and informal learning – for the SER lacks data about it, this may indicate that university only has regulations on this topic, but does not publish it to students and applies it only in theory, but not in practice. Moreover, as it is regulated in the Description of the Procedure for Assessment and Recognition of Competences acquired through Non-Formal and Informal Education, the decision on the recognition is made by an appointed lecturer-expert. It is advised to have a collegial body of at least three members, because the current system is centered on decisions made by individuals which can be not as transparent as it should be.

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

(1) Factual situation

VMU has a substantial amount of agreements with partner universities (in total – more than 500) for exchange studies or internships, but it is quite difficult to find a filtered list of mobility opportunities for specific study programme – currently, there are only several countries provided as possible options in the page with information about study programme). Information about possibilities for academic mobility is actively provided by various VMU channels or events, for example individual consultations with Faculty's international relations coordinator, „VMU Erasmus days" event, VMU website, social media, e-mails. Due to the socioeconomic conditions for second-cycle students in Lithuania, there is a low rate of mobility among students during the analysed period – only one student of *Hydraulic Engineering* chose part-time studies during the academic year 2019–2020 and 2 students went for short-term mobility one week courses in 2017.

(2) Expert judgement/indicator analysis

In theory, students can study or do internships abroad, but as it is stated in SER, *Hydraulic Engineering* students rarely take these opportunities due to their life conditions (mainly, the biggest issue is work). On the other hand, short-term mobility may introduce positive changes to mobility dynamics, so this type of mobility should be taken into consideration by increasing partner institutions for short-term mobility as well as disseminating information about that.

During the interview with students, it was asserted that they receive substantial information about exchange opportunities (especially via e-mails), but it would also be highly advisable to structure VMU internet page in such manner, that students could filter potential foreign higher education institutions for their specific study programmes.

3.3.4. Assessment of the suitability, adequacy and effectiveness of the academic, financial, social, psychological and personal support provided to the students of the field

(1) Factual situation

The academic support system in VMU relies on several modes of action – posting information on VMU information channels (website, e-mail, „Facebook", etc.), individual consultations with lecturers regarding subject-related issues, periodic meetings with members of the department administration (as well as the members of Study programme committee) to discuss questions related to study programme or career opportunities and general consultations on social-academic questions with the administration of the department.

VMU has various means of financial and social support – several types of incentive scholarships (first-semester incentive scholarship for second-cycle students with admission score higher than 9,5; usual and increased incentive scholarships), social scholarship, one-off social or targeted scholarship; financial support for the students with special needs. Students in non-state funded places can apply for the extention for the study payment. Moreover, study

discounts of 50 % or 100 % are commonly practiced, which motivates and supports the students who did not get a state-funded place.

The information about VMU's services is accessible in Lithuanian as well as in English language in VMU website as well as social medias. University also provides students not only career consultations, but also shares announcements for open job positions. In addition, students can receive free-of-charge psychological counselling in individual meeting or online.

(2) Expert judgement/indicator analysis

The practice of meetings of students with the administration of the department and study programme committee members is praiseworthy and should be continued, but it would be beneficial to include at least one tutor / mentor in the department who would consult students with choices regarding their study programme decisions (for example, elective subjects). Although the second-cycle students are quite independent, an introduction of such staff members would help them with not only integration to university, but also with sustainable help during the whole study period.

It seems that VMU has sustainable financial support for students – the study discount practice is one of the most interesting forms of support, which motivates students to be academically progressive or supports students from vulnerable socioeconomic groups.

It is praiseworthy that students can receive free psychological consultation in need. This practice has to be continued. Nevertheless, SER provides a very institutional point of view and there is no analysis on how students rate these services (academic, financial, psychological support and so on). Quantitative and qualitative analysis of these services would help to evaluate the effectiveness and accessibility of VMU services and support system for the students.

3.3.5 Evaluation of the sufficiency of study information and student counselling

(1) Factual situation

Students receive information via university's social media, intranet, email and website. They also have the possibility to get counselling individually at the Dean's office, call or write an e-mail to a centralized VMU's Student Centre. Moodle platform provides students with all the information regarding their study programme. There is also a separate „Facebook" page („VDU Studentams") where various information directed to students is being posted regularly – the content of this page contains not only social-academic information, but also news about various (in)formal events, volunteering opportunities and other topics.

