CENTRE FOR QUALITY ASSESSMENT IN HIGHER EDUCATION

EVALUATION REPORT

STUDY FIELD OF ENVIRONMENTAL ENGINEERING

AT KAUNO MIŠKŲ IR APLINKOS INŽINERIJOS KOLEGIJA

Expert panel:

1. **Prof. dr. Edoardo Patelli** (panel chairperson), member of academic community;
2. **Prof. dr. Tone Merete Muthanna,** *member of academic community;*
3. **Prof. dr. Toomas Tamm,** *member of academic community;*
4. **Prof dr. Dalia Štreimikienė,** *representative of social partners;*
5. ***Tadas Paukštys,*** *students' representative.*

Evaluation coordinator – Dr. Ona Šakaliene

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Study Field Data*

Title of the study programme	***Hydrotechnical Engineering***
State code	6531EX032
Type of studies	Higher education college studies
Cycle of studies	First-cycle studies
Mode of study and duration (in years)	Full-time (3 years) Part-time (4 years)
Credit volume	180
Qualification degree and (or) professional qualification	Professional Bachelor of Engineering Sciences
Language of instruction	Lithuanian
Minimum education required	Secondary education
Registration date of the study programme	23-04-1991

** if there are **joint / two-fields / interdisciplinary** study programmes in the study field, please designate it in the foot-note*

Title of the study programme	***Landscape Design***	***Land Management***
State code	6531EX033	6531EX034
Type of studies	Higher education college studies	Higher education college studies
Cycle of studies	First-cycle studies	First-cycle studies
Mode of study and duration (in years)	Full-time (3 years) Part-time (4 years)	Full-time (3 years) Part-time (4 years)
Credit volume	180	180
Qualification degree and (or) professional qualification	Professional Bachelor of Engineering Sciences	Professional Bachelor of Engineering Sciences
Language of instruction	Lithuanian	Lithuanian
Minimum education required	Secondary education	Secondary education
Registration date of the study programme	30-08-2002	31-08-2009

** 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 expert panel on 10th of December 2021. The visit was organised online using video-conferencing tool (Zoom).

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Prof dr. Dalia Štreimikienė, *Lithuanian energy institute (Lithuania);*

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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.	LIST OF SUBJECT TEACHERS OF THE STUDY FIELD HAVING WORKED AT LEAST 3 YEARS AND THEIR MOST SIGNIFICANT WORKS PREPARED DURING THE LAST 5 YEARS
2.	

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

Kauno Miškų ir Aplinkos Inžinerijos Kolegija (subsequently KMAIK, the College) is the state higher education institution of the Republic of Lithuania, which dates to 1927. In 2002 Kaunas higher forestry school was granted the status of the higher education institution. The institution organizes and pursues higher education College studies, awards higher education qualification, conducts applied scientific research, pursues works of experimental development and applies their results in practice as well as develops creative activity and culture, fosters values and traditions of academic society.

KMAIK provides qualifications in forestry, horticulture, hydrotechnical engineering, real estate cadastre measurements, land management and landscape design. In October 2020, there were 848 students from Lithuania and 6 international students enrolled.

In KMAIK there are three programme in Environmental Engineering study field (E03) SP: Hydrotechnical Engineering (state code 6531EX032), Landscape Design (state code 6531EX033) and Land Management (state code 6531EX034) as well as one in the study field of Measurement Engineering (E04) – Real Estate Cadastral Measurements (6531EX031). Forestry study field (I03) – Forestry (state code 6531IX001) and Agricultural study field (I01) – Horticulture (state code 6531IX005). Study programmes of Hydrotechnical Engineering, Land Management Forestry and Horticulture are unique as they are not implemented by any other Lithuanian Colleges

Study programme Hydrotechnical Engineering has been implemented in KMAIK since 2002 and accredited for three years. The Study programme Landscape Design was implemented in 2002 whereas Land Management SP has been implemented from 2004 and accredited for 6 years (in 2013).

II. GENERAL ASSESSMENT

Environmental Engineering study field and **first cycle** at **Kauno Miškų ir Aplinkos Inžinerijos Kolegija** 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	4
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	3
	Total:	22

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

III. STUDY FIELD ANALYSIS

3.1. INTENDED AND ACHIEVED LEARNING OUTCOMES AND CURRICULUM

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

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

(1) Factual situation

Three study programmes of the Environmental Engineering study field, the first cycle are implemented in KMAIK: Hydrotechnical Engineering, Landscape Design and Land Management. After studying, a Professional Bachelor's degree in Engineering sciences is awarded. All three Study Programmes (SPs) in the Environmental Engineering study field are highly different in their content and awarded competences: the SP Hydrotechnical Engineering prepares specialists to work in the area of water management engineering, renewable resources. The SP Landscape Design is intended to prepare specialists for working in the field of landscape management, Land Management SP – in the areas of land surveying and territory planning. The SPs in Hydrotechnical Engineering and Land Management are unique because any other Lithuanian university of applied sciences cannot offer them.

Anticipated learning outcomes of the aforementioned SPs (Self evaluation report (SER) (Tables 2–4)) were developed regarding Bologna process provisions, i.e. it is intended to assure study quality, develop students' competences, complying with rapidly changing labour market needs. Aims and anticipated learning outcomes of Environmental Engineering study field S's match employers' expectations, conform to general and specific requirements of study programme implementation, defined in Subject Benchmark Statement of Engineering sciences. Anticipated learning outcomes of SPs are related to professional activity (after studies an individual is awarded a qualification necessary to deal with professional issues), they conform to qualification level VI requirements of the first study cycle, listed in Lithuanian qualification framework and study cycle descriptions.

Graduates of Environmental Engineering study field offered by KMAIK acquire essential knowledge concerning applied tools and methods based on research findings are able to identify, formulate and solve environmental engineering problems by adjusting to regular and hardly predicted changes, to plan the activity regarding the anticipated aims, to analyse and record activity results and provide reports for coordinating individuals, to adjust activity with regard to analysis of activity results and specialists recommendations, to implement projects regarding change of professional activity, to develop cognitive competences.

Learning outcomes of all three Environmental Engineering SPs are related to national and societal needs listed in the Long-term Development Strategy of the State, which pays significant attention to environment protection, agriculture development, reasonable land use, development of land market, preservation of country's natural resources and landscape as well as development of land use structure. In addition, learning outcomes are formulated regarding the aims of Lithuania's Progress Strategy „Lithuania 2030", which states that "natural resources must be used reasonably, environment pollution must be reduced, national

awareness developed, sustainable consumption and responsible attitude towards economic development encouraged".

(2) Expert judgement/indicator analysis

There is a very good alignment of the study programmes with the strategic vision and College sustainable development plan, Industry 4.0, Lithuania 2030 and sustainable water policy. This very strong and clear alignment ensures that the study programmes are aligned well with the needs of the society.

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

Having evaluated the requirements for receiving a professional Bachelor's degree in engineering sciences, and following the learning outcomes of the Engineering study area's group listed in the Subject Benchmark Statement of Engineering, the study programme committees have upgraded the SPs aims and objectives in accordance with specific requirements of the Environmental Engineering study field.

The primary aim of all study programmes is to prepare high qualification, broad erudition specialists of the studied field who have Environmental (general) engineering and adjacent fields knowledge, are able to identify, formulate and deal with specific issues, to respond to business environment, technological changes and needs in a flexible way. Moreover, the other aims are to develop students' world outlook, encourage critical thinking, active citizenship, awareness of globalization processes and ability to act in intercultural space; to develop a creative, business-like specialist able to work in a team and make independent decisions as well as aspiring to develop in his/her professional activity throughout all life. The detailed aims of each SP are provided in the sub-section 1.4 of the SER.

Aims and learning outcomes of SPs within the Environmental Engineering study field are related to the mission formulated in KMAIK Strategy 2030: „By adopting advanced worldwide-accumulated experience, to prepare specialists of higher professional education aiming to satisfy the needs of the country's forestry and environmental engineering sectors. This mission must ensure a modern study process in compliance with European standards providing lifelong learning possibilities; to elaborate new technologies in forestry, environmental engineering and to carry out applied research; to raise public awareness on environmental, cultural and national issues."

