STUDIJŲ KOKYBĖS VERTINIMO CENTRAS
VILNIAUS TECHNOLOGIJŲ IR DIZAINO KOLEGIJOS
STUDIJŲ PROGRAMOS
ELEKTROS IR AUTOMATIKOS INŽINERIJA
(valstybinis kodas - 653H62011)
VERTINIMO IŠVADOS
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EVALUATION REPORT
OF *ELECTRICAL AND AUTOMATION ENGINEERING*
(*state code* - 653H62011)
STUDY PROGRAMME
at Vilnius College of Technologies and Design

Experts' team:

1. **Prof. dr. habil. Krzysztof Kozlowski (team leader),** *academic,*

2. **Doc. dr. Sergey Shaposhnikov,** *academic,*

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5. **Mr. Ignas Gaižiūnas,** *students' representative*.

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Išvados parengtos anglų kalba
Report language – English

Vilnius
2015

DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	Elektros ir automatikos inžinerija
Valstybinis kodas	653H62011
Studijų sritis	Technologijos mokslai
Studijų kryptis	Elektronikos ir elektros inžinerija
Studijų programos rūšis	Koleginės studijos
Studijų pakopa	Pirmoji
Studijų forma (trukmė metais)	Nuolatinė (3 metai), ištęstinė (4 metai)
Studijų programos apimtis kreditais	180 ECTS
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Elektros ir automatikos inžinerijos profesinis bakalauras
Studijų programos įregistravimo data	2012-02-01 Nr. SV6-4

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INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	Electrical and Automation Engineering
State code	653H62011
Study area	Technological Sciences
Study field	Electronics and Electrical Engineering
Type of the study programme	Higher Education College Type
Study cycle	First Cycle Studies
Study mode (length in years)	Full-Time (3 years), Part-Time (4 years)
Volume of the study programme in credits	180 ECTS credits
Degree and (or) professional qualifications awarded	Professional Bachelor in Electrical and Automation Engineering
Date of registration of the study programme	1st of February, 2012, No SV6-4

CONTENTS

I. INTRODUCTION

1.1. Background of the evaluation process

The evaluation of on-going study programmes is based on the **Methodology for evaluation of Higher Education study programmes,** approved by Order No 1-01-162 of 20 December 2010 of the Director of the Centre for Quality Assessment in Higher Education (hereafter – SKVC).

The evaluation is intended to help higher education institutions to constantly improve their study programmes 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) visit of the review team at the higher education institution; 3) production of the evaluation report by the review team and its publication; 4) follow-up activities.*

On the basis of external evaluation report of the study programme SKVC takes a decision to accredit study programme either for 6 years or for 3 years. If the programme evaluation is negative such a programme is not accredited.

The programme is **accredited for 6 years** if all evaluation areas are evaluated as "very good" (4 points) or "good" (3 points).

The programme is **accredited for 3 years** if none of the areas was evaluated as "unsatisfactory" (1 point) and at least one evaluation area was evaluated as "satisfactory" (2 points).

The programme **is not accredited** if at least one of evaluation areas was evaluated as "unsatisfactory" (1 point).

1.2. General

The Application 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, during and/or after the site-visit:

No.	Name of the document

1.3. Background of the HEI/Faculty/Study field/ Additional information

Vilnius College of Technologies and Design was established in 2008, with the integration of Vilnius Technical College into Vilnius College of Construction and Design. The College of Technologies and Design consists of 4 faculties: the Civil Engineering Faculty, the Design Faculty, the Petras Vileisis Railway Transport Faculty, and the Technical Faculty. They have

around 4,000 students and 400 professors and other staff members. VCTD is a state institution of higher education.

Electrical and automation engineering study programme has been carried out at the Technical faculty from 2012. Two previous programmes were merged into this new study programme. The plan for this study programme was done in accordance with the EU structural funds and MES of the Republic of Lithuania „The improvement of the study quality, the improvement of internationalisation", within the project „Updating engineering study field, introducing innovative learning methods and promoting internationalisation" and assessed by EVALAG agency (Germany) in late planning stage in 2012. It is hard to find in the present SER, how previously formulated recommendations were implemented because implementations are not explicitly described.

Electrical and Automation Engineering study programme is a result of combination of two earlier study programmes: Automation & Electrical and automation equipment that were narrow. As a result of many discussions with social partners Electrical and Automation Engineering study programme was created. It is very popular among students because graduates get jobs and it closely cooperates with social partners. Currently it offers two specialisations: Automation and Control as well as Electric Technologies.

The number of students in this program is much higher than in the more or less parallel Electric Power Engineering (653H63001) programme, especially in full time studies. These two programmes together represent about 10 % of the total volume of activities in the college.

The qualifications gained by the graduates of the Electrical and Automation Engineering are certified by a professional bachelor's degree.