(2) Expert judgement/indicator analysis

Although the majority of second-cycle students are familiar with VMU, because they enter after graduating first-cycle studies from the same institution, SER indicated that there are also cases of freshmen admitted from other institutions. They can get information by individual consultations, but it would be more beneficial to create more sustainable and encompassing

integration of second-cycle freshmen by assigning a mentor (for example, a second or higher year student who is familiar with the VMU social-academic information and could consult his colleagues by peer-to-peer method) for freshmen groups. Also, there should be more thorough analysis on teachers' consultations, because not receiving any complaints about that does not mean that the process works flawlessly.

The „Facebook" page „VDU Studentams" is an interesting tool for targeted information towards the students, but the posts are only in Lithuanian. It would be good to introduce bilingual nature to cover information for international students as well.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Short-term mobility opportunities may welcome a positive increase in MA students' mobility rates.

2. The study discount opportunity enables easier access for students from vulnerable socioeconomic groups.

(2) Weaknesses:

1. Minimum admission requirements should be revised, including at least the need for additional studies for graduates who are not from engineering study fields.

2. International admission to full-time studies remains extremely low. The intake of Lithuanian students is also decreasing.

3. There is no practice evaluating VMU's services for students (academic counselling, financial support, social support, etc.) from students' perspective.

3.4. TEACHING AND LEARNING, 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

Second cycle studies of Hydraulic Engineering, at VMU are offered as full or part-time studies, on the principle of intensive contact work, that allows combination of studies with work activities. The training sessions include auditory work twice a semester for two to three weeks. Starting from 2019/2020 spring semester (quarantine announcement) the teaching process was held remotely, using the available computer technologies and platforms. The descriptions of study courses include different study methods for different courses as well as assessment methods applied.

Understandably, independent work is the dominant form of studying in combination with consultation hours via different means of communication and mainly it consists of laboratory and practical work, seminars, individual tasks and their presentation. Reaching learning outcomes is secured by monitoring consistent work, provoking active participation and providing feedback during the semester.

The accumulative system for the assessment of learning achievements, which is presented in the description of each study course, is broadly used, and the examination mark makes 30-60% of the final mark.

(2) Expert judgement/indicator analysis

The SER states that intensive contact work is chosen as the most appropriate method of study. This is based on the fact that most of the students are occupied with their work activities outside the University. Apparently, the teaching staff and students are satisfied with the results of using the remote teaching and learning methods based on the discussions the expert panel had. On the other hand, the teachers and students view of the laboratory and practical works, as noted during the discussions, is oriented towards on-site realization.

The analysis of the study course description shows that organization of students' work, through implementation of various study and evaluation methods, follows the programme goals, intended learning outcomes and the content of the course.

When it comes to the teaching, learning and assessment methods, as has been noted earlier in this section, the focus is on the independent work of students. This is a proactive approach in the process of organizing the study process as a whole, which is in line with the aim, basic goals and the general and subject-specific competences obtained by this second cycle study programme.

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

(1) Factual situation

The individual study schedule, which is regulated by VMU Description of the Procedure for Providing the Individual Study Schedule, is available for socially vulnerable groups and students with special needs, but there were no students for whom this opportunity would have been introduced during the evaluation period. 1 student per year (from the mentioned groups) studied in the period from 2018 until 2020.

There are different discounts for tuition or dormitory fees and scholarships are provided for these students.

Suitable physical adaptations for easier access to University's buildings for students with disabilities are put in place along with adequate equipment, elevators, toilets and furniture. Additionally, there are 3 workplaces in the University library, equipped with tools for students with visual impairments.

The University offers individual counselling, when necessary, in accordance to the students' individual needs.

(2) Expert judgement/indicator analysis

The SER presents institution legal procedures, various financial support, as well as continuous improvement of the learning environment in order to meet the unique needs and abilities of socially vulnerable groups and students with special needs. The students' view, as expressed to the panel, as far as they know, is, generally, a positive one.

3.4.3. Evaluation of the systematic nature of the monitoring of student study progress and feedback to students to promote self-assessment and subsequent planning of study progress

(1) Factual situation

There is a regulated comprehensive continuous monitoring procedure of students learning progress that consists of analysis of student enrolment and learning situation, reasons for the students' non-participation in examinations, evaluation of students and implementation of preventive measures to manage student failure and improvement of studies.

Students are also encouraged to make self-monitoring of their progress in studies and take part in each institutional procedure and activity regarding the learning progress. At faculty level, the vice-dean is responsible for performing the activities in relation to monitoring students learning progress that is carried out through the study information system *Studis* and the distance learning system Moodle.

A cumulative score criterion system for assessment of study achievements is used.

The survey procedures, as part of monitoring study progress, are regulated and used for survey conducted at the University on a study course, a survey on study practices, and a survey of graduates (Descriptions of Procedure of Feedback for Improvement of Quality of Studies).