Aims of Environmental Engineering study field SP are related to strategic KMAIK aims: „To pursue studies providing higher College education and qualifications of higher education institutions satisfying the needs of country's forestry and agriculture as well as environment and surveying engineering sectors and matching the current level of science and modern technologies; „To develop applied research in the sectors of forestry, agriculture, environment and surveying engineering relevant to the region, to consult interested individuals, administration and economy subjects; To provide conditions for individuals to develop the acquired knowledge and skills; To develop society susceptible to knowledge and culture, able to work in conditions of rapid technological advancement."

Anticipated learning outcomes of the SPs are elaborated and compatible with the defined aims. They provide the integrity of essential knowledge and practical skills. SP learning

outcomes are based on general and fundamental science knowledge crucial to engineering and providing the main engineering skills and competences.

(2) Expert judgement/indicator analysis

The panel finds the study programmes aligned with the HEI strategy which gives the best possible starting point for the development of a solid and strong program. The committee is impressed with the clear vision in the alignment of the study programmes both from a societal and HEI respect.

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

(1) Factual situation

The study plans of KMAIK's Environmental Engineering are provided in Annex 1 of SER. All three SPs are implemented following the study areas approved by the LR Government. The volume of SPs within the Environmental Engineering study field is defined by LR Law of Education and Studies and Description of General Requirements for Study Implementation as well as Subject Benchmark Statement of Engineering. Study volume is calculated in ECTS credits, which measure learning outcomes and students' workload. The volume of all KMAIK's study programmes is 180 ECTS credits. The volume of one academic year for full-time studies is 60 ECTS credits (1600 hours) and 45 credits (1200 hours) for part-time studies. The total number of SP hours is 4800. An academic year consists of two terms – autumn and spring. SP volume in credits is indicated in SP descriptions. University Environmental Engineering study field SPs meet the approved "Description of Requirements for General Study Implementation" (SER, Table 1). 133-141 credits are allocated to reach SP learning outcomes with regard to SP. The total volume of intended practical training in all SP constitutes 30 credits; practical training (practice and contact practical training) makes up at least one-third of SP volume. Nine credits are provided for the Professional Bachelor's Graduation Thesis (GT). Elective studies defined by the College or selected by the student (deeper studies of the same field or other field subjects and development of other general skills) are allocated 21-27 credits. Anticipated SP learning outcomes, study volume in credits and volume of contact teaching are the same disregarding the study mode.

(2) Expert judgement/indicator analysis

The programmes comply with the relevant rules and regulations as listed in the SER and Table 1 in the SER. The ECTS aligns with the EU standards and the workloads are clearly specified.

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 aim of Hydrotechnical Engineering SP is to prepare high qualification, broad erudition specialists of hydrotechnical engineering who have general engineering and adjacent field knowledge, are able to identify, formulate and deal with the issues of water management as well as to apply recent technologies in works of hydrotechnical structures and system construction, repair and maintenance and to respond to business environment, technological changes and needs in a flexible way.

Partial aims of the study programme: The first partial aim (1) – „to develop students' world outlook, encourage critical thinking, active citizenship, awareness of globalisation processes and ability to act in intercultural space". The second partial objective (2) – „to develop a qualified specialist of hydrotechnical engineering, who is able to apply the knowledge of general engineering and related fields to deal with technological, engineering and technical issues, to organise engineering activity of water management seeking reasonable interaction between nature, human being, equipment and technological factors". The third partial objective (3) – „to develop a business-like specialist aware of his/her rights and obligations, able to work in a team and make independent decisions as well as aspiring to develop in his/her professional activity throughout all life". The specific anticipated outcomes are listed in Table 2.

The aim of Landscape Design SP is to prepare high qualification and broad erudition specialists of Landscape Design who have knowledge of environmental engineering and adjacent fields, able to independently analyse the factors affecting the landscape, to design and implement landscape design projects, aesthetically manage various purposes green areas, to respond to business environment, technological changes and needs in a flexible way.

Partial aims of the study programme: First partial aim (1) is „to develop landscape design students' world outlook, to encourage critical thinking, active citizenship, perception of globalisation processes and ability to act in intercultural space". Second partial aim (2) – „to develop a qualified specialist of landscape design, able to apply the knowledge of general engineering and adjacent fields to deal with engineering, technological and technical issues, to analyse and implement landscape design projects, to organise arrangement and maintenance of green areas, to grow ornamental plants by applying modern technologies and principles of sustainable environment". Third partial aim (3) – „to develop a creative, business-like and versatile-thinking specialist able to work in a team, to make independent decisions, seeking to improve in his/her professional activity throughout the life". The links between Landscape Design study programme partial aims, anticipated learning outcomes and study subjects are provided in SER, Table 3.

The aim of Land Management SP is „to prepare land management specialists of high qualification and broad erudition, who have knowledge of general engineering and adjacent fields, are able to identify, formulate and deal with environment development problems, to take into consideration sustainable planning when conducting the works of territory planning, land management and administration, to respond to business environment, technological changes and needs in a flexible way."

Partial aims of the study programme: First partial aim (1) – „to develop world outlook of land management students, to encourage critical thinking, active citizenship, perception of globalisation processes and ability to work in intercultural space". Second partial aim (2) – „to develop a qualified specialist of land management able to conduct works of territory planning management and administration by applying sets of cartography and national spatial data, able to store, systematise, update real estate cadastre data applying modern technologies, able to establish a business enterprise". Third partial aim (3) – „to develop a creative, versatile-thinking specialist able to work in a team, to make independent decisions, seeking to develop in one's professional activity."

Further the SER describes the study methods and assessment as used across the three programmes.

(2) Expert judgement/indicator analysis

The committee finds a good alignment between the anticipated outcomes and the learning aims and outcomes. The SER provides a detailed overview of each study program giving a complete and thorough overview.

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 SPs in the Environmental Engineering study field pursued by the College were developed by combining general College study subjects as well as study field and elective subjects in order to consistently develop defined general and specialised competences.

The volume of SP programmes in the College is 180 ECTS credits. The volume and structure of SPs are defined by the Law on Education and Studies and General Requirements for Studies Implementation of the Republic of Lithuania. The total volume of the study programme is 4800 hours. Studies are pursued in full-time (FT) (duration 3 years) and part-time (PT) (duration 4 years) study modes. The volume, structure, study curriculum and outcomes of both study modes do not differ (they are the same). All SP study plans designed in the form defined by the College are provided in Annex 1 of the SER.

The structure of each SP was designed regarding its aims, the competences to be developed and anticipated learning outcomes. When studying full-time, a student can acquire 60 ECTS credits per year: during the term no more than seven SP subjects can be chosen. Studying part-time, a student can correspondingly acquire 45 credits per year: no more than 5 SP subjects are studied during the term.

Study subjects are divided into terms by maintaining equal studying load and logical consistency so that students could gain the necessary background for subsequent studies. All study subjects, their volume and study sequences in terms are provided in the SP study plan.

Engineering is a targeted activity based on results of scientific research and accumulate practical experience, by which one seeks to create tools for using natural resources and phenomena, to develop systems to satisfy people's needs, to improve the already designed technologies, processes, services, to design their installation, to plan and organise the activity.

In the SP of Environmental Engineering study field pursued by the College, a complex consistent model of students' general theoretical, special and practical competence development is applied. In the SPs, special attention is paid to the balance between theoretical knowledge and practical experience by estimating the significance of the latter as well as for the development of skills to deal with the issues of professional activity. By implementing SP in Environmental Engineering study field, theoretical lectures, practical tutorials, and practice (training, professional), oriented towards the same learning outcomes, are grouped by maintaining logical sequence as well as establishing and keeping clear links between the studied subjects.

