



CENTRE FOR QUALITY ASSESSMENT IN HIGHER EDUCATION

EVALUATION REPORT

STUDY FIELD of MEASUREMENT ENGINEERING

at Kauno kolegija

Expert panel:

1. Prof. dr Krzysztof Czaplewski (panel chairperson), *academic*;
2. Assoc. Prof. dr Peregrina Eloina Coll Aliaga, *academic*;
3. Mr Audrius Petkevičius, *representative of social partners*;
4. Ms Miglė Gervytė, *students' representative*.

Evaluation coordinator – Ms Miglė Palujanskaitė

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Study Field Data

Title of the study programme	<i>Geodesy</i>
State code	6531EX053
Type of studies	Higher education college studies
Cycle of studies	Bachelor's Degree (1 st cycle)
Mode of study and duration (in years)	Full-time (3 years)
Credit volume	180
Qualification degree and (or) professional qualification	Bachelor of Engineering Sciences
Language of instruction	Lithuanian
Minimum education required	secondary education
Registration date of the study programme	2002-08-30

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I. INTRODUCTION

1.1. BACKGROUND OF THE EVALUATION PROCESS

The evaluations of study fields in Lithuanian Higher Education Institutions (HEIs) are based on the Procedure for the External Evaluation and Accreditation of Studies, Evaluation Areas and Indicators, approved by the Minister of Education, Science and Sport on 17 July 2019, Order No. V-835, and are carried out according to the procedure outlined in the Methodology of External Evaluation of Study Fields approved by the Director of the Centre for Quality Assessment in Higher Education (hereafter – SKVC) on 31 December 2019, Order [No. V-149](#).

The evaluation is intended to help higher education institutions to constantly improve their study process and to inform the public about the quality of studies.

The evaluation process consists of the main following stages: *1) self-evaluation and self-evaluation report (SER) prepared by HEI; 2) site visit of the expert panel to the HEI; 3) production of the external evaluation report (EER) by the expert panel and its publication; 4) follow-up activities.*

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

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

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

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

1.2. EXPERT PANEL

The expert panel was assigned according to the Experts Selection Procedure as approved by the Director of SKVC on 31 December 2019, [Order No. V-149](#). The site visit to the HEI was conducted by the expert panel on 29 November, 2022.

Prof. dr Krzysztof Czaplewski (panel chairperson) *Professor of Gdynia Maritime University, Poland*
Assoc. Prof. dr Peregrina Eloina Coll Aliaga, *Associate Professor in the València University of Technology, Spain*
Mr Audrius Petkevičius, *Head of Real Estate practice, Ellex Valiunas, Lithuania*
Ms Miglė Gervytė, *BSc graduate in Genetics, Vilnius University, Master's degree student, Vilnius University*

1.3. GENERAL INFORMATION

The documentation submitted by the HEI follows the outline recommended by SKVC.

1.4. BACKGROUND OF STUDY FIELD OF MEASUREMENT ENGINEERING AT KAUNO KOLEGIJA

Kauno kolegija (hereinafter – KAUKO) is a multi-profile state higher education institution training specialists in technology, informatics, engineering, medicine, humanities, social, art, education, business and public management, law, and agricultural sciences. KAUKO is a public college subordinated to the Ministry of Education and Science. The college has two governing bodies: the College Council and the Academic Council. The college council is the supervisory and control body for the functioning of the college. The members of the Council include persons appointed by the Academic Council (33%), the Minister of Education and Science of the Republic of Lithuania (33%) and persons agreed jointly by the Director of KAUKO and the Minister of Education and Science (33%). The college council controls the college's finances, defines the college's vision and directions of its development. The Academic Council is the governing body responsible for supervising the didactic process at the college, the implementation of scientific and research works and ensuring the appropriate level of quality of studies. The school is headed by the director. KAUKO has 4 faculties. Studies in the assessed field are conducted at the Faculty of Technologies.

Measurement engineering is one of the important areas of human activity in Lithuania (for example architecture, construction of roads, safety of land, sea and air transport, cartography, spatial information systems and others). The regaining of independence by Lithuania, together with the rapid development of technology, resulted in the need for highly qualified engineers

who would meet the requirements of the transformation of the Country. Therefore, the college implements numerous national and international research projects supporting the didactic process and meeting the requirements of the labour market. Well-educated engineers quickly find their jobs and the acquired knowledge allows them to easily adapt to the needs of the country using the latest measurement technologies.

The external evaluation of study field of the Geodesy (first cycle) major took place in 2013. Due to the change in the names of the fields of study introduced in Lithuania, the field of study in measurement engineering has not yet been assessed.