Based on the analysis performed for the period from 2017 until 2020 (Table 4.1. – Self Evaluation Report, May 2021), the following can be concluded: the average progress of the students depends on the type of studies, as well as the study year. In general, the average progress of full-time students is higher than that of part-time students, and the results of studying (expressed in points) are lower in the first year, compared with the second study year.

The institution makes decisions on improving the implementation and administration of studies, upgrading teaching quality evaluation outcomes, planning student assistance, planning measures to improve the course and increase student progress based on all the monitoring procedures put in place (Checking the relation between student achievement and the results of teaching quality within the separate study course, presenting the results at the Dean's office, Council and Rector's office, appointing the Faculty employee responsible for monitoring the studies of un-progressive students).

(2) Expert judgement/indicator analysis

According to the discussions with the teaching staff, the expert panel team is pleased to note that there is a systematic and legally based approach in monitoring student study progress, providing assistance to students, as well as getting feedback regarding the quality of studies and areas which should be improved. Therefore, it can be concluded that there is a comprehensive and detailed procedure for monitoring which is realized at three different levels (individual, Faculty and University), at the beginning of each semester. It consists not only of observing and checking the learning results, but, if there is a need, assistance and even prevention of poor academic performance. In addition, in order to get feedback from different sources, for the quality of study process as a whole, surveys, interviews, roundtables, meetings, with different stakeholders are organized (Description of Procedure of Feedback for Improvement of Quality of Studies at Vytautas Magnus University).

The expert panel witnessed a range of questionnaires for surveys (survey of graduating students), as well as the questionnaires and results of graduating student's survey and students survey for evaluation of teaching and learning.

Although the team is in no doubt that the University has the foundations for developing the Quality Culture (bearing in mind that there are various procedures, questionnaires, regular surveys of stakeholders), there is no 'closing the loop' evidence, i.e., the institution did not present procedures for useful implementation of the obtained results from the quality monitoring process. Therefore, the suggestion is the system for Quality Assurance to be upgraded through developing a Quality Handbook, creation of course portfolios, revision of the questionnaires and taking measures on the basis of the results obtained during the survey.

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

(1) Factual situation

The University Alumni Club's main aim is to unite VMU alumni and maintain close relations with the University basically by sending newsletters with current information, organizing annual events, club meetings, active participation as consultants and experts in study programme committees, study quality assessment groups. Different Alumni Clubs at the faculty level organize their own activities.

The University monitors the employment and career of graduates using data from alumni surveys (one year after graduation), statistics provided by the Employment Service and statistics provided by the Government Strategic Analysis Centre (STRATA). Data on work experience, satisfaction of career situation, the usefulness of learning, the contribution to preparation for labour market is collected and analysed, and made transparent on the University intranet.

According to the survey results, the rate of suitable employment 12 months after graduation is 100%, (Table 4.2. – Self Evaluation Report), and the rate of satisfaction for the level of preparation for labour market is very high (Table 4.3 and Table 4.4 – Self Evaluation Report).

(2) Expert judgement/indicator analysis

Bearing in mind the University's presentation of employability and monitor the graduate career in the frame of SER, it can be concluded that it is focused on good relations with external social stakeholders. The above mentioned is proved true during the meeting with alumni, employers and social partners, speaking of their participation in choice of topic for the final thesis as well as its defence, taking part in creation of study programmes as consultants in study programme committee and study quality assessment groups.

In perspective, the University will get national statistical information about VMU graduates registered for a job search.

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

(1) Factual situation

The policies to ensure academic integrity, tolerance and non-discrimination are part of several University acts, such as: VMU Statute, The Code of Ethics of VMU, VMU Study Regulations.

Dishonest student behaviour is also treated by implementing a regulated procedure.

There is a procedure for plagiarism prevention that directs teachers and students on how to prevent plagiarism in written works (Plagiarism prevention procedures of VMU).

(2) Expert judgement/indicator analysis

The University's presentation of this indicator in the SER, is based on several legal acts. The analysis of these documents allows the conclusion that the University creates conditions, defines standards and principles, as well as identifies measures for ensuring academic integrity, tolerance and non-discrimination for all University's stakeholders.

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

(1) Factual situation

The University has acts where procedures for appeals and complaints of the study process are regulated and cases for which these procedures can be introduced (VMU Description of procedure for appeal investigation, Plagiarism prevention procedures of VMU, VMU Study Regulations). No appeals and complaints are noticed during the analysed period.