Study subject groups of all threes Environmental Engineering SPs are subdivided by the content of the studied subjects: general College subjects (15 credits) constitute around 8 %, field study subjects – 74-78% (133-141 credits), whereas elective study subjects – 12-15 % (12-27 credits) of the whole volume of each SP (Table 1). Nine ECTS credits are provided for the defended Graduation Thesis (GT) while practical training (educational, training, professional activity) is granted 30 credits (80 academic hours). Practical training in KMAIK's

study programmes of the Environmental Engineering field constitutes 36.5-44.0 % of all SP volume. All structural SPs'parts complement each other and allow reaching the intended learning outcomes.

(2) Expert judgement/indicator analysis

The study programmes follow a clear structure with several opportunities for students to align their course plans with their specific interests. There is a good mix of subject groups organised in a logical fashion.

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

College students have a possibility to individualise their studies regarding personal learning objectives and anticipated learning outcomes. The list of subjects defined by the College and student's elective subjects is included in the curriculum of every SP. In each course, students individually select elective subjects, which they want to study to reach their objectives. Elective subjects are designated for the development of general skills, deeper studies of the same field, subjects of the other field, etc. The volume of elective study subjects is 21-27 credits (SER, Table 6).

Students of Environmental Engineering study field within the period 2017-2020 could select general study subjects (Philosophy Essentials, Professional Ethics, Communication Psychology, Social Psychology), elective study field subjects (for example, Engineering Systems of Building, Water Business Economics and Management, Special Drainage, Spatial Data Sets, Basics of Organisation, Engineering Geodesy) and elective.

Students can freely select a 12-credit branch of the study programme (specialisation) from annually proposed alternatives and study the subjects aimed at enriching the knowledge in the selected branch. Hydrotechnical Engineering SP proposes three branches (Internal engineering Systems in Buildings; Field Engineering Systems, Energetics of Renewable Resources), Landscape design SP – three branches (Landscape Design; Cultivation of Ornamental Plants, Urban Landscape Management), Land Management SP – two branches (Land Administration, Territorial Planning).

Following KMAIK's Study Regulations, students are provided with the possibility to study according to the individual study plan. After a motivating application, a student can select more study subjects than is indicated in the study plan and accumulate more than 180 credits. Individual study plan, meeting student's needs, which indicates study subjects and their arrangement, after SP Committee's consent, is approved by the head of the department.

Students can individualise their studies by participating in international exchange programmes, part-time studies or internships in higher education institutions abroad. Students have Final Practice of Professional Activity independently in a selected enterprise, the activity of which is related to their studied professional specialisation. Students independently choose topics for their GT from a lecturer's suggested list or provide their suggestions and formulate topics of the GT by combining the objectives of their study programme with personal fields of interest. In this way, students are provided with good conditions to individualise the structure of SP, taking into account personal learning goals and intended learning outcomes.

(2) Expert judgement/indicator analysis

There are many opportunities for the students to personalise their study track with courses and subjects that interest them. It is important to balance the number of courses with the total number of students to some extent in order to create good learning environments and manageable workloads for the faculty.

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

(1) Factual situation

Subject benchmark statement of engineering states that „the first-cycle engineering area studies are completed by publicly defended Graduation Thesis (project)". Preparation, defence and assessment of GT at KMAIK is organised following the LR Law of Education and Studies, Lithuanian Qualification Frameworks, Description of Study cycles, Subject benchmark statement of engineering, General Requirements for Study Implementation, KMAIK Regulations, and subsequently prepared Description of Graduation Thesis preparation, defence and assessment procedure, which is announced in KMAIK's Moodle system.

In all College SPs the volume of the GT is 9 credits; it conforms to requirements listed in „General requirements for study implementation". GT is independent student's work of applied or research type. When preparing and defending it, a student is supposed to demonstrate that he/she has accumulated enough knowledge, acquired necessary skills and appropriate experience of analytic and design work in a certain field, is able to solve the arising problems and has reached the anticipated learning outcomes of the programme. When preparing GT, a student is supposed to show theoretical preparation, independently formulate the aim, creatively and thoroughly analyse the objectives, deal with applied tasks of the field, demonstrate that he/she is able to apply the acquired competences and is ready to be awarded professional Bachelor qualification degree in engineering sciences.

Procedures of GT preparation and principles of forming the Committee and organisation of the GT defence are regulated by „Description of Graduation Thesis preparation, defence and assessment procedure". This document is observed by department administration, students, GT supervisors, reviewers, qualification committee members. Detailed requirements for GT's of all Environmental Engineering study field SP are provided in „Methodical guidelines of Graduation Thesis preparation", the recent version of which is stored in the – College Moodle system. Methodical guidelines are annually revised and on demand upgraded by the committee of each SP.

Processes of preparation and defence of Professional Bachelor GT in Environmental Engineering field SP's are coordinated by heads of responsible departments, who inform students about stages of the GT preparation. The possible topics of GT's in accordance with scientific interest are proposed by subject lecturers. According to the selected SP branch or intended work type, topics can be proposed by students themselves. They can choose the topics at the end of the second (PT) or third (PT) year during the spring term, no later than one year until the end of studies. GT topics selected by students and the suitability of their supervisors are discussed in meetings of departments; the arranged lists of GT topics and supervisors are approved by the order of the director.

Students prepare GT's following „Methodical guidelines of Graduation Thesis preparation" independently. GT supervisor consults students about methodical issues, discusses with students the data of its research or surveying, the selected analysis methods, project

proposals, applied technologies, formulation of conclusions, and makes suggestions for thesis improvement. If needed, GT supervisor suggests appointing GT consultants who help students analyse the topic in more detail.

When preparing GT, a student must observe academic integrity requirements, which are defined in University College Code of Academic Ethics and Description of Plagiarism Prevention System.

Students of Hydrotechnical Engineering SP in their GT's analyse the issues such as reconstruction of reclamation structures, evaluation of hydro-unit technical state, development of sewerage networks, comparison of geothermal heating technologies, renovation of a residential house, engineering systems of a detached house, etc.

Students of Landscape Design SP in their GT's analyse the topics like the project of farmstead landscape design, analysis of nursery plant assortment, investigation and evaluation of green areas, evaluation of seedlings sanitary state in a nursery, plant state assessment, analysis of woody ornamental plant assortment in online trade in Lithuania, landscape rearrangement projects, technology and display of rose growing, environmental projects, etc.

Land management SP students in their GT's analyse the following issues: qualitative assessment of territory planning, verification of land plot cadastral data and analysis of errors; land consolidation projects and analysis, investigation of land plot market, development and analysis of land plot formation and re-arrangement projects, analysis of orthographic map development in Lithuania, analysis of abandoned lands, analysis of statistical land data, etc.

(2) Expert judgement/indicator analysis

The procedure and workflow of the thesis work is clearly laid out in the SER. The process appears open and well structured. The main research topics are clearly presented for each study program, from which the student can freely choose. The assessment of the thesis and scores should be revisited to ensure that the full extent of the grade scale is used in the assessment of the thesis.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Strong and very well aligned aims and learning outcomes of the study programmes with society and College strategies. It is also showing clear links to the UN Sustainable Development Goals, EU strategy and College strategy to the study programmes aims and learning outcomes.

(2) Weaknesses:

The minor shortcomings:

1. The process of handling student complaints in an open and unbiased manner is not clearly laid out.
2. It is not sufficiently described how the higher aims and learning outcomes are obtained from the specific outputs of the SP.

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

Applied scientific activities are implemented by HEI in agreement with the College strategic planning documents. In particular, the applied projects provided by industry and agencies show the recognition of the College in agriculture and engineering.

Applied research is generally conducted including students and social partners. There is a sustainable research income from commissioned work in the years 2017-2020 commissioned by e.g. Kaunas city municipality and for the private sector.

The dissemination of scientific knowledge in the 2017-2020 period was of circa 80 events including field days and seminars. 50 training sessions were organised and 20internships for lectures in other organisations.