1.4. The Review Team

The review team was completed according *Description of experts' recruitment*, approved by order No. 1-01-151 of Acting Director of the Centre for Quality Assessment in Higher Education. The Review Visit to HEI was conducted by the team on 13th October, 2015.

1. **Prof. dr. habil. Krzysztof Kozlowski (team leader),** *professor at Poznan University of Technology, Poland;*
2. **Doc. dr. Sergey Shaposhnikov,** *associated professor at St. Petersburg State Electrotechnical University, Russia;*
3. **Emeritus Prof. dr. Erkki Lakervi,** *professor emeritus at Helsinki University of Technology, Finland;*
4. **Doc. dr. Gediminas Valiulis,** *associated professor at Šiauliai University, Lithuania;*
5. **Mr. Ignas Gaižiūnas,** *students' representative from Vilnius University, Lithuania.*

II. PROGRAMME ANALYSIS

2.1. Programme aims and learning outcomes

The qualifications gained by the graduates are certified by a Professional Bachelor's degree. The Vilnius College of Technologies and Design is awarding the Professional Bachelor diploma in Electrical and Automation Engineering within two specialisations:

1) Automation and control

2) Electric technologies.

The aim is to educate highly qualified professionals in electrical and automation engineering. In the Self Evaluation Report (SER) very relevant learning outcomes have been mentioned and associated courses listed in a table. By analysing the SER material and the evidence gathered during the on-site visit, it can be concluded that targets regarding applying latest technologies can hardly be reached. However, the contents of the study programme and its learning outcomes are openly shown to publicity and reviewed also with industry people. The learning outcomes are recognized and accepted by group of interest. Despite the fact that this programme was launched rather recently, the number of programme entrants has been rather high.

The aims and expected learning outcomes of the study programme are formed in accordance with the state strategies and forecasts for energy sector prospects. The opinion of stakeholders concerning the study programme was also considered.

The programme aims and learning outcomes are publicly accessible (mostly in the university website www.vtdko.lt and basic information in "AIKOS" information system). The information about the study programme is also published in the fair, exhibitions, and specialised publications.

The programme includes 10 study outcomes in 5 groups (SER, p.11). The quantity and description of the study outcomes is reasonable. The programme aims and learning outcomes are based on the academic and professional requirements, public needs and the needs of the labour market. It is very positive that social partners participate actively in the creation of the study programme.

The programme is divided to two specialisations by variating a few courses. As written in the SER (Table 3), the specialisation "Electric technologies" looks too parallel with a similar programme in this field, but during the site visit it was clarified that this specialization is mainly directed to electric machines while the other study programme is oriented to power systems. Thus they have a clearly separate profile.

In the SER (par. 9) it is stated that "The aim of the study programme is based on the requirements for specialists of engineering study field, as established by the TUNING-AHELO framework of expected/desired learning outcomes in engineering, European Standards for the Accreditation of Engineering Programmes (EUR-ACE) and insights on preparation of professional specialists, revealed in communication with Lithuanian companies' management and specialists". However, the provided learning outcomes have a structure that is not typical to Tuning-AHELO (5 groups of learning outcomes) and EUR-ACE (6 groups of learning outcomes) framework. So in the future learning outcomes of the study programme could be formulated using EUR-ACE methodology, which is typical for engineering study programmes.

Based on the SER and discussions with students, graduates of the programme and social partners, the evaluation team can confirm that the programme aims and learning outcomes are consistent with the type and level of studies and the level of qualifications offered.

In evaluators opinion actual aims and learning outcomes reflect basic scientific and technological knowledge that was recommended by EVALAG evaluation team in 2012. As overall impression of the programme aims and learning outcomes – it is positive. The evaluators have clear impression, that the programme aims and learning outcomes are well accepted by the students, staff and social partners. As stated in the SER (page 8), the social partners indeed introduced new topics in several study subjects.

2.2. Curriculum design

The study programme has been designed on the basis of the Law on Higher Education and Research, Description of General Requirements for Degree-Awarding First Cycle Integral Study Programmes, which governs general principles for programme design and process nationwide. Also the study programme is in accordance with general and special requirements set in Regulations for General Technological Sciences (Engineering). The reviewed programme in general complies with institutional, state and international directives, but does not so much show innovative thinking or sensitive consideration of rapidly changing markets.

As mentioned already, the study programme includes 2 specializations. As described in the SER (p.10-11), the full-time and part time implementation of study programme comprises 41 study subjects, practice, and final project. The scope of the programme is 180 ECTS credits or 4800 academic hours. The number of contact hours is 2401, i.e., about 50% of the total hours. The study programme is in compliance with the legal acts and general college subjects have 15 ECTS, study field 135, specialised study subjects 30 ECTS, practice 30 ECTS, optional subjects 9, and final project 12 ECTS credits. Also, the order of priority in the study plan is very well

designed in order to provide for the next steps (subjects) required knowledge and skills from the previous ones.

