



CENTER FOR QUALITY ASSESSMENT IN HIGHER EDUCATION

EVALUATION REPORT

STUDY FIELD

ELECTRICAL ENGINEERING

at Klaipėda State College

Expert panel:

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Study Field Data*

Title of the study programme	<i>Electrical and automation engineering</i>
State code	6531EX014
Type of studies	College studies
Cycle of studies	First
Mode of study and duration (in years)	Full-time, 3, Part-time, 4
Credit volume	180
Qualification degree and (or) professional qualification	Professional Bachelor of Engineering Sciences
Language of instruction	Lithuanian
Minimum education required	Secondary
Registration date of the study programme	2002-08-30

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

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I. INTRODUCTION

1.1. BACKGROUND OF THE EVALUATION PROCESS

The evaluation of study fields is based on the Methodology of External Evaluation of Study Fields approved by the Director of Centre for Quality Assessment in Higher Education (hereafter – SKVC) 31 December 2019 Order [No. V-149](#).

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

The evaluation process consists of the main following stages: 1) *self-evaluation and self-evaluation report prepared by Higher Education Institution (hereafter – HEI)*; 2) *site visit of the expert panel to the higher education institution*; 3) *production of the external evaluation report by the expert panel and its publication*; 4) *follow-up activities*.

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

The study field and cycle 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 completed according to the Experts Selection Procedure (hereinafter referred to as the Procedure) approved by the Director of Centre for Quality Assessment in Higher Education 31 December 2019 [Order No. V-149](#). The site-visit to the HEI was conducted on-line by the panel on 8th December 2020.

Prof. Dr. Laszlo Tamas Koczy (panel chairperson), professor of Széchenyi István University, Department of Information Technology, professor of Budapest University of Technology and Economics, Department of Telecommunications and Media Informatics, Hungary;

Prof. Dr. Toomas Rang, Professor Emeritus of Thomas Johann Seebeck Department of Electronics; Tallinn University of Technology, Estonia;

Prof. Dr. Žilvinas Nakutis, professor of Kaunas University of Technology, Department of Electronic Engineering, Lithuania;

Dr. Matthew Armstrong, senior lecturer of Newcastle University, School of Electrical & Electronic Eng., U. K.;

Dr. Andrius Šablinskas, Sales Director at Schneider Electric Lietuva, Lithuania;

Mr. Ruben Janssens, student of Ghent University, study programme in Computer Science Engineering, Belgium.

1.3. GENERAL INFORMATION

The documentation submitted by the HEI follows the outline recommended by the SKVC. Along with the self-evaluation report and annexes, the following additional documents have been provided by the HEI before the site-visit:

No.	Name of the document
1	Subject Descriptions for 6 modules; (i) automatic control, (ii) installation of electrical equipment, (iii) enterprise electrical systems, (iv) hydraulic and pneumatic systems, (v) automation of technological processes, (vi) programmable automation controllers)
2	National Student Survey results

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

Klaipeda State University of Applied Sciences is a state higher education institution of the Republic of Lithuania. On 6 August 2009, Klaipeda College was merged with Klaipeda Business and Technology College and the name was changed to Klaipeda State University of Applied Sciences. On 24 August 2011 KVK status was transformed from a budgetary institution to a public institution. The academic subdivisions of the KVK are the Faculties of Technology, Health Sciences and Business, where 25 study programs are implemented in 21 study fields.

The study program of Electrical and Automation Engineering in the field of Electrical Engineering (hereinafter referred to as EAI) is implemented in the Faculty of Technology of Klaipeda State University of Applied Sciences. The faculty has four departments (Engineering and Informatics, Environmental and Civil Engineering, Transport Engineering, Food Technology and Nutrition), where ten study programs are implemented.

II. GENERAL ASSESSMENT

Electrical Engineering study field and **first cycle** at Klaipėda State College is given **positive** evaluation.

Study field and cycle assessment in points by evaluation areas.

No.	Evaluation Area	Evaluation of an area in points*
1.	Study aims, outcomes and content	4
2.	Links between science (art) and study activities	3
3.	Student admission and support	4
4.	Studying, student performance and graduate employment	4
5.	Teaching staff	4
6.	Learning facilities and resources	5
7.	Study quality management and publicity	4
	Total:	28

*1 (unsatisfactory) - there are essential shortcomings that must be eliminated;

2 (satisfactory) - meets the established minimum requirements, needs improvement;

3 (good) - the field develops systematically, has distinctive features;

4 (very good) - the field is evaluated very well in the national and international context, without any deficiencies;

5 (exceptional) - the field is exceptionally good in the national and international context/environment.

III. STUDY FIELD ANALYSIS

3.1. STUDY AIMS, OUTCOMES AND CONTENT

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

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

(1) Factual situation

The SER provides a detailed and clear evaluation of the aims and outcomes of the Electrical and Electronic Engineering study field. The aim of the EAI programme is primarily to meet the needs of the labour market. The SER states that the Aims and Outcomes of the EAI study programme are informed by the Klaipeda Economic Development Strategy 2030 [Lithuania Progress Strategy 2030; <https://www.lietuva2030.lt/en/about>]. This strategy appears to outline areas of key strategic development for Lithuania, and highlights fields such as Smart Society, Smart economy, and Smart Management as key areas for business and science cooperation in the future. The SER also refers to key technological fields such as Energy, Sustainable Environment, New Production Processes, and Materials. These are well recognized global challenges of the 21st Century. EAI as a subject area has a significant role in contributing towards these challenges.

A lack of qualified engineering professionals with knowledge of information and digital technologies is identified as a persistent trend in the labour market. The EAI programme aims to address this by training “highly qualified competitive electrical engineers who are able to solve complex problems of technological equipment and systems, electricity, automation, modernization, energy efficiency and operation”. At a local employment level, the SER refers to a “Lithuanian Labor Exchange employment opportunities barometer” survey, which identifies significant opportunities for electrical technicians and electrical engineers in Western Lithuania. It is stated that 93.33% of employers assess the competencies of KVK EAI trained specialists as compliant with the labour market. [SER, 1.1.1., page 6].

(2) Expert judgement/indicator analysis

The panel judges that the aims and outcomes of the Electrical and Electronics Engineering study programme meet the needs of both society and labour market. This judgement is informed by the broadly positive opinions of Alumni and Social Partners at the site visit. Alumni confirm that the study programme prepared them well for the industry. Likewise, employers confirm that the programme relevant theoretical and practical skills training. Finally, some staff at the site visit highlighted their own current personal industry experience, thus demonstrating awareness of labour market needs.

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

(1) Factual situation

The KVK mission is to implement high-quality higher education studies based on professional practice, applied research and experimental development, and to create conditions for lifelong learning. The aim and outcome of the EAI study program is to ensure the compliance of the study content with the needs of the labour market, providing quality student professional practice, development of innovative teaching / learning methods, and development of study internationality.