II. GENERAL ASSESSMENT

Measurement Engineering study field and *first cycle* at Kauno 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	3
2.	Links between science (art) and studies	3
3.	Student admission and support	3
4.	Teaching and learning, student performance and graduate employment	3
5.	Teaching staff	3
6.	Learning facilities and resources	4
7.	Study quality management and public information	3
	Total:	22

*1 (unsatisfactory) - the area does not meet the minimum requirements, there are fundamental shortcomings that prevent the implementation of the field studies.

2 (satisfactory) - the area meets the minimum requirements, and there are fundamental shortcomings that need to be eliminated.

3 (good) - the area is being developed systematically, without any fundamental shortcomings.

4 (very good) - the area is evaluated very well in the national context and internationally, without any shortcomings;

5 (excellent) - the area is evaluated exceptionally well in the national context and internationally.

III. STUDY FIELD ANALYSIS

3.1. INTENDED AND ACHIEVED LEARNING OUTCOMES AND CURRICULUM

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

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

(1) Factual situation.

In order to align the results of the study programme of Geodesy (hereinafter – SPG) with the needs of society and the labour market, the Industrial Engineering and Robotics (IER) Department analyses the need for specialists in the labour market, and academic staff collect relevant information participating in various events, conferences, etc. organised by professional associations. The need for SPG is connected to the INSPIRE Directive and the challenges posed by Industry 4.0. A survey has been carried out by the Lithuanian Union of Surveyors and Surveyors and the results show the need to hire these engineers in the future.

The Market.lt portal offers jobs for geodesists not only in Lithuania but also abroad (Latvia, Estonia, Germany, etc.). As stated in the SER, the study programme of Geodesy fully complies with the requirements set for the study field of Measurement Engineering and the first cycle of studies. The topics of the FTs correspond to the aim and learning outcomes of the SPG and they are discussed at the meetings of the Study Field Committee.

Table 1 of the SER shows the learning outcomes that meet the needs of the labour market and are related to the objective of the study program.

(2) Expert judgement/indicator analysis.

During the visit and the meetings with alumni, employers and social partners, it was confirmed that the aims and outcomes of the study programs are in line with the needs of society and the labour market.

3.1.2. Evaluation of the conformity of the field and cycle study programme aims and outcomes with the mission, objectives of activities and strategy of the HEI

(1) Factual situation.

As stated in the SER, the aim and learning outcomes of the SPG comply with the *KAUKO Strategy 2021-2025* and the KAUKO mission and it is based on the learning outcomes focused on training highly qualified geodesy professionals and correlated with the current needs of the labour market and social development.

(2) Expert judgement/indicator analysis.

Aims and outcomes of field study programs are perfectly in line with the mission, objectives of activities and strategy of the KAUKO.

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

(1) Factual situation.

As described in the SER, the SPG was developed following the laws of the Republic of Lithuania that regulate the activities of the study field of Measurement Engineering, i.e., the Law on Real Estate Cadastre of the Republic of Lithuania, the Law on Geodesy and Cartography of the Republic of Lithuania, the Law on Land of the Republic of Lithuania.

The level of complexity and logic of the learning outcomes corresponds to the Level 6 qualification requirements described in the European Qualifications Framework and the Description of the Framework of Qualifications for Lithuania. The duration of the full-time studies of the SPG is 3 years. The volume of the programme is 180 ECTS credits.

Table No. 1 Study Programme of Geodesy (SPG) compliance to general requirements for *first cycle study programmes of College level (professional bachelor)*

Criteria	General* legal requirements	In the Programmes
Scope of the programme in ECTS	180, 210 or 240 ECTS	180 ECTS
ECTS for the study field	No less than 120 ECTS	135 ECTS
ECTS for studies specified by college or optional studies	No more than 120 ECTS	45 ECTS

ECTS for internship	No less than 30 ECTS	31 ECTS
ECTS for final thesis (project)	No less than 9 ECTS	12 ECTS
Practical training and other practice placements	No less than one third of the programme	1674 hours
Contact hours	No less than 20 % of learning	2188 hours

The minimum volume of the course units is 3 credits and depends on the nature of the learning outcomes and the level of complexity of the course. The aims and learning outcomes of the courses are defined in their descriptions. The study plan of the SPG is modified considering the needs.

(2) Expert judgement/indicator analysis

SPG complies with the requirements set in the legislation, and its volume is sufficient to achieve the anticipated learning outcomes.

The expert panel consider that should there is a committee where the companies are integrated and meetings are held with them to study the labour needs to updated the SPG.

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.

Different forms of teaching-learning are used to promote competencies in their students. A cumulative assessment system is used to ensure consistent study. The evaluation of learning achievements is regulated by the KAUKO Description of the procedure for evaluating learning achievements.