The HEI is also involved in the ERASMUS+ funded project „GLOCAL" – innovative training of future engineers responding to problems of contemporary cities and other International collaborative projects (INTERREG). This gives an opportunity to improve the mobility of students and staff.

There is a good alignment of the proposed programmes and current research context and needs for science and technology. There are some training courses in the area of data analytics, industry 4.0, digital water and their need is clearly shown by the UN reports and the Sustainable development goals (SDG) adopted by Lithuania in 2003 and the subsequent Water Sector Development Programme 2017-2023 but not translated into relevant courses and activities.

(2) Expert judgement/indicator analysis

The programmes provide general and strong background knowledge (e.g. in applied mathematics and statistics) balanced by a number of specialised skills including Building Information modelling (related to Industry 4.0), Water Management, Information Technologies and Geographic Information Systems (related to the digital aspect of the research).

The research outcome is modest but in line with the expectation for a College institution (49 lectures producing 10 papers in 4 years). Study dissemination is quite modest. Lecturers of field study subjects are members of international professional associations. Topics of conducted scientific research are closely related to the subjects taught and, therefore, lecturers directly render their knowledge, experience and innovations to their students, which is crucially important in order to assure SP quality.

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

(1) Factual situation

Three articles were published in scientific journals with ISI WoS citation index in 2019-2020. 13 articles were published in the same period in other scientific peer-reviewed publications and 11 in popular science magazines.

KMAIK organises annual international conferences, namely „Gamtotvarkos aktualijos"/„Relevant Issues of Environment Management", and „Kūrybiniai procesai želdynuose"/„Landscape Creation Process", which establishes conditions for lecturers to share their experience with scientists from Lithuania and abroad.

(2) Expert judgement/indicator analysis

There is a close cooperation between SP lecturers and social partners allowing the lecturers to be aware of the requirements of the industry. However, there is limited evidence of knowledge transfer between the lecturers and the social partners. This is also reflected in the very limited inclusion of the latest developments in science and technology in the courses.

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

(1) Factual situation

Students take Research Methodology and they get in contact with scientific activities during the GT but only a small number of the students (4 - 5 students per year). Although not all the KMAIK students are directly involved in research activities, the possibility to attend cofereces, seminars and field days is offered to all students. During the COVID-19 pandemic those activities were offered virtually. Students also participate in practical activities and are involved in annual scientific conferences organised by KMAIK.

The KMAIK management supports students, who participate in research activity, by awarding promotion grants.

(2) Expert judgement/indicator analysis

The panel finds a limited participation of students in research activities and first-hand experience in applied science projects. However, the opportunity to be involved in research activities is offered to all students.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Good relevance of the proposed study programmes with the need of Lithuania and skilled engineers in general.
2. Good balance between core knowledge skills and specialised training covering recently. development of science and requirement to master modern technologies.
3. Inclusion of personal and social skills including Professional Ethics, Social Skills.
4. Erasmus+ allows all staff members to go abroad.

(2) Weaknesses:

1. Not all the students seem to be involved in research activities or have the possibility to attend conferences.
2. The most recent scientific and technological developments are not included in the Curriculum.
3. Dissemination of research activities is limited and often non-inclusive.

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

Students' admission to KMAIK SPs complies with the legal acts of the Republic of Lithuania Minister of Education, Science and Sport of August 30, 2017, No V-661 and February 04, 2020, No V-148, and the resolution of the conference of Lithuanian Universities of Applied Science directors of November18, 2019 No V-8.

The Minister of Education, Science and Sport every defines the minimum admission requirements and since 2018, the entry requirements requires to pass at least one state exam.

The ammision is based on a competition score calculated from maturity exam and year marks multiplied by weight coefficients (SER, Table 10). The College also define the minimum competitive score and it is constantly increasing seeking to accept students with deeper background knowledge.

The SER reported that the College received in average 480 applications to study in SPs with the following distributions: Hydrotechnical Engineering selected by 27 % , Landscape Design by 32 % and Land Management by 41 % applicants. Accepted students are the 19.1 % of all applicants with any priority. The SER stated that „the main reasons why applicants do not get an invitation to study are unsatisfying minimum competitive score and/or not meeting the minimum learning requirements, i.e. maturity exams of Lithuanian, Mathematics and/or a foreign language have not been passed."

(2) Expert judgement/indicator analysis

The panel finds the selection and admission criteria and process for students are adequate and fair. Aside from payment for study, all applicants have the same rights and obligations.

There is a low conversion rate between applications and offers with only 19.1 % of all applicants with any priority are accepted to the SPs. This is also due to the increasing entry level selected by the College. The SER reported that is the College that decides to increase the mimimum competitive score. Although the efforts to increase the quality of students is appreciate a careful balance is needed in order to avoid a substantial drop on student number admission.

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

(1) Factual situation

The College recognise qualifications acquired abroad and partial studies accordingly to the Republic of Lithuania Law of Education and Studies, Outcomes of partial studies acquired in higher education institutions abroad and in Lithuania are recognised directly without

limitations for students with an agreed curriculum otherwise an evaluating process is required and regulated by documents approved by KMAIK Academic Council.

Recognised ECTS for practice mobility was on 43, 45, 18 and for study mobility 22, 36, 60, for the year 2017/18, 2018/19 and 2019/2020 respectively (one student for study mobility in 2017/18, 2018/19 and 2 students in 2019/2020). During the last three years 4 full-time and 28 part-time students submitted the request for credit recognition and approved on the 85% of the cases. In studies of Environmental Engineering field no requests have been received for the recognition of competences acquired by non-formal and informal education within the period of 2017-2020.

(2) Expert judgement/indicator analysis

The panel recognises the procedures adopted by the College for the recognition of foreign qualifications, partial studies and other types of education methods.

The student mobility is very modest despite the fact that the College provides support and clear procedure for the automatic recognizon of aquired credits on high education institution abroud in case of an agreed curriculum.

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

(1) Factual situation

The academic mobility is governed by EU ERASMUS+ exchange programme for studies and practical training. The College signed 39 ERASMUS+ bilateral partnership agreements with higher education institutions in EU countries. In addition, the NordNatur programme, which is partly funded by Nordplus (Nordplus Framework Programme) programme provides and additional route to mobility.

Information about mobility opportunities and other international events is provided by the head of International Relations department as well by the SPs department administration. Informationa are also published on the College‘s website www.kmaik.lt, and advertised using different channel including Facebook profile, announced in departments, meetings with students and representatives of foreign higher education institutions.

22 students of Environmental Engineering study field partecipated in the ERASMUS+ exchange programme (SER, Table 16). 17 were outgoing students and 5 incoming students (all from Turkey). In addition 3 international students from Belarus and Ukraine were enrolled in the SPs. The COVID-19 pandemic affected the exchange programme in 2020.

(2) Expert judgement/indicator analysis

The panel finds that the College povided a good number of mobility opportunities for the students. The is a very small number of incoming students from abroad. The level of information and support seems adequate.

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

Information to the student is provided via induction events, tutors (providing information concerning studies, discuss the study process, answer questions, encourage communication within the group, help develop general, personal and social competences) and dedication events. The departments are responsible for providing adequate information to students. Important documents are available via the College website (e.g. regulations, rules, descriptions of procedure, information about support for students, career possibilities, etc.).

Finantial support is provided for students in need (incentive grant, one-time social allowances, supplements to the grant, awards, target grants). The finantial support is regulated by the „KMAIK Regulations for Awarding Grants". Student accomodation is also provided for all students, disregarding their place of residence, social position, and academic achievements, have a possibility to live in a hall of residence.

Flexibility in the study and personalisation scheduling (including online provided resorces) are provided for students on parental leave and for students with work committment.

Mental support for students is also provided in the form of free consultaincy with phycologist or dedicate programmes from the Lithuania Students' Union.

The College also provide personalised support to students by administration staff, heads of the departments, course tutors, lecturers. Different form of consultations are provided according to the needs (individually/groups, online/in person during lecturers' scheduled time or upon personal agreement).