(2) Expert judgement/indicator analysis

The panel concludes that the aims and outcomes of the EAI study programme meet with the main mission, objectives, and strategy of the HEI. The SER identifies the aim and study outcomes of the EAI study program are in line with the KVK 2020–2022 strategic action plan. Further explanation of this was provided at the Senior Management meeting during the site visit. Further discussions with the staff, students, and social partners provided clear evidence that the primary focus of the EAI programme is providing graduates for the local industry.

With regards to study internationality, whilst some examples are identified in the SER and corroborated at the staff meetings at the site visit, the panel consider that participation in student mobility as an area for potential improvement within the EAI study field.

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

(1) Factual situation

The volume of the study of the EAI programme is 180 credits, which meets the overall credit requirements as we understand it. There are 36 credits of practice (minimum legal requirement: 30 credits), and the final thesis contributes 12 credits towards the EAI programme (minimum legal requirement: 9 credits.) The EAI programme significantly exceeds the minimum legal requirements for student independent work at 54% (legal minimum 30%) and contact work at 46% (legal minimum 20%). In addition, the SER cites 30% researchers teaching in the field of study (legal minimum 10%) [SER, Page 7] .

(2) Expert judgement/indicator analysis

The panel judges that the EAI study field at KVK meets with the legal study requirements.

Evidence to support the factual statement is provided by the Annex 1 documentation. Annex 1 provides a detailed breakdown of individual modules, and the proportion of key activities such as; Lectures/Practical Sessions and Seminars/Consultation Hours/Student Individual

Work/ Assessments. Evidence to support the number of researchers teaching in the field is provided in Annex 4; 17 members of staff are returned and 14 have at least one significant piece of work published in the last 5 years.

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 SER identifies the programme study results for the EAI programme, this is broken down into 6 fields: 1. Knowledge and understanding, 2. Engineering analysis, 3. Engineering design, 4. Applied research, 5. Solving engineering tasks, 6. Personal and social skills. The SER demonstrates the relationship between the EAI study programme modules and the programme study results. This table shows that all study programme results are covered by the modules. Annex 1 provides a detailed Study Plan breakdown for the EAI programme. Annex 1 provides a detailed breakdown of individual modules, and the proportion of key activities such as; Lectures/Practical Sessions and Seminars/Consultation Hours/Student Individual Work/ Assessments. The connection between study results, study methods, and evaluation methods are highlighted in Annex 3. A wide range of study and evaluation methods are defined, demonstrating a broad skills based evaluation approach.

(2) Expert judgement/indicator analysis

The panel judges that the aims, learning outcomes, teaching and assessment methods are appropriate and valid for the EAI subject field. It noted that typically each individual study programme result is confirmed by at least 3 different study subject modules. As such, there is no over-reliance on a single module to deliver learning outcomes. This is expected practice.

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 modules of the study programme are typical of an Electrical Engineering and Automation degree. Students have the ability to specialize in one of two elective “specialisms”; Control of Process Units and Systems, or Consumer Electrical Equipment and Electrical Networks. Students study 21 credits within their specialist area. All major topics are covered by the compulsory modules, and some degree of further specialization is offered via elective modules. The modules appear to be arranged in a logic sequence. The first stages of the programme focus on fundamentals such as Mathematics, Physics, Informatics, etc. This provides a strong foundation for any Engineering Professional Degree. Latter stages of the programme offer more specialised topics, such as Installation of Electrical Equipment,

Automation of Technological Processes, Pneumatic systems etc. These subjects are more specifically targeted to specialist skills and the aforementioned requirements of the labour market. All subjects are interconnected by reflection on practice and theory.

(2) Expert judgement/indicator analysis

The panel considers that the Electrical and Electronic Engineering study field at KVK ensures consistent development of student competencies. Annex 2 provides a clear and comprehensive overview of modules on the EAI study programme. The content of the programme looks comprehensive and supports the SER statement that the topics are interconnected and provide a consistent process of student education. Annex 2 shows there is a balance of modules across Electrical Engineering, Design, and Automation fields. Important emerging trends, such as IoT, are also incorporated into the programme. Following a further information request by the panel, the syllabus of a subset of modules from across the programme was considered by the panel. This confirmed comprehensive coverage of individual topics. The syllabus for these modules seemed comparable, and to an equal standard, to other national and international Electrical Engineering programmes at other institutions familiar to the panel.

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 have the ability to select one of two elective “specialisms”; Control of Process Units and Systems, or Consumer Electrical Equipment and Electrical Networks. Students study 21 credits within their specialist area. Students can individualize the structure of the study program by choosing elective subjects. 6 credits (2 subjects of 3 credits each) are allocated for this in the study program. According to the study plan, they are provided in the third and fourth semesters of full-time studies and in the fourth and fifth semesters of extended studies.

(2) Expert judgement/indicator analysis

The panel judges that the EE study field at KVK ensures clear opportunities for students to personalize the structure of their programme according to their personal objectives. Whilst the number of purely elective modules on the programme is only 6 credits, the two elective subject specialisms provide ample opportunity for students to achieve personal learning objectives.

Evidence from the programme study plans shows clear distinction between the subject specialisms.

Control of Process Units and Systems includes the following subjects; Hydraulic and Pneumatic Systems, Automation of Technological Processes, Building Management Systems, Programmable Automation Controllers. Whilst Consumer Electrical Equipment and Electrical Networks includes the following subjects; Energy in Companies, Electrical Technology Equipment, Electrical Equipment Automation Systems. Importantly, the subject specialisms and elective modules align particularly well with student demand and the requirements of the labour market. This was confirmed at the site visit. Students provided the panel with strong evidence that the course content met their personal learning objectives. When questioned at the site visit, students demonstrated awareness of the two streams and elective choices on the programme. For the students present at the meeting, most chose automation related topics, believing these provided a clear pathway to employment opportunities in the region. The Self-evaluation report suggests the list of subjects which make up the two specialisms is updated according to the needs of employers and experts in the field of electrical engineering. This was confirmed at the site visit when discussing the programme with alumni and social partners. Several provided clear evidence of having input on the academic syllabus and advising on required graduate skills. The panel concluded that there are strong links between academic staff and employers, and the programme benefits from this.

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

(1) Factual situation

The Final thesis is worth 12 credits. Students follow the procedure of preparation, defense, and storage of the final theses of the KVK and the methodological instructions of the Study written works of the Faculty of Technology. For the final thesis, students demonstrate the knowledge acquired during the studies, the ability to analyze and apply practical skills. The topics of the final theses are coordinated with social partners, and a significant part of the thesis is prepared according to the orders of the company. The right to prepare and defend the Final thesis is granted to a student who has fulfilled all the requirements of the study programme. Defense of the thesis is in the presence of a qualification commission consisting of at least two social partners. Students who have not defended their final thesis are given the opportunity to defend their thesis at the next meeting of the Qualification Commission, but not earlier than after one year. In the last two years, 50 students of the EAI study program have defended their final theses. The average evaluation of the final theses is stated as 8.1 points.

(2) Expert judgement/indicator analysis

The panel judges that the Final Thesis for the EAI study field at KVK complies with the field and cycle requirements. Annex 2 provides a detailed list of the thesis titles. Many are clearly linked to company interests and cooperation between companies and KVK is reported to be going well. All appear well within the field of EAI. Students solve topical problems; examples

stated include: automation of equipment and technological lines, carry out research and prepare recommendations for efficient use of electricity.