(2) Expert judgement/indicator analysis

In addition to the legal acts mentioned in the evaluation of the previous indicator, Vytautas Magnus University Regulations for Submission of Appeals regarding Evaluation of Learning Outcomes and/or Assessment Procedure, is adopted. This document defines in detail the submission of appeals, the structure of Appeals committee, its rights and responsibilities and decision-making procedures.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Study forms, teaching/learning methods, and performance assessment methods that encourage various groups of students to be active participants in the study field are identified.

2. The organized, legal based approach as an umbrella for observing and checking particular phases of the process for monitoring student learning progress is recognized.

3. Perceiving the necessary need for the involvement of internal and external stakeholders in establishing various policies and practices in the study process organization.

4. Proactive approach in processes for ensuring academic integrity, tolerance and non-discrimination, as well as student appeals and complaints.

(2) Weaknesses:

1. There is a need for national sources involvement regarding graduates from VMU who are searching for a job.

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

(1) Factual situation

The programme currently employs 4 professors, 8 associate professors, 2 lecturers, one of them a doctor, according to the list presented in SER Annex 3. Although, we can find in the list of the teaching staff of the field courses (Annex 3) only 3 professors and 7 associate professors. Most of the teachers carry out research in the field of Civil Engineering, which is related to the subjects taught.

The staff is in general well matched to the modules they deliver. They have wide and varied experiences in the hydro-technical construction industry and through pedagogical practice. Some of the staff continues to remain active in practice and this brings to the programme a high level of currency in terms of the evolving practices that are being used and developed.

Rational structure of teachers' workload allocating sufficient amount of time for their research and other activities in relation to the fulfilment of their functions in accordance with the procedure established by the University. Teachers provide information on the results of their work in annual activity reports, which are monitored by the University Department of Science and Innovation. The University has developed a system of financial incentives for teachers through salary supplements, the amount of which depends on the results achieved. Scientific activities, in particular the publication of high-level papers, are most encouraged.

The teaching staff is appropriately active in research and publication. The list of publications of teaching staff is presented in the SER Annex No. 3 in which more than 20 papers are listed, that are included in journals indexed in the ISI Web of Science. The employees actively participated in the 7 international research or study projects as well in 28 national projects (see SER Annex No.4)

(2) Expert judgement/indicator analysis

The number of teaching staff is sufficient to provide the study programme in the Civil Engineering field. More than 80% of teachers have a scientific degree. The scientific, didactic and professional qualifications and competencies of teaching staff are at an adequate level, to carry out this study programme at a suitable level.

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)

(1) Factual situation

The mobility of teachers is appropriate. Teaching staff have high possibilities to reach for teaching or internship exchange programmes: Erasmus+ teaching visits to VMU partnership universities in the EU as well as EEA/candidate countries (516 partner institutions) or outside the EU (99 partner institutions). In the 2017-2019 period, the mobility rate of all full-time teachers in the programme was even 55 visits (most popular countries Poland, Bulgaria, Czech Republic, Latvia, Finland). The main objective of mobility was to have lectures under the ERASMUS Teaching Mobility exchange programme, and participate in conferences and internships. In the 2017-2020 period, 20 teachers and researchers from abroad, mostly from Poland, came to the Faculty for lectures and internships.

The pandemic changed the situation on to activity of mobility negatively, but the University has implemented virtual mobility. They do not currently have examples of virtual mobility, but the protracted pandemic encourages "remote" mobility.

(2) Expert judgement/indicator analysis

The mobility of the teachers is very good. Staff is provided with opportunities to improve their qualifications in foreign countries under the Erasmus+ programme or other programmes.

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 eight groups of competences: higher education didactics competences, digital competences, research competences, management competences, foreign language competences, intercultural competences, subject-related competences and personal competences (regulated by the Description of Procedure for Professional Development at VMU, 2018). Teachers are encouraged to participate in training courses for professional development in the above-mentioned different groups of competencies. All teaching staff of the Civil Engineering field had professional development possibilities outside the University regarding their teaching and research interests during last years.

All teaching staff of the field courses participated in the professional development outside the University regarding their teaching and research interests during the last years. The University teachers can apply for support from their department, research clusters, Erasmus+ programme possibilities or use other potential opportunities. The last three years, three teachers participated in long-term international internships. VMU teachers can attend free foreign language study courses and three teachers of this study programme have taken advantage of this in recent years. Teaching staff actively participated in the courses "Active learning methods and student involvement in studies" and "Feedback to students: how can we

help them learn better?" which were organized several times a year, using the University's internal resources. The conditions to improve the competencies of the teaching staff are well organised at the University.

(2) Expert judgement/indicator analysis

The University provides suitable conditions to improve the competencies of the teaching staff and they successfully use it.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. The qualification and competences of teaching staff working in the programme are fully suitable for achieving the study results.