The structure of the study programme is based on the requirements for college studies. The order of priority in the study plan has mostly a satisfactory design in order to provide for the next steps (subjects) required knowledge and skills from the previous ones and the distribution of courses per semester seems logical. Going to details, the course Electrical Engineering Materials and Measurement has a strange combination of electric materials and measurement fitted to a single course. According to prerequisites this course may not be taught successfully in first semester studies, as knowledge in physics and chemistry is required. Studying the measurement part of the course background in electronics and circuit analysis is also needed.

The curriculum is well in balance in general. The role of mathematics (6 ECTS only) seems modest, however, for contribution complex phenomena in electricity and automation topics. Electricity markets are offered as an elective subject only. Despite some minor drawbacks, study subjects are spread quite evenly, their topics are not too repetitive, and the content of the courses is consistent with the type and level of college studies. The content of the programme includes some modern achievements in technologies. As the possible recommendation for this part – the study literature should be updated.

The uneven qualifications of incoming students may reduce learning outcomes although this issue is possibly resolved by supporting extra courses for such students.

Referring to the previous evaluation one of the recommendations was to change the name of the study programme to Electric Energy and Automation as a consequence of direct translation from Lithuanian language (Elektros ir automatikos inžinerija) and this was not discussed in SER. Furthermore, because the subject Chemistry does not reflect the latest achievements in science and technology in the electrical and engineering field it should be deleted from the curriculum as this was confirmed during the meeting with graduates (however, this study subject is justified for another programme). During the meeting with teachers, the explanations concerning this issue were not convincing and this recommendation was not yet implemented.

2.3. Teaching staff

Teachers are appointed to their positions according to the legal regulations on the basis of their knowledge, skills and competences.

According to SER, in 2014–2015 study year the staff in the programme Electrical and automation engineering consisted of 34 teachers, including 7 doctors of science, 3 doctoral students, and 10 temporary teachers. The qualification and the size of the teaching staff is quite

adequate to ensure the learning outcomes. The qualifications and the number of the teaching staff are adequate to ensure learning outcomes. As in 2015 (SER, p.17) the average age of the teaching staff is 49.5 and among them aged over 60 years is about 32%, in the range of 46-60 years 26.5%, from 31 up to 45 is 26.5%, and up to 30 years about 15%. This age distribution is reasonable and there are young enthusiastic teachers who are pursuing PhD studies who plan to stay with College after that. More new teachers are welcome to support the study programme that would guarantee continuation of this study programme in view of the fact that the number of students is growing. Since last accreditation number of teachers was increased by 14 teachers. It is worth mentioning that the number of students is bigger as well (74 in the academic year 2014-2015). Typically, all teachers have long experience, both pedagogically and in the speciality of this field. The teachers actively participate in active research and take part in projects that is directly related to the study programme. Such activities were described in the SER (pages 13-14). Some interesting examples could be considered researches in the field of microcontrollers, electrical machinery and transmission areas. This was confirmed during the meeting with teachers, some of them are very active in research in Lithuanian enterprises of electrotechnical sector – it is very positive. Also it is a requirement for the college teaching staff to have experience in the industry, which is also fulfilled.

The teachers are active in the professional development activities. The programme has a core of young teaching personnel with a good potential in the near future to perform high level applied research.

The administration of Vilnius College of Technologies and Design provides possibilities for teaching staff to attend trainee programmes, refresher courses, and exhibitions. The number of participations in science conferences in the academic year 2014-2015 is 10 while in the previous year it was 15. The same situation is observed in participation in traineeship programme courses, seminars and project activities. As the possible recommendation at this point – more activities are desired for the benefits of the study programme. Also doctoral studies for the staff members at universities are considered to improve their qualification and thus it is appreciated. So the overall situation concerning professional development is reasonable but should be further developed.

Faculty academic exchange (SER Table 7) seems modest - more exchange with foreign institutes would be desirable. The concrete numbers are rather small, for example in the academic year 2014-2015 only one teacher took part in the faculty academic exchange and two teachers were incoming. In the previous years these numbers were a bit bigger and that shows room for improvement here. Perhaps also the on average side – quite modest knowledge in English language has limited international contacts. As a recommendation, more activities for

the staff could be suggested, to be more involved in international co-operations, exchanges with other academic and professional institutions, as well as with industry. Referring to the previous recommendations of this area, there are still some points that remain since it they were not fully yet implemented. Nevertheless, this area has continuously improved since last evaluation.

2.4. Facilities and learning resources

The facilities and learning resources comply with the requirements and needs for this study programme. The college has implemented a project in 2013 subsidised by EU structural funds; the reconstruction of the Technical Faculty building and renovation of laboratory equipment have been performed. The implementation of the study programme is performed in 19 classrooms and in 12 laboratories. The premises for studies are very good both in their size and quality.