(2) Expert judgement/indicator analysis

Various study and assessment methods are used in the study process. The meetings at the college confirmed that students are pleased with the teaching staff, learning outcomes and teaching/learning and assessment methods. Alumni also confirmed this.

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.

Annex 2 shows the study plan where you start with general subjects and the SPG specialisation courses (21 credits) are studied in the third year. Students' practical skills are developed from the first year. In semester 5 the final professional practice is carried out. Students perform this practice in real workplaces. The description of each course is prepared based on the format approved by KAUKO.

The courses of study and their arrangement in the study plan ensure the consistency of general competencies and specific development of future specialists in Measurement Engineering.

(2) Expert judgement/indicator analysis.

In the meetings with the teaching staff and with the students, it is confirmed that there are no overlaps between the subjects and that there is good coordination between the teaching staff to ensure that the students acquire the competencies.

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

Students can personalise their studies by choosing the specialisation: Applied Geodesy or Real Estate Cadastre, in addition to some elective courses. They, also, choose the practice training's company, institution or association. Moreover, they get to choose the topic of their final bachelor thesis.

In the second year of the study programme, students are offered from a list of 80 courses, including foreign languages, soft skills related courses and more. In addition, students with special needs can apply to an individual plan.

(2) Expert judgement/indicator analysis

Several subjects are available for students to customize the structure of the field curricula according to their personal learning objectives and expected learning outcomes.

As the practices are mandatory, college should make sure students have good opportunities to carry the practices out and offer some places to do it.

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

(1) Factual situation

The topics of the thesis must correspond to the aim outcomes of the study program. The topics are discussed by the Study Field Committee. When the bachelor thesis is completed, it is submitted for review by the department, using TURNITIN, then the public defence takes place with the Assessment Committee, changed every academic year. Committee is composed of at least 5 people and 3 of them from outside the college.

The final grade of the thesis is the mean of all Assessment Committee's members' scores weighted 0.7 plus the reviewers' score weighted 0.3.

The student has a guideline for its preparation, defence and assessment. After successfully defending their thesis the student's studies are done and they can get the Professional Bachelor Degree in Engineering Sciences.

During the assessment process, there were 67 final theses, most of them using a realistic methodology which could be apply. In the last 3 years, the students have done 6 final theses for stakeholders (without financial remuneration).

(2) Expert judgement/indicator analysis

Conversations held during the meetings with students and the employers was corroborated that the companies are part of the evaluation committee. It would be interesting for agreements to be made with companies to carry out the practices for to make the final thesis with an economic remuneration for the student.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Many ways for students to personalise their study programme.
2. Realistic final thesis with the participation of stakeholders.
3. Connecting the study programme's learning outcomes to the INSPIRE directive.

(2) Weaknesses:

1. As the practices are mandatory, college should make sure students have good opportunities to carry the practices out and offer some places to do it.
2. The Final Theses carried out in companies should be with financial remuneration.

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

Scientific and research activities are conducted on the basis of Order of Minister of Education, Science and Sport of the Republic of Lithuania No V-93, 06/02/2019. Research works are also conducted in the field of Measurement Engineering (code T-010). The main research areas for Measurement Engineering are the quality of land cadastral data files, space imagery, photogrammetry, cartography and the design, development, and application of geographic information systems. The following research works were carried out in the reporting period: research on the formation and redevelopment of buildings and land plots, boundary valuation and adjustment, analysis, and modelling of spatial data; research on the accuracy of unmanned aerial vehicles and the use of satellite imagery, cartometric research.

The college conducts research works in cooperation with the researchers of the Centre for Remote Research and Geoinformatics *GIS-Centras*, Lithuanian Cartographic Society, Kaunas University of Technology (KTU), Lviv National Agrarian University (Ukraine), University of Žilina (Slovakia). In addition, information is given that the college conducts research in cooperation with companies. However, the names of these companies and the scope of their cooperation were not given. The results of the research are used to update the program of study. In addition, they are disseminated in the form of scientific publications and papers presented at scientific conferences. The SER presents plans for scientific activity for 2022-2024.

(2) Expert judgement/indicator analysis

Information contained in the Self-Evaluation Report was confirmed during on-site visit. Experts panel collected a few information about cooperation college and companies in field of study.

However, we suggest a further increase in activity on the market of scientific research and the implementation of commissioned works.

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

(1) Factual situation

There is a connection between the content of the study program and the conducted research. The confirming information is in the SER and the team of experts got enough knowledge during the visit to the college. The study program is updated on an ongoing basis (the results of research works are implemented in the curriculum content).