2. The University provides appropriate opportunities for teachers to participate in international exchange programs and teachers actively participate in them by increasing their didactic, scientific and other competencies.

3. The University has good conditions for the development of teachers' didactic skills, digital, research, management, foreign language, intercultural, subject-related and personal competencies, where teaching staff are found to use this function effectively.

(2) Weaknesses:

1. It is a matter of concern that only 33.3% of the lecturers work as full-time teachers of the current staff.

3.6. LEARNING FACILITIES AND RESOURSES

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

VMU provides sufficient material resources focused on ensuring the quality of studies in order to create favourable study conditions for students and teachers. The University has 222 auditoriums, which are used for study purposes. The size of the rooms varies from 5 to 150 workplaces, and for even larger groups of students, lectures can take place in the Great Hall, which has as many as 725 seats. Hydraulic engineering studies are mainly carried out in the 3rd building of the Agricultural Academy, where the faculty has 12 general auditoriums from 16 to 52 workplaces for lectures and seminars and equipped with modern equipment.

Practical work can be done in three computer classes, two of which are specialized - Geographic information systems with 22 workplaces, Geomatics with 15 workplaces, and with general applications - 15 workplaces. Most of these auditoriums and laboratories are equipped with specialized visual aids and equipment. The students are provided with specialized software freely available online but also with purchased license software, like MikeUrban, PLAFI, and Geoslope.

Although second cycle students no longer do basic laboratory work, they have access to 7 specialized laboratories (usually for first cycle students) where they can carry out individual tests for research work. Laboratories of Building Materials and Geotechnics, Hydraulics and Hydraulic Structures are especially popular among second cycle students. In addition to teaching laboratories, the students work together with teachers and researchers in the three scientific laboratories operating in the Faculty – Laboratory of Geomatics, Laboratory of Structures and Building Materials and Laboratory of Aquatic Ecosystems. All these laboratories are equipped with modern research equipment. The results of the research presented in the final theses of more than a third of the students are based on the tests performed in this laboratory.

The University Library provides a suitable environment for studies and research, ensuring effective services for members of the University community, and providing access to information resources necessary for studies, science, and professional qualification. A modern physical infrastructure of Library departments has been created in faculties and academies (5510 m2 in total) providing conditions for effective response to the research and study needs of academic units. Members of the University community can visit all departments of the library and use all its services, regardless of which faculty or academy they study or work in. The library has created a total of 770 working places for them, visitors can work with 237 Library or personal computers. Visitors also have an opportunity to access individual and group work rooms, workplaces for visitors with disabilities, discussion spaces and recreation areas. Opening hours for individual / group work can be booked in advance via the library website.

(2) Expert judgement/indicator analysis

The expert panel acknowledges the fact that facilities, infrastructure, laboratories and libraries are sufficiently equipped to support the needs of students and staff.

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

(1) Factual situation

Every year, VMU upgrades computers and purchases multimedia equipment according to the resource development plans submitted by the faculties and academies, which they prepare according to the study needs. About 20% of computers are renewed annually. Almost all computers are connected to a common network and have an Internet connection, VMU computer network security systems are constantly updated.

VMU uses a centralized system for monitoring and updating hardware and software, and only legal software is used in computer classes and other computerized workplaces. Every six months, the software is audited, updated or supplemented. The commercial software used in the study process is used with educational licenses and is available to students free of charge.

(2) Expert judgement/indicator analysis

The expert panel acknowledges that there is a plan for maintaining and updating the resources needed for academic and research activities.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. The facilities and infrastructure of the university are satisfactory.

2. The laboratories are well equipped.

3. The students have access to the laboratories, and they use them in both learning activities and their research thesis.

4. There is a plan for maintenance and upgrading of the equipment and facilities.

(2) Weaknesses:

1. No real weaknesses were identified. One can point out though that there is always a financial shortage for purchasing new equipment.

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

(1) Factual situation

According to the SER, the university foresees the use of the following bodies to manage and monitor the studies:

- Academy Council,
- Chancellor of the Academy,
- Faculty Council,
- Study Programme Committee (SPC),
- Dean of the Faculty and
- Head of the Department.

The self-evaluation system foresees the use of the SPC to evaluate and assess the academic performance of the programmes and if a problem is allocated by the committee to recommend to the Dean and the Directors of the institution with remedial actions.

The SER includes a set of references to documents that are related to the monitoring and management of the study quality. All documents are related to quality assurance (hereafter - QA) of studies. The documents can be also found on the University's website.