Recommendations for this evaluation area:

- Given the current pandemic situation, to continue to develop remote delivery content.

3.2. LINKS BETWEEN SCIENCE (ART) AND STUDY ACTIVITIES

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

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

(1) Factual situation

Applied Research Activities (ARA) are planned in accordance with the research and experimental development priorities approved by the KVK Director, and indicators in strategic action plans. Research priorities are informed by Lithuanian and International research priorities, national and local needs (private and public), and the competence of KVK researchers. KVK carries out annual quantitative and qualitative evaluation of applied research activities. The SER states that the quality of research in the field of electrical engineering was assessed as “good” in 2019.

Annex 4 provided a list of notable publications for members of staff in EAI; this provides clear evidence of some research engagement by most members of staff over the last 5 years. Based on the evidence provided, the panel noted the following as examples of internationally recognized research:

- Stanelytė D., Radziukynas V. Review of Voltage and Reactive Power Control Algorithms in Electrical Distribution Networks (<https://doi.org/10.3390/en13010058>). Energies. ISSN 1996-1073. Vol. 13. 2020. Article ID 58. p. 1-26.
- Stanelytė, Daiva; Gudžius, Saulius; Andriušienė, Liudmila. Energy distribution planning models taxonomy and methods of distributed generation systems // Energy procedia : 3rd international conference on energy and environment research, ICEER 2016, 7-11 September 2016, Barcelona, Spain. Amsterdam : Elsevier. ISSN 1876-6102. 2017, vol. 107, p. 275-283.
- Stanelytė, Daiva; Deveikis, Tomas; Vanagas, Jonas; Zelba, Mantas; Artemčiukas, Edgaras. Comparative analysis of forecast methods of wind power plant capacity. IEEE 58th International Scientific Conference on Power and Electrical Engineering of Riga Technical University, (RTUCON), 12-13 October 2017, Riga, Latvia. Piscataway, NY: IEEE, 2017. ISBN 9781538638460. eISBN 9781538638460. p. 1-6. DB: IEEE Xplore; Scopus; Conference Proceedings Citation Index - Science (Web of Science).

- Stanelytė D., Radziukynas V. Review of Voltage and Reactive Power Control Algorithms in Electrical Distribution Networks (<https://doi.org/10.3390/en13010058>). Energies. ISSN 1996-1073. Vol. 13. 2020. Article ID 58. p. 1-26.
- Stanelytė, Daiva; Gudžius, Saulius; Andriušienė, Liudmila. Energy distribution planning models taxonomy and methods of distributed generation systems // Energy procedia : 3rd international conference on energy and environment research, ICEER 2016, 7-11 September 2016, Barcelona, Spain. Amsterdam: Elsevier. ISSN 1876-6102. 2017, vol. 107, p. 275-283.
- Dikun, Jelena; Stanelytė, Daiva; Urmonienė, Lionė. Spectral ratio method for fault detection in rotating machines. Balkan journal of electrical & computer engineering. Istanbul : BAJECE Istanbul Technical University. ISSN 2147- 284X. 2018, Vol. 6, no. 2, p. 61-63.

As can be seen from the examples above, staff are engaged with highly relevant Electrical and Automation fields of research, including but not limited to: electrical machines, intelligent systems, power control, wind power, and distributed generation.

(2) Expert judgement/indicator analysis

The panel concludes that the scientific research activities implemented are sufficient and related to the field of study. The panel observe internationally recognized research being carried out by staff at KVK, which has resulted in good quality conferences and journals.

However, the evaluation of research largely appears to be an internal process, and driven by quantity metrics rather than approved quality metrics. This is indicated by the simplistic evaluation of research quality being “good” in the SER and confirmed via questioning of staff on research activities at the site visit.

Distinguishing and recognizing the difference between applied development and genuine “blue skies” research is advised. Likewise, raising the profile of prestigious research activities is recommended. It may be useful for Senior Management to identify highly prized conferences or journals, national and international, within the EAI field which academics should be encouraged to target for publications.

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

(1) Factual situation

The SER states that the Aims and Objective of the EAI study programme are aligned to the Klaipeda Economic Development Strategy 2030 [Lithuania Progress Strategy 2030; <https://www.lietuva2030.lt/en/about>]. Key areas such as Smart Society, Smart economy, and Smart Management are cited. The SER refers to Energy, sustainable environment, new production processes, and materials.

Academic staff have modern practical experience, or are engaged in research which aligns with these strategy areas of importance. A full list of staff areas of expertise is presented in Annex 4. Stated examples of staff expertise include, but are not limited to; modeling and

control of robotic systems, artificial intelligence, smartgrids, HVDC converters, electrical machines, electricity networks, and solar energy.

(2) Expert judgement/indicator analysis

The SER identifies some key themes and challenges; SMART technologies, digital manufacturing, Energy Efficiency, and Renewable Generation and Sustainability. These are well recognised global challenges for the 21st Century, and EAI as a subject area has an important role in contributing towards these challenges. Embedding these themes into the syllabus is clearly good practice.

The SER indicates that the EAI programme employs lecturers with research and/or extensive practical experience. It is further stated that this is obtained via engagement on research projects, internships in companies, and/or combining employed industrial work with KVK. This was confirmed by the panel at the virtual site visit. Senior management confirmed that the majority of staff have at least 3 years practical experience, and there is an expectation this experience should inform the academic content of modules. Supporting evidence was apparent at the meeting with academic staff Teaching staff provided clear examples (Electric drives, Electrical Equipment, Automation Processes) of how their work and experience informed the content of EAI studies. Additional positive comments on the EAI syllabus by social partners also gives assurance in the content of the programme.

The strong positive alignment of comments received from Management, academics, and social partners at the site visit gives the panel confidence that the content of studies links very well to the latest developments in science and technology.

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

Research is carried out by students during the learning process through practical / laboratory work, during professional practice at the KVK practical training base or in industrial enterprises. Students are taught the study subject Applied Research Methodology, scientific research activities are carried out, students use research data for the preparation of final theses, articles, and conference reports. The SER states that between 3% and 4% of students per year managed to publish a conference paper (2017 – 2019).

Students also have the opportunity to initiate research themselves by participating in a competition of ideas together with lecturers. The SER provides a very good case example of a student who implemented a sports electric tricycle in 2016, and in 2020 went on to sign a funding agreement with the Science, Innovation and Technology Agency (MITA). Funding of EUR 52,173.98. is allocated to the project for the development of a mobile self-propelled disinfection robot. Students can also gain new experience by participating in various national

and international competitions. SER mentions annual International Competition Kurzeme's electric installation (Latvia), EIFtronic, Vilnius University of Applied Sciences.

(2) Expert judgement/indicator analysis

The panel considers that there is a good opportunity for students to get involved with scientific activities related to their study programme. Several opportunities are provided to students, either via internal or external competitions, or obligatory aspects of the course such as the thesis project.