(2) Expert judgement/indicator analysis

The information from the SER was confirmed during the visit. During the meetings, information on the ways of transferring knowledge obtained during the implementation of research works and information on technological novelties was obtained. When there is a possibility of obtaining funds for modern technologies, they are purchased and made available to students during field exercises. An example of this is the purchase of a laser scanner, GNSS Total Stations or a 3D printer. In addition, KAUKO invests in modern software enabling the creation of modern terrain visualizations. The purchased devices and software are then used by students during practical classes and in the performance of semester tasks. This is a very good trend. At the same time, to a lesser extent, research activity focuses on the use of methods and devices necessary for the implementation of tasks in the so-called "lower geodesy". This seems not entirely appropriate as students have limited opportunities to test their knowledge and skills in this area of measurement engineering. It seems appropriate for the College to balance the topics of research work in such a way that students equally have the opportunity to test their skills in every area of measurement engineering.

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

A significant number of students of Measurement Engineering take part in numerous national and international conferences where they present their knowledge by delivering papers. In addition, they organize events promoting science, e. g. the "GISday" conference has been

organized since 2018. Students successfully participate in international competitions in the field of professional excellence. In addition, applications are submitted for co-financing of research projects in the field of developing students' research competences. Applications are submitted as part of national and EU competitions.

(2) Expert judgement/indicator analysis

Conversations held during the meetings with students and academic teachers confirmed that students are involved in the implementation of research projects, and teachers willingly share scientific news in the field of study. The additional involvement of students does not interfere with the implementation of the study program, on the contrary, it develops their knowledge and prepares them for future professional work.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Students' activity during conferences and other national and international events.

(2) Weaknesses:

1. A small number of research works commissioned in the field of typical geodetic works.

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

KAUKO has one *first cycle* study programme (*Geodesy*) in Measurement Engineering field. Rules for admission and competitive admission score calculations are described in rules of students' admission to KAUKO which is available on the KAUKO website. Admission is organised regarding requirements and regulations of Ministry of Education, Sciences and Sports, and the rules for admission of students approved by Academic Council of KAUKO. All admission information (how competitive score is calculated and information about additional points) can be found in KAUKO website.

According to the SER and on-site visit, 12 (9 SF places and 3 NSF), 10 (9 SF, 1 NSF), 11 (10 SF, 1 NSF) and 0 students have been admitted in 2019-2022 respectively. During 2019-2021 average

competitive score was accordingly 5.11, 5.55 and 5.61 every year being higher for SF places. In order to attract more students KAUKO presents study program at study fairs and going to general education schools where KAUKO staff and students conduct lessons and workshops.

(2) Expert judgement/indicator analysis

Declining demographic situation, increased minimal competitive score by Education ministry and lower Mathematics evaluation of the state school-leaving examination results have negative impact on admission results because passing Mathematical exam is required for applying to state funded place. Since every year majority of students admitted to KAUKO Measurement Engineering study field were admitted to SF places, as a result, number of enrolled students in 2022 was too low to form a group this year. KAUKO should have a concrete plan and a list of actions which would allow to attract more students for the future.

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 information about process for recognition of foreign qualifications, partial studies and nonformal and informal learning is provided in the “Procedure for crediting learning achievements in KAUKO” and “Procedure for the assessing and recognizing knowledge and skills acquired in nonformal and informal learning and self-study as learning outcomes in KAUKO”. In 2019-2021 2 students got recognition of their achievements in other study programme. However, no students had their non-formal and informal achievements recognized.

(2) Expert judgement/indicator analysis

KAUKO has procedures that are described and published in KAUKO website. Students are informed that their previous experiences and achievements can be recognized but more attention should be paid to informing students about recognition of non-formal and informal achievements.

3.3.3. Evaluation of conditions for ensuring academic mobility of students

(1) Factual situation

KAUKO students can use academic mobility opportunities from 16 bilateral Erasmus+ and Nordplus cooperation agreements. Information about academic mobility can be found in KAUKO

website, intranet and social network. Furthermore, promotional events for students are organised in order to encourage them to use this opportunity. During 2019-2021 5 students have completed partial studies / internships under Erasmus+ mobility programme and 4 students took part in an intensive programme in Latvia under Nordplus. 8 students from foreign countries came to SPG for studies or internships under exchange programmes.

(2) Expert judgement/indicator analysis

Some students use academic mobility opportunities for partial studies, internships or short intensive programmes. Even though procedures to apply for partial studies seems clearly established and promoted, during on site visit not all students had efficient knowledge about academic mobility possibilities or whether it is applicable for *Geodesy* study programme students. KAUKO should be paying more attention to informing students about opportunities, showing why academic mobility is beneficial for Measurement Engineering study field and encouraging them to use it.