Via the organisation of visits and events with enterprises, companies, organisations and other social partners, the College aims at motivating students in their studies, independence, involvement in applied and project activity.

(2) Expert judgement/indicator analysis

The College provides adequate and consistent support and information to students. During the online site visit, KMAIK students did not seem aware of all the support provided by the College especially related to mental health and finantial support.

KMAIK students of engineering courses were pleased that the teachers are always supportive with information and flexibility. During evaluation students seem to be satisfied by the support received.

3.3.5 Evaluation of the sufficiency of study information and student counselling

(1) Factual situation

The main source of information about the College, news, events is the KMAIK website www.kmaik.lt. Detailed information regaring the SPs, (e.g. timetables, lecturers, students' consultation) are provided via the learning environment Moodle. The College also provide free IT specialist consulting to support the use of online study platforms, and information

about access to free and licenced software. General information about the studies, students' rights, obligations, career possibilities, leisure, activity of Student's Council isprovided by the module "Introduction to specialisation".

The College provides dedicated space in social networks (Facebook, Instagram) for KMAIK students. For instance, there is a separately created Facebook platform (Želdynų dizainas. Studijos) for the SPLandscape Design seeking closer and informal communication between lecturers and students.

(2) Expert judgement/indicator analysis

The panel finds that KMAIK provides adequate information on the SPs using appropriate means (website, learning software - Moodle).

Feedback is used for the improvement of the quality of studies. The panel recognised the use of the feedback system to respond to negative feedback. During the visit, it has been noted that students are not alwayes comfortable with the current implemented feedback system but they recognised that actions have been taken to respond to negative feedback.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Good number of mobility oportunity offered to students.
2. Information are clearly comunicated to students via tutoring and using of digital tools.
3. Good student support in academic, social, finantial, psychological and personal fields.

(2) Weaknesses:

1. Students are not confortable with current implementation of feedback system but recognised its used of actions taken.
2. Students are not always aware of all support and opprtunities provided by the College.

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

The final assessment of the study course is based on the cumulative score formula, indicated in the course description. Cumulative score formula includes a specific number of intermediate tests (assignments) and their weight (impact) for the final assessment. Assessment criteria include the integrity of theoretical knowledge and practical students' skills.

The main teaching/learning methods are: lectures, laboratory works, practical training, seminars, lecture of a guest, case analysis, experiment, group discussion, preparation of reports, individual assignments, their presentation, etc.). The main outcome assessment methods are: assessment of tests, colloquiums, seminars, assessment of practical works (practical and laboratory assignments), individual work (course, term projects, creative projects, reports, etc).

The College applies a virtual learning environment Moodle and establishes a possibility for students to learn independently and remotely.

Students' individual work is arranged regarding individual assignments indicated in study subject descriptions. Descriptions of study subjects are announced in the College's Moodle environment. Before starting, a lecturer introduces students to the extended study subject programme where the content of individual work is planned. Students conduct individual assignments following lecturer's methodical guidelines, independently studying scientific literature, and being consulted by lecturers. The aim of individual assignments is to encourage student's activity, critical thinking, and professional competence. Lecturers consult students directly, by e-mail or in a Moodle virtual environment.

Graduates seeking to study in the second cycle must conform to special requirements defined by the study field or benchmark statements and a higher education institution. College graduates, who apply for Master studies in numerous Lithuanian universities, following their admission regulations, are accepted to bridging courses introducing the first study cycle subjects that were not studied before.

Within the analysed 2017-2020 period after completing bridging studies, 10 KMAIK graduates pursued Master studies in Vytautas Magnus University Agriculture Academy and Klaipėda University.

(2) Expert judgement/indicator analysis

The panel finds that the majority of teaching/learning methods are not very advanced like lectures, laboratory works, practical training, seminars, experiment, group discussion, preparation of reports, their presentations etc. Some more interacting teaching methods should aslo be used such as, creating study groups, competitions, reverse role, etc. Moodle teaching environment is widely applied and this is good.
The continuous performance assessment methods are effectively applied to encourage students to be active and engage in the lecture. The assessment consists of the marks of intermediate assessments and a final assessment, multiplied by the weighted coefficients and adding the multiplications. Organisation of student's individual work and evaluation are well-described and are acknowledged by students from the beginning. Further opportunities for graduates to pursue Master studies are well-described and are acknowledged by students.

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

(1) Factual situation

Using the financial support of LR Ministry of Education, Science and Sport and the funding of the College, equipment increasing study access and improving conditions for students with special needs was established and furniture adapted to students with special needs in the Central building classes.

As indicated during the site visit, in 2020 a significant amount was invested in adjustment of the physical environment of College Central Building for individuals with movement disabilities as well.

Students from socially vulnerable groups or with special needs can address the KMAIK's coordinator of the disabled issues, with whom they discuss all relevant aspects related to studies, various support forms and integration in the life of the College's academic community. 10 disabled students with special needs were studying during the investigated period according to the individual study plan. Various exemptions for study or accommodation payment are applied for socially vulnerable groups (orphans, the disabled, students from large families, or families with low income).

Socially vulnerable groups and students with special needs can study according to the individual study plan. Following Study Regulations, by a student's motivated request an individual study plan can be designed meeting his/her needs. It includes arrangement of study subjects/modules and tests throughout the term. Individual study plans are approved by the head of the department.

(2) Expert judgement/indicator analysis

The panel finds good conditions in place to ensure access to study for socially vulnerable groups and students with special needs. KMAIK has provided especially favourable conditions for students with movement disability and within the period of 2017-2020, 10 disabled students with special needs were studying in the College and they studied according to the individual study plan.

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

Study administrators and lecturers are responsible for students' monitoring and support on the basis of intermediate assessments. Students can follow the results of their intermediate and individual assignments in College e-record system ,,E-rezultatai" and virtual learning environment Moodle.

Study administrators of the Faculties personally (by email, phone) contact the students who miss intermediate tests, do not present individual assignments in order to know the reasons for missing lectures and intermediate tests.

Lecturer's consultation schedules are arranged in every department. They are announced at the start of the term in the Moodle system.

In order to improve the study process quality after the term student's survey concerning the quality of subject/module teaching are organised. It is designed to know students' opinions about the studied subject and its areas of improvement. Students and lecturers are introduced to feedback of the surveys intended for improvement of study quality. Results of monitoring are introduced for lecturers in department meetings and study programme committees. It is discussed about subsequent planning of study progress.

(2) Expert judgement/indicator analysis

The KMAIK has established a consistent system of monitoring of studying progress, uses analysis of the feedback, and individualised study process make sufficient grounds for reaching anticipated SP learning outcomes and improvement of study quality. Students are introduced to feedback of the surveys intended for improvement of study quality in meetings with department administration staff and tutors of academic groups whereas the summary is announced in the Moodle system.

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

(1) Factual situation

Graduates' career monitoring system is developed, surveys of graduates are carried out, the network of feedback is developed and graduates' career days are organised. Monitoring of graduates' career provides the feedback concerning employment and career, while the collected data is used to improve study programmes and study quality.

Graduates' survey about employment, the studied programme, gained competences and establishment in the labour market is conducted 6 months after graduation: graduates of the previous year are interviewed. The information concerning the workplaces and occupied positions is collected. Graduates are interviewed in several ways: by telephone, using internet questionnaires, in social media, by email, etc. At least half of all graduates are interviewed each year.

The survey of graduates aims at revealing the most important parameters of study programmes, aspects of study organisation in the KMAIK and assessing if the prepared specialists meet the needs of the labour market. During the survey they are asked about their career, subsequent studies, the job, marital status; if a graduate has not been able to find a job, the reasons are analysed. All graduates are asked to provide their opinion about the study quality, what was the most beneficial in the preparation for professional activity, what aspects could be improved, etc.

(2) Expert judgement/indicator analysis

Information on the employability of graduates and their career tracking in the field of study is well-described in SAR. Surveys of graduates' careers are regularly carried out, the network of feedback is formed and graduates. Indicators of graduates' employment are rather high. In 2017-2020 within the 6-month period after graduation from 33 to 100 % were employed; even 43-60 % of the graduates were employed in the field of their studies.