It is encouraging to note that some students become actively engaged in research aspects, and a small number of students manage to publish thesis results in conference papers. Laboratories are open for student research and there is financial support for the research projects. The College is encouraged to build upon this and look to increase the number of students publishing work. The College is also encouraged to promote key inspirational student successes to new EAI applicants.

Recommendations for this evaluation area:

- For Senior Management to identify and prioritise highly prized conferences or journals, national and international, within the EAI field. Academics should then be encouraged to target prioritised publications.
- Promote further inspirational student success, such as research achievements and publications, to new EAI applicants.

3.3. STUDENT ADMISSION AND SUPPORT

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

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

(1) Factual situation

The general admission of students is carried out centrally through the Lithuanian Higher Education Association's general admission information system (LAMA BPO IS). Admission is carried out in accordance with documents approved by the Ministry of Education and Science of the Republic of Lithuania regulating general admission to higher education institutions. Pursuant to the above-mentioned legal acts, the rules for admission of KVK students are approved every year by the KVK director. The rules are published on the KVK website. This was checked by a panel member, and it is confirmed that there are three documents in

Lithuanian online. An English Translation of the PDF document titles indicates appropriate and transparent information on admission requirements is freely available to applicants.

Students with at least a secondary education are admitted. A points based system admissions process is in place. Points are calculated in accordance with the Ministry of Education and Science legal requirements.

The SER provides statistical information on submitted applications between 2017 and 2019 [Table 3.1, pg 20]. There are some notable trends in the application data; firstly, the number of applicants has steadily declined over the three-year period (both priority and remaining priority); secondly, the percentage of students meeting the entry requirements for KVK has also substantially decreased from 80% (2017) to only 43% (2019). Between 2017 and 19 KVK appears to have seen a shift in balance between State funded and Non-State funded students in year 1. First year state funded students have declined from 45 (2017) to 21 (2019), whilst non state funded students have increased from 10(2017) to 15(2019).

(2) Expert judgement/indicator analysis

The panel concludes that the student selection and admissions criteria process is suitable, and appropriately publicized. However, it is clear that student recruitment is challenging. Several factors are cited in the SER to explain the declines, including; annual increase in admission requirements, deteriorating demographic situation, deteriorating Lithuanian secondary School results (with particular reference to Mathematics, which has a priority weighting on the competitive admissions scoring process). These challenges were equally described by Senior Management staff and teaching staff at the site visit.

The SER references additional external national reports which infer that the number of students admitted onto engineering and technology programmes of study has decreased significantly between 2015 and 2019; this implies a sector wide challenge for Engineering programmes.

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

Individuals with knowledge and skills acquired through work experience, non -formal learning, self - study, voluntary activities, etc., can formalize their non -formal learning outcomes. As stated in the SER, the principles for this are set out in a cited KVK document; “Order of evaluation and recognition of non-formal learning and self-education learning achievements in Klaipeda State University of Applied Sciences”. Over the period of analysis, the SER reports that no applicant took advantage of this procedure.

(2) Expert judgement/indicator analysis

Whilst no applicants took advantage of the procedures for recognition of foreign, prior studies, and acquired qualifications, a clearly defined process exists and is advertised to applicants. As such, the panel is satisfied that appropriate procedures are in place should an applicant wish to follow this route.

3.3.3. Evaluation of conditions for ensuring academic mobility of students

(1) Factual situation

An International Relations Department at KVK organises student exchanges and promotes participation in International projects. KVK participates in bilateral agreements, such as Erasmus+. The SER states that KVK has Erasmus partnerships (58 in total) with institutions in 16 countries. These opportunities are promoted to students through twice per year meetings with students, regular email information, and communication via staff. Three case examples are highlighted in the SER; two students studied at Warsaw Polytechnic University, Poland, and one at Leiria Polytechnic Institute, Portugal, in 2019. Debrief meetings are held with students after their mobility experiences.

However, overall, uptake on foreign University study opportunities for studies or internships is regarded as low; surveys suggest that this is due to concerns around loss of existing employment and reluctance to change the study environment. No students have come to KVK from abroad for full EAI studies in the reporting window.

(2) Expert judgement/indicator analysis

The panel judges that KVK has appropriate procedures in place to allow for academic mobility of students, but that uptake is low and could ideally be improved. Some good international examples were presented at the site visit, but overall there were few. Both staff and students confirmed the evidence present in the SER. At the student meeting, the panel specifically noted that students appeared too scared to take up international placement opportunities. In particular, students in local employment considered such placements too risky and expressed a preference to remain in local work.

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

KVK has a system for providing academic, psychological, financial, and social support. The SER sets out further description of the offer to students in relation to academic support, help from a psychologist if needed (by appointment), scholarship eligibility, loans, arrangements for

students facing financial hardship, and disability support. The forms of support, and where to apply, are set out on the KVK website according to the SER.

The SER provides a breakdown of financial support offered to students from 2017 to 2019. By far, the most popular form of Scholarship award is the “Premium (one-time Scholarship)”. The number of loan awards is relatively low. Likewise, the number of social scholarships, targeted benefits, and gifted student scholarships is low.

(2) Expert judgement/indicator analysis

The panel concludes that the academic, financial, social, psychological and personal support provision is very positive. A panel member reviewed the English version of the website to confirm the claims of the SER, and found a comprehensive webpages providing information on all declared areas of student support. Where appropriate, students are clearly signposted to relevant departments or websites for further information. Information is well organized, clear, and seems in excellent order. First year students get additional consultations on Physics, Mathematics and CAD for better adaptation to the programme. Given the well recognized sector wide retention challenges associated with Electrical Engineering programmes, and the lack of mathematical skills often being highlighted as a contributing factor, the panel considered this to be a very good student centered initiative.

A number of Scholarships are awarded to students. At the virtual site visit, students indicated that these Scholarships had a positive influence on choosing the EAP programme. Hence, they appear to be having the desired effect.

The EAI programme appears to be targeted towards the labour market, and industry appears to have input on the programme content, thesis projects, and has a clear desire to recruit quality graduates. Therefore, it is curious why there are so few social sponsor support scholarships.

3.3.5 Evaluation of the sufficiency of study information and student counselling

(1) Factual situation

The SER refers to an induction programme for first year students (adaptation programme), which supports students with the integration into Higher Education. This is supported by academics, professional services such as the library, and senior members of staff such as the Vice-Dean. Student surveys are carried out to determine the effectiveness of the induction programme, and this is a good example of listening to student feedback. There is student representation on the Study Programme Committee, KVK Academic Council, and Council. A student counselling service is provided, and relevant information is provided on the website for students.

(2) Expert judgement/indicator analysis

The panel judges that sufficient study information and study counselling are provided to students. This is achieved via a combination of the College website, first year induction processes, and student participation on student programmes and KVK academic council committees. At the virtual meeting, students confirmed the sufficiency of the study information. They confirmed class representatives/captains represented them at College committees. No students had engaged with the student council, so they were not in a position to comment on this. Students also reported strong support from lecturers and a good information flow.