The file VMU-Procedure-for-Study-QA_June-02-2021-edition which is the "DESCRIPTION OF PROCEDURE FOR STUDY QUALITY ASSURANCE AT VYTAUTAS MAGNUS UNIVERSITY" was developed in accordance with the documents of the European Higher Education Area (EHEA), national and institutional documents governing studies: Standards and Guidelines for QA in the European Higher Education Area, Law on Science and Studies of the Republic of Lithuania, Procedure of the External Evaluation and Accreditation of Studies, VMU Statute, VMU Study Regulations and other legal acts.

After interviewing the QA Officer, Mrs. Izabela Savickienė, she was found knowledgeable. It was also confirmed that the SPC is the body that has control over all the QA procedures related to the study programme, while not all information was sent to the QA office.

(2) Expert judgement/indicator analysis

The university has a QA system in place that foresees the use of different levels of internal self-evaluation procedures through the use of different academic committees. According to the SER, the main committee that is responsible to allocate problems with the studies is the SPC. Having a single committee to directly monitor the studies can be problematic in the long run, since the system does not foresee a second party that will, independently from the SPC, perform checks and cross check the findings of SPC.

The SPC was found to be responsible to analyse the data and information collected throughout the year, where it measures the quality and success of the programme. This is found to be problematic since there has been no other party that is involved in the assessment and evaluation of the data. This can create situations where the SPC can be biased towards a specific situation, miss an occurrence or even disregard it due to the fact that by taking the proper actions it will generate additional work to the chair and members of the committee. For example, the suggestion of developing a final course report at the end of each semester for every course offered, a report that would gather all the assessment results and the survey results related to each course would require significantly additional work load to the teachers including the SPC committee members. In this case, the QA Unit should have the ability to promote this practice regardless the opinion of the teachers (including those in the SPC committee). The same applies proposing the development of a detailed course portfolio for each course, which also requires each teacher to invest more time towards their teaching responsibilities related to the monitoring and management of their courses.

What was noted during the visit was that the current setup with the senior administration, the SPC and the QA Unit seems to be dysfunctional, where the QA Unit was unable to recommend remedial actions and an overall strategy (in coordination with the stakeholders), which would help to alleviate the greatest weakness of the study programme (low student registration). This inability of the QA Unit to form and apply a strategy that would attempt to help with the low student registration numbers was clearly due to the current management style and method applied at the university by the current management that does not involve nor engage the QA Unit as they should. During the interviews with the senior management, there was no presentation of any solid strategies towards alleviating the problem, highlighting the issue in-terms of internal self-evaluation effectiveness.

Another document was provided to the evaluation team title "HSI_2_pak tobulinimo plano_2021-22", where the "Studijų programos tobulinimo planas" (Study improvement plan) was provided according to SPC. One would expect to see as number one problem to improve in the study programme is to attract more students, but this was not only not the case, the document had no mention of this significant problem. This finding reinforces the above comment on the dysfunctionality of the internal self-evaluation procedure.

The QA document was found to describe a general procedure related to the QA and the reporting and evaluations. Even though it is evident that the University is implementing a QA system and has a knowledgeable QA officer, it is recommended that a specific timed schedule of reporting should be developed that will not only foresee the evaluation of the studies, but also the resources and other academic or non-academic activities that relate to each study programme. All QA related activities should be found within a relevant QA handbook that the VMU should develop.

In order to have effective internal self-evaluation procedures, effective QA tools are also required. The survey in relation to the students' study experience was found to be extensive and rather long (around 50 questions with most of them asking graduates if they have a job or

if they are looking for one). On the other hand, the student survey on teaching and learning evaluation is found to be very short. Important questions like:

1. Did your teacher treat all students in a fair manner?
2. Was the teacher available during the semester?
3. Did the teacher offer office hours to consult you?
4. Was the teacher knowledgeable?

were not included in the survey so as to get the students' comprehensive feedback.

In addition, the Civil Engineering field has requirements in laboratory work and practicals that foresee hands on work. This should be included in the surveys (laboratories, computers, etc.), thus get the students' opinion on the facilities of the university. Conclusively, a complete re-structure of the surveys is recommended that will make them "user-friendly" and at the same time will be able to provide with a full-spectrum of data on the experience of the students.