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 about academic, financial, social, psychological and personal support can be found on KAUKO website. A wide spectrum of scholarships is available for the KAUKO students according to Lithuanian laws and include incentives, support for disabled persons, and one-time scholarship to support research, exceptional learning achievements, personal strides.

KAUKO students can get free of charge psychological counselling and can also receive psychological support by calling to provided telephone number. Academic support also includes counselling students on study-related issues and is provided by Library and IRC, Career Centre and its organized meetings with alumni and social partners, Language Centre, Business Centre, tutors and also on the KAUKO website, VLE Moodle, social networks and group emails. From 2021 KAUKO students can get support and mentoring from Students' Support Coordinator who can help students with integration to KAUKO, their individual needs and other issues related to their studying process.

(2) Expert judgement/indicator analysis

The panel judges that students' academic, financial, social support is adequate and suitable. During on-site visit students claimed that they know what help they can receive and where to look for it. Students emphasized that meetings with alumni and social partners organized by Career Centre are really useful. It is commendable that KAUKO since 2021 has a new Students' Support Coordinator position in order to help students more efficiently.

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

(1) Factual situation

Student counselling starts from the first days at KAUKO during an "Introductory Week" where they get relevant information about study process. Meetings with Head of Department of IER, the Coordinator of International Activities, Students' Support Coordinator and other administrative staff are organized periodically letting students receive information about study process, opportunities and procedures. Moreover, documents regulating studies and methodological materials for studying courses are available in the VLE Moodle.

After every semester students are required to fill in surveys about their experiences during that period of time. After results are received, teaching and administrative staff have discussions what could be changed regarding what students have said.

(2) Expert judgement/indicator analysis

During on-site visit students expressed that counselling is sufficient and there is no deficiency of study information dissemination. It is commendable that meetings regarding study process information are organized periodically and that all material can be found in the VLE Moodle.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Available and efficient students' support.
2. Academic mobility opportunities for students that cannot go abroad for longer period of time.

(2) Weaknesses:

1. Not all students know about academic mobility opportunities.
2. Too low number of students enrolled in 2022 to form a group.

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

Students are encouraged to participate in the study process in various ways and forms, using different methods. To achieve the anticipated learning outcomes of study courses, the following study methods are used: traditional and interactive lectures, study trips, seminars, laboratory activities, case studies, problem analysis and solving, individual and group projects, discussions, individual consultations, distance teaching using VLE Moodle, etc.

The academic staff of the SPG have developed virtual learning classrooms in the Moodle environment, where the student becomes an active participant. 54.4 per cent of the academic load is assigned to students' self-study.

(2) Expert judgement/indicator analysis

Teaching and learning process is well organized. Social partners have very little participation. One teacher has too many different subjects.

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

(1) Factual situation

Study process is adapted for socially vulnerable groups of students and students with special needs. There are some students with special needs. Each student has personal coordinator. Also, personal time planning can be implemented.

(2) Expert judgement/indicator analysis

KAUKO is in line with minimum for students from socially vulnerable groups and students with special needs.

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

KAUKO has developed and applies the system of assessing students' achievements, defined in the KAUKO Study Procedure and the Procedure for assessing learning achievements. When evaluating learning outcomes, the academic staff follow the principles of clarity, objectivity, impartiality, openness, and mutual respect and goodwill. Various methods of assessing students' learning achievements are used, including tests, assessment of demonstration of skills in the laboratory, internship reports, projects, etc. The methods of assessing learning achievements are defined in course descriptions, which are certified by the Study Field Committee.

During the first lecture, the academic staff of the SPG acquaint students with the aim of the course, the anticipated learning outcomes, the content; the cumulative assessment system, assessment criteria, etc. Only the knowledge, abilities, and skills defined in the learning outcomes specified in the course description are assessed. The learning achievements of the course are evaluated by the academic staff teaching it. To assess learning achievements, cumulative assessment is applied. Interim accountings are used to monitor progress systematically.

(2) Expert judgement/indicator analysis

Monitoring system implemented and work on regular base. Students and teachers use it regularly.

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

(1) Factual situation

Every year graduates' employability is analyzed to assess the need for trained specialists and the marketability of the programmed. Objective and subjective data are collected to monitor the employment and career of SPG graduates. KAUKO has very small number of students and social partners.

(2) Expert judgement/indicator analysis

Monitoring of careers of graduates is implemented but contact with social partners is very formal. Contact with social partners must be more detail and regular with more social partners.