The data of Strategic Analysis Centre STRATA „Professional information tool" concerning the employed graduates of the years 2017, 2018, 2019 by the study field within the last 12 months after graduation shows that in 2017 36.5 % graduates had high qualification jobs, in 2018 the same could be said about 33.3 % and in 2019 – 25.33 %. It manifests rapid career progress.

The information on opinion of the graduates and the employers on the vocational training of the graduates and the competences acquired following the studies is collected. Based on surveys, the majority of respondents have gained sufficient preparation for professional activity. A significant part of College graduates claim that theoretical (84%), practical (70%), and general (85%) knowledge acquired during studies is sufficient.

However, there is no information of employers on the vocational training of the graduates and the competences acquired following the studies provided in SER.

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

(1) Factual situation

In 2018 College Academic Council approved an upgraded Code of Academic Ethics, which establishes values for College academic community members. Academic ethics is perceived as the integrity of commonly acknowledged values, assuring science and studies transparency, honesty, justice, equality of process participants, non-discrimination, responsibility, economic consumption of resources, unbiased assessment of learning and study assignments, trust, respect and protection of intellectual property. Implementation of the Code of Academic Ethics is supervised by the Academic Ethics Committee, which acts under the guidance of Regulations of Ethic Committee Activity.

Students are obliged to get acquainted with the Code of Ethics by signing the contract of Studies. All staff are introduced to the Code of Academic Ethics electronically – by email. Code of Academic Ethics, Provisions of Sexual Harassment and Discrimination are announced in public on the webpage of College (https://www.kmaik.lt/akademine-etika).

(2) Expert judgement/indicator analysis

There are all procedures in places to ensure the effectiveness implementation of policies to ensure academic integrity, tolerance and non-discrimination. Teachers and students are well-informed about these requirements and procedures. However, in the study field under evaluation, there have been no recorded cases of violations of the principles of academic integrity, tolerance and non-discrimination by students during 2017-2020 period.

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 studines.

(1) Factual situation

The procedure of submitting and analysing appeals and complaints is regulated by College Regulations of Appeal Committee and Regulations of Staff and Student Dispute Resolution Committee. Regulations of the Appeal Committee define the procedure of forming the committee, and its work as well as submitting and analysing appeals. The Appeal Committee bases its activity on College Statute, Study Regulations, Guidelines of College learning outcome assessment and cancellation of academic debts, Procedure of Graduation Thesis Preparation, Defence and Storage and other documents regulating studies. The Appeal Committee acts on the principles of objectivity, respect, confidentiality and efficiency.

Students can submit appeals no later than 48 hours after the exam, the final exam or GT defence day. The head of the department checks if the appeal is well-grounded and conforms to the procedure of appeal submission and analysis. Appeals are recorded in the department and rendered for consideration to the Appeal Committee. Anonymous appeals are not considered.

Students are introduced to the procedure of learning outcome assessment and appeal submission and other documents regulating studies in the first term during the course “Introduction to specialisation”.

(2) Expert judgement/indicator analysis

All necessary procedures are in place to ensure the effectiveness of the application of procedures for the submission and examination of appeals and complaints. Teachers and students are well-informed about these procedures. However, there have been no complaint cases regarding the study process from students in the study field under evaluation in the 2017-2020 period.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Social partners, employees and alumni are very satisfied with the quality of the programme and the skills and qualifications obtained by the graduates of the programmes.
2. There are very favourable conditions created for students with special needs and even 10 disabled students with special needs were studying during the investigated period according to the individual study plan.

(2) Weaknesses:

1. More advanced and novel study methods can be applied in the study process.
2. There is no information about employers' opinion on the vocational training of the graduates and the competences acquired following the studies provided in SER, therefore this information should be collected by organising surveys.

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

Based on SER the requirements on the General Requirements for Study Implementation ("...at least 10 % of the volume of higher education college study subjects must be taught by scientists or acknowledged artists (art subjects). More than a half of higher education college study field lecturers must have at least 3 years of practical work experience in the subject.) for the Environmental Engineering field study programmes are met, however detailed analysis for each SP is not easy as SER does not treat staff based on SPs. Most of the staff have good practical-professional experience, which seems to have been a priority over scientific experience. The report highlights the details of the number of years of experience gained by the staff member in a particular field. However, scientific achievements have not been highlighted in the same way. In fact, the bar to achieve an associate professor position is quite low (WoS H-index is about 1). Thus, it is assessed here that the focus is on practical rather than scientific activities. We understand that this is a college, but research is important in higher education institutions.

During the meeting with the SP staff, we received proof that in the case of professional bachelor's studies, it is more important to emphasise practical skills and experience, including inviting practitioners to implement the study programme. The average ratio of teachers to students in the field of study is about 1:10. Based on the meeting with the teachers, they have

a very positive attitude towards their work and have a clear vision on how to further develop the subjects taught.

(2) Expert judgement/indicator analysis

The indicators provided for the number, qualification, and competence of the staff of SP meet Lithuanian standards. Teachers in the field of environmental engineering are rather active in their field and have good practical qualifications according to the subjects taught, especially those who work part-time.

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

Lecturers participate in mobility activities, e.g. for academic work (22 visits during 2017-2020) as well as internship and monitoring visits. The number of lecturers from foreign universities was very the same (21 visits in total). The staff of the study field expressed their satisfaction with the ERASMUS+ mobility opportunities .

(2) Expert judgement/indicator analysis

The international mobility of teachers is acceptable, especially given that KMAIK is an institution that organises and conducts higher education at the college level. Increasing research, in particular through international research projects, is expected to increase staff mobility by adding a number of opportunities, e.g. participation in scientific conferences and networking (COST Action, etc.). Secondly, sabbatical leaves should be seen as a valuable extension of staff mobility.

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

(1) Factual situation

The College offers opportunities for the development of didactic competencies. According to SER, the interest of lecturers in training, seminars, courses and other activities related to didactic competencies has increased as the number of participants has increased over the last three years. However, it is somewhat inconvenient to evaluate statistics on how each teacher developed his/her qualification at least 8 times a year (summing up apples and oranges). SER does not reveal which didactic courses are offered (e.g. „Innovative learning methods", or „Digital competence for teaching", or „Teamwork empowerment" etc.) Indeed, it is acknowledged that staff have participated in a number of courses and events increasing their subject-competences (water management and structures, architecture, GIS). It is not agreed with the authors of SER that favourable conditions are provided for doctoral studies. In fact, it should be arranged (if at all) in cooperation with the universities responsible for 3rd cycle education.

(2) Expert judgement/indicator analysis

Didactic competence and subject competence development have been improved. Teachers actively participate in the ERASMUS+ mobility program. Teaching staff are well motivated to develop didactic skills, but this is not fully in line with the increased scientific competence, perhaps it may not be as important as in case of universities with third cycle studies.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. All SPs are taught by motivated staff who are very focused on the good teaching results, i.e. well-trained professional bachelors.
2. Opportunities to improve staff competencies are good.
3. The legal requirements for lecturers have been met.

(2) Weaknesses:

1. Communication skills in English need to be developed.
2. At least some of the lecturers should focus more on research to attract other staff to write joint articles. These articles should be of wider international interest, leading to an increase in citations.

3.6. LEARNING FACILITIES AND RESOURCES

Study field learning facilities and resources should be evaluated according to the following criteria:

3.6.1. Evaluation of the suitability and adequacy of the physical, informational and financial resources of the field studies to ensure an effective learning process;

(1) Factual situation

The teaching facilities and infrastructure have been developed over the last 20 years and meet today's standards ensuring a variety of learning modes (e.g. smart boards, equipment for hybrid lectures). The College has taken actions to adapt the premises to the needs of students with disabilities. Students have space for a Student's Council and access to vacant computer classrooms for individual work.