In addition, the average semester survey participation percentage in all academic units is found to be extremely low (approximately 18%; see slide 3 of the results provided by the university). At the university level, the rate is around 20%, as it was also confirmed during the interviews. The university should establish a mechanics through which the students fill the surveys anonymously and make the internal self-evaluation procedure more effective based on feedback derived from an acceptable size of sample data. One simple approach is to establish a rule that after each final exam period, the students should take the relevant surveys in order to get their marks released to them. This will ensure the participation of all students. If the students' union does not agree with this, there should be numerous meetings with them to explain to them that this is as important as breathing air is to human beings. It is also important to state the significant benefit that will reflect directly or indirectly on them when the students provide their feedback to the university. Therefore, explain to them that this has nothing to do with free speech nor democracy. It has to do with the sustainability of the university and its reputation.

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

(1) Factual situation

The SER provides information on the decision-making that is performed based on surveys given to students. Three different surveys are described:

1. Teaching and Learning Evaluation
2. EXIT survey
3. Alumni survey.

The surveys are analysed annually by the SPC, where the committee looks for the following themes:

- programme and newest research trends,
- correspondence between the programme and labour market needs,
- demand of the programme,
- suitability and sufficiency of the programme resources,
- teachers' competence,
- students' progress,
- students' and teachers' mobility as well as other issues.

After discussing with the QA Officer of the University, it was also found that the teachers also filled out a relevant survey. This was also confirmed by the teachers during the interview. Social partners are also involved in the QA process and the improvement of the programme.

(2) Expert judgement/indicator analysis

During the interview with the students, there was none negative comments made by the students nor any suggestions towards improving anything related to the study programme. This might be due to the low number of students currently registered in the second cycle programme and their good relationship with their teachers or because the students are not involved in the internal self-evaluation procedure as deep as they should. Students said that they provide their feedback at the end of each semester through surveys, where they expressed their satisfaction with the way the university is treating them. They also said that they are proud to be students of the university, which is a good indication that their satisfaction is true.

The teachers said that they have to use their extra time to research due to the many hours that they have to teach. On the other hand, other teachers said that they teach and work in the industry at the same time. Therefore, the University should establish a system where the allocation of each teacher's time is implemented according to their contract (i.e. 40% teaching, 40% research, 10% administrative, etc.). The time allocation should also be monitored, where the University should verify if this is implemented or not. Monitoring teaching and administrative work is relatively easy, whereas research time can be monitored through the publication output of the teacher. A plan should be formed by each teacher with the help of their Head of Department at the beginning of each year, signed by the Dean, in order to set specific career objectives based on the state and requirements of each teacher. This should be sent to the QA Unit and the self-evaluation of the teachers in order to analyse the success of the plan implementation for each teacher. The senior management will be able to receive summarized information on the performance of the teachers directly from the QA Unit and not the SPC. This will allow the cross check of the information that is sent from the SPC to the senior management. Therefore, the involvement of the QA Unit in analysing different information related to study programmes, the students and the teachers should be reconsidered.

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

(1) Factual situation

The study field describes through the SER the QA process through which information is collected annually, where the Annual Programme analysis foresees an in-depth assessment of the findings. The evaluation team requested the provision of the latest Annual Programme analysis report, but did not receive one.

According to the SER, the main method through which the information is collected is the use of surveys given to students and faculty. The social partners are also involved in this procedure as it was confirmed through the interviews during the visit, where their involvement in developing the study programme's curriculum is direct. The faculty are also actively involved in the QA procedure, which is found to be a very positive component in the QA procedure currently active at the VMU.

It is also important to note here that, the SER states that the participation of students in surveys is very low, thus the statistical sample is not sufficient to form a basis on which reliable conclusions can be drawn. This was also confirmed from the survey results that were sent to the evaluation team. The VMU QA officer stated that the students' union is against mandating the surveys to students and that it should be done on a voluntary basis.

It is also stated within the SER that the results from the information analysis (referred to as results within the SER) are published online through the university's website. This is also a sign of good practice.

(2) Expert judgement/indicator analysis

The evaluation team was able to assess the QA procedures currently in place at the VMU by examining the SER and interviewing all related parties. The evaluation team was pleased to find that the VMU institute strives to implement the QA procures at the best of its ability, while the results from the feedback received are incorporated into the study programme.

During the interview and the closing remarks from the leader of the evaluation team, the Dean of the study programme stated thereafter that the new restructure of the study field and the new collaboration that was established will generate results into attracting new students to the programme. Even though the evaluation team supports the VMU views on the current student situation (extremely low numbers of students), it finds the fact that the University does not already have in place a strategy (through a relevant plan) to tackle this situation is a significant weakness of the study programme, thus a weakness of the QA structure that failed to address this so important issue in a timely manner. Having a study programme that is so valuable to the region, the government, the private industry and consequently to the social partners of the University, losing students and not acting immediately to remedy the situation is simply unacceptable. This situation can even lead to the full depletion of the student body, thus forcing the shutdown of the programme.