Recommendations for this evaluation area:

- In view of the challenging recruitment environment, more explicit and aggressive marketing of the EAI programme is recommended. This should include further cooperation with companies and Secondary Schools to increase younger pupils' interest in engineering.
- Investigate means to increase the number of industrial partner scholarships. If the demand for Electrical Engineers is high in Western Lithuania as stated, and graduate supply is short, then investment from industry in the training and development may be viable. This may further support student recruitment and retention.
- Review of the entry requirement strategy for the programme, given the background of declining numbers and the deteriorating social demographic. There may be perfectly acceptable reasons for the strategy, for example meeting legal requirements, but the current strategy seems to be making it even harder to recruit in an already challenging environment.

3.4. STUDYING, STUDENT PERFORMANCE AND GRADUATE EMPLOYMENT

Studying, student performance and graduate employment shall be evaluated according to the following indicators:

3.4.1. Evaluation of the teaching and learning process that enables to take into account the needs of the students and enable them to achieve the intended learning outcomes

(1) Factual situation

The SER states each lecturer introduces their subject in the first lecture; content, study goals, outcomes, study methods, assessment, and relevant literature are covered. Links to the competencies necessary for a specialist are outlined. "Formed and cumulative" assessment methods are applied. For example, assessment of projects, practical activities or individual work reports, assessment of practical skills, assessment of student presentations during

seminars and exercises, testing of knowledge and skills, assessment of case studies, assessment of group projects. Student achievement is measured by the results of these assessment methods and is based on objective criteria. This is monitored by staff, and may be used for self-evaluation purposes by students.

54% of the overall programme study is allocated for independent work. Forms of students' independent work include formation of practical skills, acquisition, consolidation of new knowledge and skills, development of new ideas. Lecturers support students with these activities by formulating the aims and objectives of the work, supporting the work itself by providing consultations, and setting the criteria for assessment.

Academic Progression opportunities - EAI Professional Bachelor graduates have the opportunity to continue their studies at Lithuanian and foreign universities and pursue a master's degree. Demand for this seems very low, with only one graduate continuing to higher level studies.

(2) Expert judgement/indicator analysis

The panel judges that the teaching and learning processes take into account the needs of the students and enables them to achieve intended goals. Students offered a positive assessment of the teaching and learning processes at the virtual site visit and confirmed a range of different delivery and assessment styles. Whilst the SER outlines the broad principles of supporting student learning and helping them to achieve academic goals, it does not explicitly consider aspects of differentiation and the principle of meeting the needs of all students regardless of ability. To a good extent this was confirmed at the site visit, but it is a point the College may consider commenting on directly in future SER reports.

In response to the COVID-19 pandemic, lecture recordings are being provided to students. Students also report good online communication. These findings indicate the college organises its pandemic distance education well.

The reasons for a relatively high drop out rate of students are monitored. However, remedial measures are not known by the College similarly as in other HEIs of Lithuanian in the engineering study field. Intensive full time employment of students studying full time, or even half-time, studies is probably an underestimated reason. Despite the virtual meeting students declaring priority of studies over employment and the opportunity for flexible study schedules, the panel still has reserved opinion regarding students' ability to successfully combine both work and study potentially impacting a high dropout rate. It also appears that some students underestimate the demands of the programme when enrolling.

However, the panel note that to a great extent this is outside the influence of the College itself, and is a student responsibility. The panel also note that the College offers flexible study arrangements to students with employment commitments, and students referred to this at the Student Meeting on the site visit. As such, the panel conclude that good measures are being

taken on the College side to mitigate high dropout rates due to student employment responsibilities.

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

(1) Factual situation

The SER States: “KVK study process is adapted for socially vulnerable groups of students and students with special needs. Students are provided with individual consultations with the lecturer, as well as psychologist consultations. Students with special needs can study according to an individual study plan, free study attendance schedule.”. No students were present at the virtual meeting who needed access to such study plans. However, some commented on the flexible study arrangements which were afforded to them due to employment commitments, and it is possible to see how similar arrangements might exist for students with special needs.

(2) Expert judgement/indicator analysis

The panel believes that access to study for socially vulnerable groups and students with special needs is acceptable. The SER provides sufficient comments to provide a judgement, but it is noted that additional points of clarity would have been useful in some areas. For example, the SER does not explicitly state who is responsible for developing individual study plans for students with special needs. Is this a lecturer, or a specialist member of staff with expertise in special needs? The independence of the latter is typically preferable.

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

EAI student progress is systematically monitored at the individual, departmental and faculty level: i) lecturers are responsible for monitoring, informing, and assisting students' progress ii) the department discusses the achievements of students twice a semester and plans corrective actions to improve the quality of studies. iii) students' achievements are analyzed at the faculty level according to study programs and study subjects at the end of each semester.

The panel evidenced a rather high drop-out rate of the programme students. The share of students who completed their studies on time in 2017 was 52 %, in 2018 - 34% and in 2019 - 39%.

Students who have dropped out of studies are surveyed to identify problem areas and improve the study process. The SER concludes the reasons for dropping out of studies can be divided into three groups: i) personal ii) financial iii) academic.

At the site visit, the issue of individual study plans was clarified. Academic staff provide support to those students who have work commitments, by offering flexible access to laboratories and academic consultations. As such, this provides some degree of individual study plan. However, with regards to non-academic personal matters, appropriate staff are available within the College to support students with their study planning. Information on the student support pages of the website appears to confirm such support services.

(2) Expert judgement/indicator analysis

The panel concludes that the system for monitoring student progress and feedback to students is adequate. Data is reviewed at both subject and faculty level, and at appropriate times throughout the academic year. At the virtual site visit, students confirmed receipt of appropriate levels of feedback.

3.4.4. Evaluation of the feedback provided to students in the course of the studies to promote self-assessment and subsequent planning of study progress

(1) Factual situation

KVK uses the Advanced Study Management System (EDINA), where students can review their semester interim and final assessments, and the lecturer can provide individual comments to the student. The SER implies that students are satisfied with the feedback provided by the lecturers on a regular basis.

(2) Expert judgement/indicator analysis

The panel concludes that the system for feedback to students in the course of their studies is good. The use of the online Management System is good practice. At the virtual site visit, students confirmed they were happy with the quality of the academic feedback provided.

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

(1) Factual situation

The SER indicates that employment of EAI study program graduates is high - the average is 86%. However, for those working in highly qualified work the average is only 29% (12 months after graduation). KVK carries out surveys of graduates to determine and monitor their career progression. This provides useful feedback for stakeholders and to improve the study process. This feedback from alumni is seen to be very valuable.

(2) Expert judgement/indicator analysis

Overall employment of EAI graduates is very positive, providing additional evidence to support the SER statement on strong employer demand for Electrical and Automation Engineers. However, the number of graduates reported to be in high skill jobs, 12 months after graduation, is rather low.

This was specifically raised with both Alumni and Social partners at the site visit. Both believe that evaluation of graduate outcomes after only 12 months does not provide an accurate reflection of potential career opportunities. Alumni and Social Partners described how graduates may initially be given further company specific training, or manual work, in the first instance to embed them into the company. Employees that proved themselves capable would then often be given promotion opportunities. This may ultimately result in highly qualified design or management positions. However, 3 years is a more realistic interval to achieve such an outcome.