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

(1) Factual situation

The KAUKO community follows the principles of transparency of the study and research processes, academic integrity, equality, non-discrimination, justice, protection of intellectual property and other universally recognized principles. Each member undertakes to comply with the provisions of the KAUKO Code of Academic Ethics and not tolerate its violations. To avoid plagiarism and inappropriate use of information sources, students check their practical papers and final theses using the text-matching tool TURNITIN. Discussions and training on academic (in)honesty are organized.

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

(1) Factual situation

The Procedure for assessing learning achievements at KAUKO establishes the way of handling appeals. Within 3 working days from the announcement of the final result (the announcement date is not included in this term), students/unclassified students can appeal to the Dean of the Faculty regarding non-compliance of the evaluation of learning achievements with the criteria pre-specified in the course description. The appeal is written in a free form, stating the arguments and reasons for disagreeing with the final evaluation of the course studies.

The received appeal is handled by a Board of Appeal formed by the Dean of the Faculty, who, within 15 working days after receiving it, makes one of the following decisions: to reject the appeal; satisfy the appeal and verify another final evaluation; satisfy the appeal and allow retaking/taking the examination or another final accounting. The student/unclassified student is informed of the decision of the Board of Appeal.

During the period under assessment, no complaints or appeals were submitted by the SPG students.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Strong/big institutional organization. The main procedures well described function split between staff, possible support from other departments.

(2) Weaknesses:

1. Weak cooperation with market/social partners.
2. Very small number of teachers, lack of specialized teachers.

3.5. TEACHING STAFF

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

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

(1) Factual situation

The Annex 6 shows the list of the academic staff, indicating their qualification or scientific degree, teaching and professional experience in the field of the course taught, research interests, the courses taught, and workload. The academic staff working in the SPG meet the requirements laid down in the Law on Higher Education and Research of the Republic of Lithuania. All have a master's degree or an equivalent. 6 of the 12-teaching staff have PhD in the field of study and all SPG teaching staff have worked in KAUKO for more than 3 years. In the last years, young researchers have been recruited to ensure the replaceability of retiring staff and create favourable conditions for study.

(2) Expert judgement/indicator analysis

The number of teaching staff, their qualifications and competencies are sufficient to achieve the SPG learning outcomes, although they should be increased the number full-time teachers of the core subjects. It should be reconsidered that the same person teaches 10 subjects. During the visit it was detected that there was a part-time professor with these characteristics and although the students did not complain, the experts panel considers that the maximum number of subjects that a teaching staff should teach should be reconsidered in order to improve the teaching of that teaching staff.

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

According to the SER, KAUKO teaching staff has the opportunity to participate in various mobility programs and this participation is evaluated during the certification of teaching staff. In the evaluated period, KAUKO has concluded 16 (10 outgoing and 6 incoming) bilateral Erasmus+ cooperation agreements with foreign higher education institutions suitable for academic staff visits in the field of Measurement Engineering.

In 2019-2021, 80% of teaching staff members teaching in the Measurement Engineering field participated in the international exchange programs. These rates decreased in 2020 due to the COVID-19 pandemic (restriction of mobility opportunities, cancelled visits, etc.) but in the SER they state that it is planned to increase mobility rates to balance outgoing and incoming academic staff.

(2) Expert judgement/indicator analysis

Although there has been mobility (6 incoming and 10 outgoing), the mobility of teaching staff from other foreign universities should be increased to benefit the international education of students.

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

(1) Factual situation

Academic staff can improve their qualifications by participating in courses, seminars, conferences, internships, exhibitions, consulting and expertise activities, and by participating in international exchange programs or project activities. In the last three years, internal training has been provided to KAUKO staff through various internal training programs, mainly aimed at developing didactic and scientific competencies and detailed in the SER. SPG academic staff have also improved their professional skills by participating in conferences. In addition, during the evaluated period, 7 teachers from Ukraine completed internships in Measurement Engineering at KAUKO.

(2) Expert judgement/indicator analysis.

KAUKO has created good conditions for further training of academic staff through internal training programs.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Young researchers have been recruited to ensure the replaceability of retiring staff.
2. Good conditions for training of the teaching staff.

(2) Weaknesses:

1. There are teachers who teach too many subjects in one field of study.
2. The balance between incoming and outgoing mobility of the teaching staff.
3. Increase the number full-time teachers of the core subjects with the college as their primary affiliation.

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

According to the SER, Professional, up-to-date hardware and software are used for these studies. The infrastructures are relevant, accessible to students and sufficient to achieve the learning outcomes of the SPG. Annex 7 shows a detailed list of technical, hardware, laboratory and software equipment and the number of workstations.

The final professional internship is carried out in companies under trilateral agreements. Students can find final internship placements personally or choose from a list of companies provided by the Department of IER.

More than half of the SPG graduates are employed on the day of graduation.