There are necessary computerised workplaces related to the specific needs of study programs with installed software like CAD, GIS and architectural design. Laboratories important for SP are available, e.g. hydrotechnical engineering, landscape design. Evaluators do not fully agree with the statements, written in SER, that there are some labs (e.g. Environmental Science laboratory, Chemistry and Soil Science laboratory) supplied with 'all the necessary equipment', especially when it comes to a very broad field, such as geology (e.g. „Environmental Physics", „Smart House", „Geology", „Soil Science and Agriculture"). We highly appreciate the fact that for the hydraulic engineering SP, the cooperation agreement is with the Academy of Agriculture of Vytautas Magnus University to use its specialised laboratories. This cooperation should definitely be of mutual interest, as graduates from KMKAIK have the opportunity to continue their studies at VMA. Even from an economic point of view, this seems to be a reasonable solution. The geodetic measurement equipment required for SPs is modern and includes state-of-the-art GPS equipment. Landscape Design SP has good coverage of software as well as some indoor stands (e.g. green wall modules). There are opportunities around the KMAIK's Central Building for outdoor activities. Moreover, students benefit of practical classes at KMAIK's partners' companies (e.g., JSC „Grantukas", JSC „Žaliasis sezonas", etc.) where they are acquainted with various SuDS, irrigation systems, etc.

Visits to various entities for which KMAIK lecturers and students do commissioned works (landscape design projects) are used to demonstrate to the KMAIK students activities in the so-called built enviroment.

(2) Expert judgement/indicator analysis

The facilities, information and hardware available for teaching and learning are adequate and suitable for running all three study programs. The Library of the faculty covers topics necessary for study programmes in both Lithuanian and foreign languages. Access to electronic databases is acceptable but could be improved (e.g. ScienceDirect). Good cooperation with Vytatutas Magnus University only strengthens this.

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

(1) Factual situation

Mainly based on the meetings with the staff, we can confirm that the teachers have a very clear understanding and vision of the equipment, software and tools needed for the further development of SPs. It was realised that the financial support of professional higher education institutions is somewhat worse than that of the larger Lithuanian universities. The resources needed for field studies are constantly being improved. The development is based on the information collected from the lecturers for the preparation of the purchase plan, which should generally correspond to the strategic directions given in the strategic Action Plan of KMAIK.

(2) Expert judgement/indicator analysis

The panel finds that the resources, premises and information resources available for teaching are suitable for conducting study programs, however there is also room for improvement.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Based on the SER, supplementary material and interviews with teaching staff, the study programmes are sufficiently equipped and the necessary and relevant software is available, teaching staff has also a vision for further improvements.
2. Cooperation with other institutions (e.g. Lithuanian Research Centre for Agriculture and Forestry, Vytatutas Magnus University) saves certain resources for specific developments.

(2) Weaknesses:

1. The focus of all activities is mainly on teaching, but the College is also a provider of higher education and needs to be linked to science.
2. SP Landscape Design needs a better field 'playground', e.g. something related to the built environment (why not develop with SP Hydraulic Structures for water displays, fountains, SuDS, etc).

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 studines;

(1) Factual situation

The primary aim of the College is education and study quality assurance with orientation to contemporary studies meeting high quality students and employers' needs. KMAIK Strategy 2020 has identified strategic tools for learning and study quality improvement. Therefore, College Quality Policy was approved, strategic principles and aims of quality improvement were formulated, The Description of College Internal Study Quality Assurance System was designed. These are the documents defining the main principles of internal quality assurance and obligations to constantly maintain the quality of learning and studies.

The SER outlines the Quality Assurance System with the following entities; College Quality guide, which describes the system of quality management, based on regulations and guidelines of Europe higher education space quality assurance (ESG; 2015). Description of University's Internal Study Quality Assurance System foresees ways of action and organisation of quality assurance system, links between teaching and scientific applied research, responsibility of College departments and separate employees for quality assurance, participation of students and other stakeholders implementing the measures of quality assurance, maintenance and improvement.

The main principles which guide decision-making in the University are efficiency, collegiality and constructiveness. Procedure of decision-making and allocation of responsibilities are described in College Statute, KMAIK Quality Guide, Rules of Work Procedure, Study Regulations and other internal documents. Study quality assurance system in the KMAIK is based on involvement of all academic community in processes of quality evaluation, assurance and monitoring. The highest KMAIK academic self-governing institution is Academic Council. On the basis of LR Law of Education and Studies, KMAIK Statute and Regulations of Academic Council, Academic Council ,,defines study procedure, approves study programmes and provides suggestions for the director concerning the funding of these programmes and rearrangement of KMAIK structure necessary to implement these programmes; it evaluates results of applied scientific research and experimental development as well as the quality of College's applied scientific research, and the quality/level of experimental development and artistic activity; it also approves the system of internal study quality assurance and controls how it is implemented <...> etc."

Further the SER reports SP Committees are formed for all study programmes. SP Committee is composed of at least 5 members, one or two of them are representatives of social partners, one is a representative of College study programmes; other members are regular lecturers of College study field or branch of a certain study programme. Committee of a specific SP assures consistent implementation of study aims and anticipated outcomes, continuous monitoring and uninterrupted SP improvement.

SP Committee regularly (once per term) revises SP procedure and results of student achievement assessment, discusses study procedure with College Student's Council members and SP students, evaluates SP implementation problems and needs for improvement. SP Committee makes suggestions to upgrade SP, considers and certifies descriptions of study subjects, suggests specifying study subject outcomes, changing their volume, teaching sequence, including new or eliminating the current study subjects, improving organisation of the study process, applying active teaching methods, etc. The SP Committee makes proposals for the department, which takes them into consideration and subsequently improves the study quality.

In order to assure SP implementation quality and continuous development, evaluation of the main programme implementation and organisation parameters is annually conducted and SP improvement process according to the defined areas is arranged. The procedure of implemented SP monitoring, periodic assessment and upgrade is described in KMAIK Quality Guide and outlined in descriptions of quality management processes: Description of Study Programme Improvement and Upgrade Procedure; Description of College Internal Study Quality Assurance System; Description of External Study Programme Evaluation and Accreditation Procedure; Description of Study Organization and Implementation, etc. Study process is organised and study programmes are improved in order to implement the student-oriented model following guidelines of Europe higher education space quality assurance (ESG).

(2) Expert judgement/indicator analysis

The committee finds that the quality assurance system is well described, and follows a well structured system. The Study program committees are the main part of the study program quality assurance and the SER describes in a good manner how the committees work. The review process appears thorough and detail oriented which is good.

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

(1) Factual situation

Members of the College academic community and stakeholders (students, lecturers, social partners, graduates) are involved in study quality assurance and improvement activities via participation in College decision-making, management and improvement processes. They participate in work of College Council, Academic Council, University Ethics Committee, Study Programme Committees, Commission of Graduation Thesis Defence, Exam Appeal Committee, organisation committees of scientific-practical conferences, groups of preparing SP self-evaluation reports, various committees and groups (they are their members). Stakeholders always take part in the process of External study programme evaluation and accreditation. Social partners, i. e. education and study institutions, other companies of public sector, industrial companies, state and business organisations, associations, representatives of professional unions, provide valuable advice for improvement of study programmes since they assess students' achievements and make suggestions for improvement of learning aims and outcomes. Close relations are maintained with the recently (spring of 2019) established alumni club. Meetings are organised, common events are arranged and informal communication with College graduates (members of alumni club) is pursued. They make comments concerning KMAIK activity, give proposals for SP improvement and discuss ideas and possibilities of common projects.

College intensely involves students in the evaluation and improvement of quality in different stages of studies. On the basis of good practices of foreign educational institutions, students participate in all levels of decision-making, namely from designing timetables to development of College Strategy. Representatives delegated by the Students' Council are members of KMAIK Council, Academic Council and Directorate. The involvement of stakeholders in study quality assurance mostly happens through their participation in SP committees. Actions of SP Committees are indicated in „Description of Study Programme Improvement and Upgrade Procedure"; „Description of College Internal Study Quality Assurance System". Representatives of stakeholders to SP committees are proposed by partner companies,

education institutions, or they are invited by the College. Employers help summarise and analyse the data of employers' surveys, and discuss the needs of employers, the specialisation field and prospects. They take part in the development of study programme aims and outcomes, make proposals concerning practical training, development of practical skills, etc.