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

(1) Factual situation

KVK has a Code of Academic Ethics, which sets out the norms of the activities and behaviours expected of the academic community; students and staff. Students must sign a study agreement and declaration of academic integrity on arrival at KVK. Students must also declare academic independence and integrity on submitted assessments. Processes are in place to ensure academic integrity on research work, and the SER alludes to procedures and expectations around avoiding plagiarism and gaining academic consent for the use of authors material where appropriate.

To assess the effectiveness of academic integrity, tolerance and non-discrimination policies, the College's annual Student satisfaction survey raises a number of questions where the students can express their views on assessment, study environment, they are asked if the administration units and student representation help them to solve problems. In addition, students can submit their comments, wishes and suggestions. The SER states the average of the answers of the students of the EAI study program (2017-2019) to the question "Is the academic integrity of the students ensured" is 4.17 points (maximum 5 points).

(2) Expert judgement/indicator analysis

The panel concludes that policies are in place to ensure academic integrity, tolerance, and non-discrimination. Academic staff explained the principles of the procedures and students appeared to have awareness of the principles and expectations for good academic conduct.

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

(1) Factual situation

The KVK Appeals and complaints procedure defines the procedure for submitting and examining appeals and complaints. A KVK student has the right to submit appeals to the Dean no later than within five calendar days from the date of publication of the examination assessment regarding: the assessment of the subject study results of the semester; violations for the procedure for the assessment of the subject study results for the semester; satisfactory and unsatisfactory final evaluations of the study results of the studied subject.

Appeals regarding the evaluation of the final thesis are submitted to the Deputy Director for Studies and Science not later than on the next working day after the day of defense of the final thesis. The SER reports no complaints were received regarding the study process between 2017 and 2019.

(2) Expert judgement/indicator analysis

Whilst no complaints were received in the reporting period, the panel judges that the procedures for submission and examination of appeals and complaints are in place and look effective. At the site visit, students generally appeared happy with the EAI programme and had no reason for complaint. However, they generally understood that they had the right to complain or appeal and could consult staff should they feel the need to.

Recommendations for this evaluation area:

- Further evaluate the reasons for high levels of drop-out and possible preventive measures.
- Collect and report on graduate outcomes (graduate position and salary) over a longer period; say 3 years. This will better reflect potential career progression to EAI applicants.
- Promote Masters level opportunities to students.

3.5. TEACHING STAFF

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

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

(1) Factual situation

A list of all Teaching Staff is provided in Annex 4. In Annex 4, 19 members of staff are recorded. The SER reports that all lecturers have obtained at least a Master's degree in a field related subject.

Three staff teaching in 2019-20 have a Ph.D (close to 20%). Following discussions with staff at the virtual site visit, these staff appeared to have links with Klaipeda University (KU) and were engaged in active research projects on Smartgrids, Demand Side Management, and Biosensors.

15 members of staff taught on the programme in 2019-20, and 14 of those have worked for at least 3 years on at least a part time workload on the EAI programme.

The average age of staff is approximately 49 years. Over the reporting period, minimal loss of staff has been reported due to retirement. One example of a member of staff not renewing their teaching contract is given. This is due to industrial work commitments.

It is reported that study programme plan optimisation has allowed the EAP to improve the typical staff student ratio. In the case of labs or practical work, where the number of students may exceed 20, the cohort of students is subdivided into groups and an acceptable staff student ratio is maintained at all times. The staff-student ratio for the field of study has ranged from 15.28 to 17.48 over the last three years. This appears to be well within the legal requirements, set at 20.0.

The SER states KVK employs staff with extensive hands on experience. Staff mobility and competence is supported by possible internships in companies or combining professional work in companies alongside teaching duties at KVK. Most staff have at least one recorded research or pedagogical work output in the last 5 years, as reported in Annex 4, thus providing evidence of pedagogical activity in the field.

It is reported in SER that KVK recently introduced three new courses; Building Management Systems, Relay Protection and Microprocessor Devices, Electrical Safety in EAI programme. Creating a high quality new academic course is a highly demanding human resources task. During the virtual meeting with staff any lecturer contributing to these new courses was not present. The panel has found that College supports developers of new courses by providing qualification courses and collected input from social partners. However, it remained unexplained how new course design is funded or estimated in extra academic hours of contributing teachers potentially leading to staff overload during the period of course materials preparation.

(2) Expert judgement/indicator analysis

The panel positively judges the number, qualifications and competency of the staff within the EAI study field. All legal requirements appear to be met. KVK currently appears to enjoy a

stable, well experienced, teaching workforce with minimal loss or change of staff during the report period.

Two lecturers are studying PhD studies at Lithuanian Energy institute and Kaunas University of Technology. Study and research field is related to the electrical and electronic study programme. They both stated that they involve students in their research by giving related final works.

Most staff have recorded at least one recorded research work in the last 5 years. However, there is considerable variation in the type and quality of the research output; taking into account normal measures of research quality such as journal quartile ranking, impact factor, and citation h-index. A significant proportion of research activities appear closer to industrial collaboration and development. For example, as discussed at the virtual site visit, there are some notable key “blue skies” research highlights including a submitted publication in Elsevier Renewable and Sustainable Energy Reviews, a strong Q1 ranked journal (impact factor ~10).

There appeared a slight hesitation regarding the presence of adequate support for teachers introducing new modules for the programme, mainly in terms of assessing workload peaks demanded by the new module design and teaching materials preparation.

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

(1) Factual situation

The mobility of lecturers in the field of electrical engineering is ensured in accordance with the general rules and conditions of KVK : 1) all lecturers have opportunities to apply for academic mobility; 2) everyone who has passed the selection is given the opportunity to leave; 3) a grant is awarded to cover travel and subsistence expenses, employees are paid an average salary during the business trip. Over the three-year reporting period, it is mentioned in the SER that 12% to 15% engaged in external teaching or learning activities.

(2) Expert judgement/indicator analysis

The panel judges that KVK has clear rules and conditions which permit staff to engage with academic mobility. The Erasmus+ scheme appears to be the dominant means of facilitating lecturer mobility abroad. It is noted that the take up of academic mobility opportunities appears to be rather non-homogeneous across the teaching staff. Therefore, the College is encouraged to target promotion of academic mobility opportunities to those staff who have not engaged in such opportunities for a prolonged period of time. The college is also recommended to continue supporting staff to improve English language competency. This will also help facilitate international mobility opportunities.

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

(1) Factual situation

KVK employs a principle of lifelong learning. Within this, in-service training of teachers is regulated by KVK Statutes. An in-service training plan is prepared each academic year, and is used by lecturers to improve upon their qualifications. An annual interview takes place with each member of staff. Professional development plans are considered, and data on quality of teaching of the subject. The cost of training is met by KVK, EU Structural Funds, or staff members' own finances.

(2) Expert judgement/indicator analysis

The panel concludes appropriate conditions and resources are put in place to improve the competencies of all teaching staff. The SER clearly identifies the process for improving staff competencies. At the site meeting, Senior Management confirmed the principles of the professional development and training process. At the academic staff meeting, individuals outlined case examples of participation with the process.