It is highly recommended for the VMU to develop and present with a plan that will improve the current situation of student registration. The plan should foresee marketing funds that will be used to actively promote the study programme, where the limitless advantages to future students should be marketed (immediate job allocation and security, study as you work scheme, "the private sector and the government wants to offer you a job yesterday… just study with us…" slogans, etc.). Private companies' testimonies and relevant official statements from social partners should be engaged in this marketing campaign that will aim to educate the young parents of Lithuania, opening their eyes to the opportunities that lie ahead their children's future.

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

Section 7.4 of the SER provides information related to graduate studies and the evaluation of different Key Performance Index areas (see Table 7.1 of SER). An analysis of the evaluation performed stating that the overall results are positive (3.8 out of 4.0 average).

The university provided additional information in relation to the surveys that are given to students to evaluate their studies and their instructors. Some advantages and areas of improvement are provided. It is recognized that employers' surveys are needed, where involving students and alumni during and after graduation requires to be reinforced in the near future.

One of the claimed advantages/strengths of the institution is:

"An effective and functional system of internal quality assurance of the study programme, which can effectively and timely influence the management and publicity of study quality."

(2) Expert judgement/indicator analysis

The evaluation team was pleased to find out during the interviews that the private companies' representatives and social partners think highly of the graduates of the programme. They stated that the graduates of this programme are high level and easy to work with and the only problem is that they do not have enough. Also, the students themselves stated that they feel proud to be a part of the study programme and they are studying at the VMU.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. There is a knowledgeable QA officer.

2. The social partners are actively involved with the QA procedures of the study programme which they highly value and would like to see increasing the graduate numbers.

(2) Weaknesses:

1. The QA procedures and the internal self-evaluation standards are not effective. There is no plan in place to solve the low number of student registrations problem that can lead to the actual closing of the programme that is much needed in the region.

2. The SPC committee was found to be unable to recognise the low registration student numbers problem. It is clear that the SPC, which is the sole responsible in monitoring and measuring the quality of the programme, does not have the ability to implement the internal self-evaluation standards alone, where it failed to report the most important issue within the Study program improvement plan 2021-22.

3. The QA Unit is not involved in the analysis of all the study programme's related data nor is allowed to propose strategies in improving the study programme since it does not have access to the results.

IV. EXAMPLES OF EXCELLENCE

Core definition: Excellence means exhibiting exceptional characteristics that are, implicitly, not achievable by all.

N/A

V. RECOMMENDATIONS

Evaluation Area	Recommendations for the Evaluation Area (study cycle)
Intended and achieved learning outcomes and curriculum	Develop a clear and concise action plan on how to increase the number of graduates. Increasing the opportunities of specialisation, internship and personalisation of studies. Set reasonable restrictions on admission for BSc graduates without an engineering background.
Links between science (art) and studies	Find ways to involve students in international mobility programmes.
Student admission and support	Critically review admission requirements. Periodically review the (no-) need for admission to full-time studies. Work proactively on short-term mobility opportunities for second-cycle students.
Teaching and learning, student performance and graduate employment	Upgrading the system for Quality Assurance through developing a Quality Handbook, as well as taking measures on the basis of the results obtained during the survey. The University has to imbed the national statistical data into the process of analysing and reaching decisions about graduates' employability, evaluation and tracking the graduate's career.
Teaching staff	The University should find methods and take actions in increasing the number of full-time teaching staff.
Learning facilities and resources	Continue to improve the Learning facilities and resources.
Study quality management and public information	Define a realistic and effective strategy to attract students to the programme. This should be done in collaboration with the QA Unit. If the management does not utilize the QA Unit sufficiently, then there is a problem in the management and the way they handle significant problems that can lead to the closure of the programme.

VI. SUMMARY

Main positive and negative quality aspects of each evaluation area of the study field of Civil Engineering at Vytautas Magnus University:

The evaluation team found the programme to be well structured and its presence in the region is significant, providing the much-needed engineers. By assessing the programme and the stakeholders' opinion about the programme, the evaluation team finds that the level of studies from this programme are high and up to standards.

It is with great regret though that the evaluation team found the QA Unit and specifically the management in a lethargic state when it came to evaluating the significant problem of low students' registrations. There were no actions taken nor a plan in place so as to try remedying the situation, a fact which was found to be very concerning. If this issue is not tackled immediately, this can lead to the closure of the programme due to no students in the near future. For this reason, the evaluation team would like to re-evaluate the progress and status of this programme in 3 years and not longer than that.

Expert panel signatures:

Assoc. Prof. Dr. George Markou, (panel chairperson), academic