(2) Expert judgement/indicator analysis

During the visit, it was verified that there is an adequate number of study rooms, computer rooms and laboratories, which meet health protection, sanitary and safety requirements. The premises for studies are adequate in terms of both size and quality.

The number of laboratories, training classrooms and bases for practical training is adequate to provide education and research in accordance with the curriculum of the study program. The laboratories with instrumental equipment are adequate.

KAUKO has adequate facilities for students' practical work. Students of the study program carry out practical work in geodesy, geology and photogrammetry. There is an adequate teacher-student ratio since there are few students. Measures should be taken to increase the number of students since there are none in the first year.

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

(1) Factual situation

The infrastructure for implementing the SPG is relevant. This allows ensuring the quality of the studies and training of specialists in the field of Measurement Engineering considering the trends of the labour market and the needs of employers.

As can be seen in the SER (table 14), the acquisition of software and hardware is planned every year. Resources are also periodically reviewed and updated considering the learning objective and outcomes, technological advances, industry and business needs, suggestions from the Field of Study Committee, and feedback from students and other stakeholders.

(2) Expert judgement/indicator analysis

In the conversations held during the visit, it was found that there is a review of resources by senior management of KAUKO.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Good learning facilities and resources to achieve the learning outcomes of the SPG.

(2) Weaknesses:

3.7. STUDY QUALITY MANAGEMENT AND PUBLIC INFORMATION

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

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

(1) Factual situation

At KAUKO, the quality management system is described in the Quality Manual. The procedures are adapted to the level of study and comply with international and national legal documents. The quality of education is subject to cyclical assessment by the Committee on Fields of Study, at least every 6 months. In addition, assessment takes place after the end of the academic year, which is carried out by teachers in the form of self-assessment. The annual exercise is the result of this self-assessment. These exercises are approved by the Head of the Department.

The Management Board, the Scientific Council are responsible for maintaining the high quality of studies at the college level, and at the faculty level, them management and the Field of Study Committee. These bodies decide on the need for possible changes in the education process or in the education quality management system.

Generally, this structure resembles the general organization of quality issues in European Universities.

The SER also contains information that the college cooperates with external partners, but it has not been described whether this cooperation is formalized within the framework of the college committee or are these contacts ad hoc. Therefore, question in this issue was gave during meeting with senior management and faculty administration staff.

(2) Expert judgement/indicator analysis

A very good element is the creation of a uniform Quality Book for the entire College. On the one hand, it complies with the legal documents in force in Lithuania, and on the other hand, quality procedures are adapted to the functioning of the college. Meetings with senior management and faculty administration staff, staff responsible for the preparation of the SER and teaching staff confirm that these stakeholder groups are familiar with quality procedures. The expert panel noticed that there are teachers who teach too many subjects (more than 2-3 subjects). It's generally good when teachers give students different knowledge in different subjects, but when they teach the same knowledge in different subjects, it is not sufficient from the point of view of

quality of study. We believe that a review of the subjects allocated to teachers should be carried out to ensure that this situation does not arise in the future.

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

(1) Factual situation

In accordance with the Quality Procedure, the evaluation of the quality of studies is carried out with the participation of internal and external stakeholders. Internal stakeholders are students and teaching staff. Students participate in the evaluation of the quality of the study program through surveys. However, the SER does not specify the frequency of filling them in and how and by whom the analysis of the questionnaires is conducted. In addition, students periodically participate in meetings where learning outcomes are assessed. Graduates take part in research on employment and career advancement. The teaching staff participates in the assessment of the quality of studies by expressing their opinions during the work of the Diploma Theses Evaluation Committees. Employers, as external stakeholders, provide their opinions on the education process as feedback after students complete their internships. In addition, employers provide their opinions during conversations with practice supervisors who are lecturers. The commission evaluating diploma theses and bilateral meetings between the college and the employer have a great influence on the improvement of education. There is no formalized cooperation with external stakeholders. It seems necessary to create an advisory body that would provide its opinions on behalf of entrepreneurs. This would ensure systematic monitoring of the study process and faster impact on the quality of studies.

(2) Expert judgement/indicator analysis

The information from SER which was confirmed during meetings and indicated that external and internal stakeholders are involved. However, the involvement of external partners is too dispersed. It would be better if the contacts were not bilateral but multilateral, e. g. in the form of a business council, which could give a synthetic view of the needs of the labour market and not only of a single company.

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

(1) Factual situation

The SER stated that the college conducts surveys evaluating the process of study among students. In addition, panel discussions are held as part of the "round table". However, the frequency with which these events are organized has not been specified. It has not been specified which of the internal and external stakeholders are involved in these projects. From which years of study students take part in the survey.