Recommendations for this evaluation area:

- Target promotion of academic mobility opportunities to those staff who have not engaged in such opportunities for a prolonged period of time.
- Address the support and academic hours accounting procedures for teachers involved in new modules design and implementation.

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 SER describes the facilities of the Faculty of Technology. Overall, the space described is utilised by students from several Engineering disciplines, not just Electrical Engineering. However, the SER identifies that EAI students typically have access to 8 classrooms, 12

specialised laboratories, large computer clusters, and a library with 6 reading rooms and 283 workplaces.

The SER provides examples of various hardware, software, and experiments which are carried out in the laboratories. Video evidence is also provided, as a case example. An array of software is identified, most of this is well recognised by electrical and automation engineering professionals. Students gaining access to this software will be developing core skills required by the industry.

The library appears to be well resourced, with access to various printed and digital reading collections. However, the panel recommends that the College considers ways in which to provide students and staff with access to IEEE databases, given their high quality international reputation within the Electrical and Electronic Engineering field. Printing, scanning and binding services are provided to students. KVK uses Moodle as a Virtual Learning Environment.

(2) Expert judgement/indicator analysis

Overall, there is an impression that the physical and informational resources are excellent.

The panel are satisfied that the library is very well resourced with access to a broad range of printed and digital reading collections. Whilst it is noted that the college does not have access to IEEE databases, it must be recognized that the primary focus of the college is training students for the local industrially focused labour market, rather than the blue skies research which IEEE databases often relate to. This was evidenced at the virtual site visit, where students universally agreed that the informational resources fully met, or exceeded, their expectations. As a result, the panel retains a highly positive view overall.

The panel had the opportunity to review a video tour of the practical facilities within EAI. This was a very comprehensive piece of evidence, lasting approximately 30 minutes, and demonstrated a broad range of laboratory and test equipment (oscilloscopes, power supplies, electric drives, PLCs, electronics etc) which all students on the EAI programme have access to.

Evidence of the recent laboratory upgrades, referred to in the SER, is evident from the video. Most of the facilities look modern and up to date, reflecting emerging technologies and trends in the field. In response to the recent Covid-19 pandemic, the EAI has adapted to provide online virtual labs where practicable. In difficult circumstances, this demonstrates the robustness and flexibility of the modern laboratory facilities.

It is also very good to see that facilities have been upgraded and made accessible for disabled students. Appropriate installations, such as ramps have been installed where necessary.

At the site visit present students and alumni both commented favourably on the practical resources and facilities on the EAI programme, believing them to fully meet their requirements. They specifically mentioned the excellent accessibility of equipment and staff

resources in the laboratories. Social partners further endorsed the high quality of the practical facilities and the practical skills gained by the students.

Overall, the view of the panel is that the practical facilities are exceptional at national level, and very good at international level. The wide breadth of high-quality laboratory facilities across the electrical engineering and automation field is highly commendable.

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

(1) Factual situation

KVK employs a procurement planning process, in which a priority procurement list is generated by teachers, and then fed up the management chain for approval. An annual procurement demand plan and an expenditure plan are drawn up by Senior Management, based on priority need. For EAI, during the period of 2017-2020, the SER indicates two new laboratories (Laboratory of Energy Efficiency and Laboratory of Electrical Equipment Installation) were installed and the Laboratories of Electronics and Microprocessors, Enterprise Electrical Equipment and Automation were renovated.

(2) Expert judgement/indicator analysis

The panel judges that robust procedures are in place for planning and upgrading of resources.

There is clear evidence of this in practice in relation to practical facilities. The panel had the opportunity to review a video tour of the practical facilities within EAI. Evidence of the recent laboratory upgrades, referred to in the SER, is evident from the video. At the virtual site visit meeting, students confirmed the recent upgrade of facilities and supported the view that resources are continuously improving.

Recommendations for this evaluation area:

- Given recent trends, continue to expand the provision of virtual laboratories to facilitate flexible and remote learning. This might also require upgrading of software and simulation tools, for example Matlab/Simulink and Labview.
- Consider ways in which to provide students and staff with access to IEEE databases, given their high-quality international reputation within the Electrical and Electronic Engineering field.

3.7. STUDY QUALITY MANAGEMENT AND PUBLICITY

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

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

(1) Factual situation

KVK follows a Quality Management System, which meets the requirements of EN ISO 9001. The SER describes a Quality Management system typical of other institutions. The KVK quality center collects targeted data on study compliance, analyzes feedback information obtained from annual social participant surveys (i.e. students, graduates' satisfaction with the quality of studies, employers' opinions on KVK graduates' readiness for work, KVK employees' job satisfaction surveys, etc.), by implementing external and internal audits (twice a year). Such information is collected at subject level, and the head of department monitors the performance of each study area. In the SER, Management Performance Indicators are reported to be good for EAI, with the exception of graduation survival rates and 1st course drop out. A 2020 action plan has been instigated by EAI to address this.

(2) Expert judgement/indicator analysis

The panel judges that effective internal quality assurance systems are in place. Areas of strength and weakness, such as student retention have correctly been identified, and action plans are in places to try and address areas of concern. The SER refers to the KVK principle of collective responsibility for improving areas of weakness. It is a positive outcome of the site visit meetings to see this ethos re-affirmed by the comments of Senior Management, academic and administrative staff.

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

(1) Factual situation

At the program level, surveys of students, lecturers, graduates and employers are conducted annually, their analysis is performed, the identified problems are solved promptly if the issue is specific and can be quickly resolved or measures are planned that are included in the department plan. In all cases, respondents receive feedback after the surveys and after the applied measures.

The progress of students' satisfaction with the quality of studies and the effectiveness of the applied measures is monitored annually. Round table discussions where students can share their views are also held every semester. At the site visit meeting with students, it was indicated that students have a class captain/representative who can feedback student quality

related observations to staff and that there is a strong student association that helps students address any issues they may have.

Data on the involvement of social stakeholders in the processes of assessment and improvement of studies in the field and their contribution to the improvement of studies are obtained by conducting surveys, inviting them to discussions, seminars, conferences at the department and faculty, and going to companies. The social partners are directly involved in the study program development process by submitting proposals on the competencies that an EAI student should acquire. Furthermore, theses are specifically discussed and evaluated with employers involved. The SER concludes employers rate the competencies and abilities of EAI students and graduates to perform complex tasks as good. It is stated about 50% of students are employed during or after internships.

(2) Expert judgement/indicator analysis

Overall, the EAI internal quality assurance process seems well supported by all stakeholders including students, academic staff, and social partners. The site visit meetings with staff and social partners indicate some strong links between KVK academic staff and social partners, and this should help support planning in this area.

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 reports that KVK collects and analyzes data on the study process, student admission, teacher certification, applied, experimental and consultation activities of teachers and students, changes in the number of students and reasons for dropping out. The collected data is analyzed by preparing reports on the activities of the department and faculty. This data is used to improve the program implementation and quality assurance process.