(2) Expert judgement/indicator analysis

The SER describes a good structure for involving stakeholders and students in the review process, which the panel finds satisfactory. However, the described system does not include any routines or procedures for mitigation strategies or actions to improve shortcomings and issues identified in the stakeholder involvement part. It would also have been good to include a summary of the main identified issues from the last round of interactions with the stakeholders.

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

(1) Factual situation

For monitoring and improvement of College SP, the opinion of all stakeholders is of crucial importance. Students, lecturers, and social partners are involved in the internal evaluation of study quality assurance efficiency. The fundamental part of the study quality assurance system is the feedback. The Description of KMAIK Feedback for Improvement of the Study Quality defines the procedure of feedback organisation, data collection, analysis, access, use and publicity in the College. The feedback is collected during periodic surveys of stakeholders (students, graduates, employers) by summarising their comments and evaluation. The feedback is also obtained in various ways regarding the situation (conversations, round table discussions, interviews, meetings, by phone, email etc.).

Every year surveys of all students and graduates are conducted. The surveys are the following: 1) the survey of the first year students „Why have you decided to study at KMAIK?" is conducted in autumn semester; 2) students' survey about teaching quality is organised after the term twice a year; 3) students' survey after professional activity practice, organised once a year; 4) survey of the final year students about satisfaction with studies and how far the studies have met their expectations, arranged at the end of studies after defence of the GT; 5) survey of students after mobilities abroad according to international exchange programmes and the survey of students arriving to study at KMAIK according to Erasmus+ exchange programme, arranged at the end of each mobility; 6) graduates' survey concerning employability, the studied programme, acquired competences, establishment in labour market, organised once 6 months after graduation.

The survey of College lecturers concerning SP implementation and quality of study process organisation and satisfaction with work is conducted at least once per two years. It is aimed at finding out lecturers' opinion about SP administration, lecturers' motivation, possibilities of teaching and scientific competence development as well as work atmosphere and involvement of the staff in decision-making processes.

(2) Expert judgement/indicator analysis

The SPs use both end of first year surveys and graduation surveys. Reports with summaries of the surveys are publically available which is good. Overall the committee found that the study

programmes under review have a satisfactory system in place, but encouraged them to work on a more open procedure for mitigation strategies for identified issues.

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

In order to improve the study quality, surveys of students of all College study programmes and all study forms are organised regularly, by collecting both qualitative and quantitative information. The procedure of feedback organisation, data collection, analysis, access, use and publicity in the College is comprehensively described in section 7.3. Survey data is processed, summarised, analysed reports are written by employees of academic departments responsible for the surveys.

Having analysed the data of students' surveys conducted in Environmental Engineering study field SPs, the information provided by academic group leaders as well as information received during administration conversations with student groups concerning organisation of studies, evaluation of study subjects and lecturers' work, suitability of material base, (un)satisfied expectations, study atmosphere and other issues, it can be claimed that students of Hydrotechnical Engineering SP, Landscape Design SP and Land Management SP are satisfied with study quality and study organisation.

General satisfaction score of Hydrotechnical Engineering SP (in a five-point system) in 2017-2018 was 4.1 points, in 2018-2019 – 4.3 points, in 2019-2020 – 4.6 points. Students best evaluated the fact that lecturers' developed teaching material was beneficial for studies of a subject, applied methods help better perceive the subject content and increase motivation to learn.

Satisfaction of Landscape Design SP students in 2017-2018 was 4.2 points, in 2018-2019 – 4.2 points, in 2019- 2020 – 4.5 points. Students best evaluated the fact that study subject assessment is clear and transparent while results of individual assignments are discussed and objectively assessed at the scheduled time.

General satisfaction of Land Management SP students in 2017-2018 was 4.2 points, in 2018-2019 – 4.3 points, in 2019-2020 – 4.5 points. Students best evaluated the fact that during studies they could gain new knowledge and practical skills essential for future professional activity.

(2) Expert judgement/indicator analysis

The panel finds that the study programmes have a good structure for collecting student feedback. The students are in general very happy with their studies. However, the panel would like to comment that also the identified issues for the surveys should have been included and not only the students satisfactory score rating.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Well structured planned for stakeholder and student interaction and feedback.
2. Students have the possibility to provide feedback using different systems and challenels.

(2) Weaknesses:

1. There is no clear mitigation and or implementation phase for potential identified issues in the review process.
2. There is a narrow format for feedback mainly based on surveys and questionnaires.

IV. EXAMPLES OF EXCELLENCE

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

If, according to the expert panel, there are no such exceptional characteristics demonstrated by the HEI in this particular study field, this section should be skipped / left empty.

V. RECOMMENDATIONS*

Evaluation Area	Recommendations for the Evaluation Area (study cycle)
Intended and achieved learning outcomes and curriculum	The process of handling student complaints in an open and unbiased manner is not clearly laid out. There is a concern that there are reported complaints, which indicates that this is missing in the system. The study field is also encouraged to demonstrate how the higher aims and learning outcomes result in specific output in each course.
Links between science (art) and studies	All students should understand basic research principles and they should also be involved in applied scientific research or applied projects. This can only be achieved by increasing the number of staff involved in scientific or applied research.
Student admission and support	The feedback systems need to be trusted by the students. More information about opportunities for mobility should be provided using dedicated events and not only publishing online.
Teaching and learning, student performance and graduate employment	More advanced and novel study methods can be applied in the study process. The information about employers' opinion on the vocational training of the graduates and the competences acquired should be collected.
Teaching staff	At least some of the lecturers should focus more on research to attract other staff to write joint articles.
Learning facilities and resources	All study programs have a common theme on the "built environment" for which joint activities can be developed.
Study quality management and public information	A clear and open mitigation and or implementation phase for potential identified issues in the review process is needed. There is a narrow format for feedback mainly based on surveys and questionnaires which limits feedback to those who participate. Explore a border and a more open set of feedback methods.

*If the study field is going to be given negative evaluation (non-accreditation) instead of RECOMMENDATIONS main **arguments for negative evaluation** (non-accreditation) must be provided together with a **list of "must do" actions** in order to assure that students admitted before study field's non-accreditation will gain knowledge and skills at least on minimum level.

VI. SUMMARY

Main positive and negative quality aspects of each evaluation area of the study field Environmental engineering at Kauno Miškų ir Aplinkos Inžinerijos Kolegija

Major positive aspects:

- Very good alignment of the study fields with the strategic vision and UN sustainable development plan, Industry 4.0, Lithuania 2030 and sustainable water policy;
- The teachers seems to be competent and knowledgeable about the subject and very approachable;
- Good practical activities in almost all the modules in the study programmes and that has really been appreciated by the students and by the social partners;
- Employers really appreciate the strong practical skills gained by the graduates. There is a strong interaction and take over from social parties. The alumini are really enthusiastic about their studies and experience;
- Good sharing facilities from other universities from a sustainability point of view (it also provides a path to collaborate);
- Very good applied education systems as clearly recognised by the social partners and students.

Suggestions for improvement:

- The Self Evaluation Report should have been written in a different form, e.g. by demonstrating the need for the College and its contribution to the society without the necessity to compete with research universities;
- The report seems to be exaggerating most of the research outcome or research involvement with students. There is too much emphasis on achievements and limited discussion about what could have been done better or can be improved.
- Some of the staff have limited international experience and that has been noticed and highlighted by the students.

In conclusion, the role of Colleges is really important for the society and the Panel recognises the quality of the study programmes in Hydrotechnical Engineering, Landscape Design and Land Management provided by Kaunas College of Forestry and Environmental Engineering.

Expert panel leader

Prof. dr. Edoardo Patelli