The College collects all data necessary to conduct studies, including sensitive data that is only available as part of the internal study management system. On the website, study programs, results of external evaluations, analyses of surveys conducted among students and templates of documents necessary for students are available.

The SER shows that information on the quality of education is presented at meetings of the faculty responsible for the field of study, the Management of the Faculty (once a month), at meetings of the SFC (twice a year). Analyses of this information are carried out after the end of the academic year.

(2) Expert judgement/indicator analysis

During meetings at the college, questions were asked about the composition and frequency of meetings of external and internal stakeholders. The answers provided shed some more light, but did not dispel all inaccuracies. Quality procedures should clearly specify the frequency of meetings of all statutory bodies of the college. In addition, the stakeholders for whom a specific action is implemented should be precisely defined.

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

Students have the opportunity to express their opinion on the quality of studies twice a year in the form of answers to surveys. Surveys are carried out using a management system.

In addition, first-year students complete a survey informing universities about the motivation to study in a given field of study, their expectations and adaptation at the Faculty.

The results of the analyses of the conducted surveys are discussed at the Department and Faculty level and are available on the Faculty's website. The results of the analyses are used to improve the study program and work of the Department and the Faculty.

(2) Expert judgement/indicator analysis

The information contained in the SER was confirmed during meetings in College. In the opinion of experts panel, the surveys should not only help to maintain the quality of studies, but should also help in planning promotional activities of the college in order to increase the number of students in the evaluated field of study. It is not good for the college when there are no students in the first year of study.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Having one Quality Book for the entire college.

(2) Weaknesses:

1. Cooperation with external partners can be improved in order to obtain synthetic knowledge about the needs of the labour market.
2. There are teachers who teach too many subjects in one field of study.

IV. RECOMMENDATIONS

Evaluation Area	Recommendations for the Evaluation Area (study cycle)
Intended and achieved learning outcomes and curriculum	As the practices are mandatory, colleges should make sure students have good opportunities to carry the practices out and offer some places to do it.
Links between science (art) and studies	Increase the number of research works commissioned in the field of geodesy.
Student admission and support	<p>Creating better conditions for students to study abroad for increasing their number.</p> <p>Creating action plan for increasing number of students on first year of study.</p>
Teaching and learning, student performance and graduate employment	Increasing of social partners number for formal and informal cooperation.
Teaching staff	<p>Increase the number full-time teachers of the core subjects with the college as their primary affiliation.</p> <p>Reduce the number of subjects assigned to a single teacher</p>
Learning facilities and resources	N/A
Study quality management and public information	<p>Change the quality procedures so that their effects help in the promotion of the college.</p> <p>Conducting an analysis of the allocation of subjects for teachers.</p>

V. SUMMARY

Kauno kolegija is a state-owned college. Academic staff makes major contributions in their fields of research works. For this reason, position of KAUKO in research world is growing. Graduates of measurement engineering are in high demand on the labour market. Therefore, education should be at the highest possible level which is realized in KAUKO. The experts panel would like to thank you very much for the professionally prepared Self-Evaluation Report, which helped a lot in preparing the External Evaluation Report.

The experts panel noted, from the interview with the students, that they are satisfied with the chosen field of study. They appreciate the close contact to their teachers and also appreciate the many forms of support offered to them. The experts panel had a very positive impression of the connections and relationships that the faculty has developed with social partners, academic institutions, and employers, who expressed their satisfaction with the qualifications that graduates obtained during their studies.

The experts panel positively evaluates: creating of Quality Book which complies with the legal documents in force in Lithuania, and quality procedures are adapted to the functioning of the college, high students' activity during conferences and other national and international events.

It is commendable that College provides short academic mobility opportunities for students that are not able to go abroad for a whole semester. Nevertheless, more attention should be paid in order to inform students about other academic mobility opportunities and their benefits as well as encourage them to use it.

The suggestions for improvement made in this report partly refer to: there are teachers who teach too many subjects in one field of study (it should be improved in next academic years), increase the number of research works commissioned in the field of lower geodesy.

Number of students applying to study in this field is decreasing. Since not enough students have enrolled in 2022 to form a group it imposes one of the biggest risks for this study field. It is a matter of concern that requires implementing measures to attract more students.

The only major point of concern the experts panel identified is small number of students in the evaluated field of study. The experts panel proposes to increase the activity of the college and during the recruitment period.

At the end experts panel would like to thank all staff, students, social partners and administration staff involved in evaluation and took part in our meetings for their commitment and help during site visit. We wish to assure all concerned that we have made every effort to scrupulously analyze the evidence presented to us and have thoroughly discussed and considered our recommendations.

Expert panel chairperson signature:	Prof. dr. Krzysztof Czaplewski (signature)
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