Information about the internal evaluation results of the study field is first disclosed to the lecturers and administration, then it is discussed at the meetings of the Studies Programme Committee, the Department, the Faculty community, and the Academic council meetings. Afterwards, the results are presented to students and social partners at meetings, seminars, conferences, meetings of final thesis qualification commissions, study program committee, self-analysis, study program renewal working group meetings.

To evaluate the opinion of employers on the level students' acquired skills and professional competencies, surveys of the employers are conducted.

(2) Expert judgement/indicator analysis

Overall, a comprehensive feedback and action procedure appears to be in place. Feedback is obtained on a regular basis, and this is reviewed and used to improve the study programme. Students reflected positively on the improvements on the programme, suggesting feedback was being proactively considered.

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

EAI student satisfaction is evaluated using two measures: at the study subject level, using the mobile quality evaluation survey application developed by the KVK Quality center, and at the program level - with the students' satisfaction recorded via a study quality survey.

Furthermore, prior to this subject evaluation process, students at KVK were invited to participate in the National Student Survey, initiated and conducted by SKVC. This was conducted by mobile app, and good engagement was shown by KVK Electrical Engineering students. Evidence from the National Student Survey was also considered by the panel.

(2) Expert judgement/indicator analysis

The panel confirms that processes are in place to evaluate the opinion of students on the EAI programme. The panel draws attention to the use of a mobile app to collect student feedback. This was introduced in 2018 and is a good demonstration of modern technology. At the site visit, students expressed a clear preference to engage with student feedback surveys in

With regards to the National Student Survey results, the evidence shows that students have a positive overview of their programme overall. This is perhaps best reflected in the response to the question "Do you recommend this study programme to your friends?". 96% of respondents answered "Yes" to the question.

Recommendations for this evaluation area:

- To continue with the development of the mobile app for student surveys and opinion polls. This seems to be a very popular approach with students and appears to encourage good student participation.

IV. EXAMPLES OF EXCELLENCE

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

- The number of specialised laboratory facilities is particularly impressive for a modest sized subject area (according to the number of programmes on offer, and student numbers). SER states EAI students have access to 12 specialised, well equipped, laboratories. These comprehensively cover all aspects of Electrical Engineering and Automation. Furthermore, KVK continues to invest and develop state of the art practical facilities. Recent upgrades have considered emerging technologies, such as IoT and digitisation. This is further exemplified by the introduction of online virtual laboratories which facilitate remote learning; this has also helped to mitigate some of the dire disruption of the recent Covid-19 pandemic situation.
- Industrial engagement on the programme appears to be very strong; both in terms of curricula input, provision of thesis projects, and skills requirement of industry. This appears to be a particular strength of the provision at KVK.

V. RECOMMENDATIONS

A positive evaluation is submitted. Therefore, the following recommendations are presented for the purposes of supporting continued improvement of the EAI programme:

- In light of the challenging recruitment environment, more explicit and aggressive marketing of the EAI programme is recommended.
- Review of the entry requirement strategy for the programme, given the background of declining numbers and the deteriorating social demographic. There may be perfectly acceptable reasons for the strategy, for example meeting legal requirements, but the current strategy seems to be making it even harder to recruit in an already challenging environment.
- Further evaluate the reasons for high levels of drop-out and possible preventive measures.
- Investigate means to increase the number of industrial partner scholarships. If the demand for Electrical Engineers is high in Western Lithuania as stated, and graduate supply is short, then investment from industry in the training and development may be viable. This may further support student recruitment and retention.
- Collect and report on graduate outcomes (graduate position and salary) over a longer period of time; say three years. This will better reflect potential career progression to EAI applicants, and may help to improve perception of the subject field.
- Promote Masters level opportunities to students. Continuation of academic studies is currently very low. Some of the current cohort of students expressed an interest in Masters, but did not appear to know much about the benefits of doing so.
- There are examples of excellent research taking place at KVK, often in association with other Universities. KVK is now recommended to encourage more Research Leadership within KVK. For example, KVK has qualified PhD level staff who have the potential to apply as Leader on research grants.
- Consider ways in which to provide students and staff with access to IEEE databases, given their high-quality international reputation within the Electrical and Electronic Engineering field.
- Address the support and academic hours accounting procedures for teachers involved in new modules design and implementation.
- Positive steps have been made to improve staff mobility, in response to recommendations from the previous evaluation. However, there is the opportunity to build upon this and improve this further, and KVK are recommended to do so. Erasmus+ is the primary route for mobility, but this alone is not enough. Alternative routes should be investigated.
- Target promotion of academic mobility opportunities to those staff who have not engaged in such opportunities for a prolonged period of time.

- Seek ways to further improve student mobility. There are some excellent examples of student mobility, but many students currently appear “scared” and perceive it as a risk to local employment opportunities. Engagement with social partners may help to address this.
- Given the current pandemic situation, to continue to develop remote delivery content such as virtual labs. This might also require upgrading of software and simulation tools, for example Matlab/Simulink and Labview. The College has the potential to become a leader in this space.
- To continue with the development of the mobile app for student surveys and opinion polls. This seems to be a very popular approach with students and appears to encourage good student participation.

VI. SUMMARY

The overarching assessment of the panel is a positive one. The SER, and supporting supplementary information, provided a detailed and honest review of the EAI programme at KVK. A fair analysis of the strengths and weaknesses of the EAI programme is presented, and aspects of this have been discussed at the virtual site visit. Following the virtual site visit, in almost all areas, the panel were able to confirm the information within the SER

The key exceptional aspect is as follows:

Outstanding laboratory facilities covering a broad range of Electrical Engineering and Automation topics. A commitment to upgrading existing facilities and introducing modern labs for emerging topics. Development of Virtual Laboratories for remote learning.

The key positive aspects are as follows:

The aims, outcomes, and content of the EAI programme are very good, and clearly meet the expectations of the labour market.

Overall, learning facilities and resources are very good. This is confirmed with all stakeholders.

Employment prospects from the programme are very good, although it sometimes takes time to achieve a highly qualified position and salary.

The teaching staff are well motivated and engaged, with 20% having PhD level qualifications.

Evidence of international quality research activities, and Q1 research outputs. The College is encouraged to build upon this.

There are strong links between academic staff and social partners.

Industrial partners and alumni reflect upon the programme in a very positive way.

The negative aspect is as follows:

Recruitment on the EAI programme is challenging, and there is a significant drop out rate after the first year of studies. Aside from the demographic reasons stated during the site visit, increasing entry requirements is making it even more difficult to recruit. It is noted this is a sector wide challenge, and indeed not just reserved to Lithuania.

Students are “scared” to take up international mobility opportunities, for fear of losing local employment. Ways to address this are encouraged.

Expert panel:

1. **Prof. Dr. Laszlo Tamas Koczy (panel chairperson)** *academic,*
2. **Prof. Dr. Toomas Rang,** *academic,*
3. **Prof. Dr. Žilvinas Nakutis,** *academic,*
4. **Dr. Matthew Armstrong,** *academic,*
5. **Dr. Andrius Šablinskas,** *representative of social partners'*
6. **Mr. Ruben Janssens,** *students' representative.*