The practical training classes are carried out in specialised laboratories of Applied Physics, Mechanics, Mechatronics, Electronics, Microcontrollers, Electrotechnics, Electrical Networks, Automation, Electrical Machinery, Electrical Equipment and Control Systems. There are also computer rooms with necessary hardware and software.

It should be emphasized that the teaching laboratories in automation topics are especially versatile and well equipped (compared to another programme under evaluation by the same team of experts). Also an innovation room "hackLab" (supporting several programmes) has been established for supporting interfaces for students´ developments and also for demonstrating the field to secondary school students. E.g. final works in home automation are done in the laboratories.

To perform individual tasks students make use of the library and the reading-room. There is specialised software that is being used in the study process: Lego Mindstorm (open code application used for programming), Unitrain-I (laboratory kits with software). The new advanced electrical power system simulator TERCO PST2000 can be identified as a core experimental platform for electrical network analysis, some of its modules can also be applied for this study programme as well.

The college provides possibilities for practical training for its students locally and at industrial sites. In the college premises for practices are good both in their size and quality.

Teaching materials (textbooks, books, periodical publications, databases such as EBSCO Publishing Taylor Francis and Online Library, for example) are adequate and accessible. The library of VCTD subscribes for science popularisation, publications, e-books, and some databases. Also it should be noted that some new international books have been recently bought that are used by this study programme. Though, such material does not, however, typically

belong to subject requirements. It could be included within the curriculum subjects. Also there is the E-learning environment Moodle which is used in the teaching process, allowing the distribution of teaching materials to students.

The College also provides a certain quantity of materials for the students to work with. This laboratory is appreciated in terms of projects, applied research and extra-curricular activity.

Overall, the facilities have been designed to create an enjoyable overall atmosphere and currently it provides more than enough resources for the successful implementation of this specific study programme.

2.5. Study process and students' performance assessment

Admission to the study programme is performed on a competitive basis following general admission regulations of the Association of Lithuanian Higher Education Institutions and admission regulations approved by the College.

Basic criteria for establishing the average assessment grade are the results of graduation from the secondary education institution and the results of the national maturity examinations. The admission requirements are well founded. The admission of the students is conducted according to legal regulations. The admission to the study programme is carried out in two ways: during the joint admission to the Lithuanian higher educational institutions and the second admission to the vacant fee-paying study places.

A satisfactory number of students have been available to this study programme but in many cases they enter with relatively low grades. Much work should be continuously done to collect well motivated and qualified students. One of the target groups to which the promotion group focuses its activity is secondary schools, gymnasium, vocational school, and higher education institution graduates.

The organisation of the study process ensures a sufficient provision of the programme and the achievement of the learning outcomes. Information about study procedures and career opportunities is given systematically. Students are allowed to change form of studies (full or part time). Occasionally educational visits to enterprises are arranged. In conclusion, it can be stated that the students have a good distribution of their workload. In the SER (page 29) as one of the strong points of study process it is mentioned the possibility for students to study according to individual schedule, however it was clarified during the on-site visit that the procedure and implementation of such possibility is not explained further and students are not so well aware of it.

Programme's students participate the ERASMUS exchange program. E.g., in the year 2014–2015 two students studied in the Bialystok University of Technology (Poland), one in

Anadolu University (Turkey). Nevertheless, these are exactly the same figures that were mentioned in the SER of another study programme under evaluation – it was not clarified whether they are the same people/numbers or not. Still, the College seems not to be encouraging students to participate in mobility programs and there have been no incoming students from other countries either.

On the positive side, the students are encouraged to participate different activities concerning applied research within this programme, different type of contests, sports, culture, etc. It is worth mentioning that some students have made contributions to national conferences. Still, more such activities could be recommended.

The assessment system of students' performance is clear, adequate and publicly available. In full-time and part-time studies, the examinations are distributed evenly during the whole session time. Exam results are released within three days which is really good service for students. Progress and dropouts are analysed systematically. During on site visit it was learned that students are not fully aware of the existing Study Programme Committee (SPC) or possibility to acquire individual study plan. Students with difficult financial situation are eligible for additional support. The College also provides study grants based on study achievements. The College organises career consultations that are favoured by students.

There is about 25% cumulative dropout which concentrates to first semesters for full-time students, as it is usual. For part time students this share is about the same.

Following the results of college graduates' surveys, the character of the professional activity of the graduates corresponds to the aim of the study programme. Graduates are satisfied with their choice and express opinion that they reached the knowledge and skills marketable in the labour market. Employability of the graduates from the college study programme during the analysed period was typically above 90 %. Also the professional activities of the majority of graduates meet the programme providers' expectations.

2.6. Programme management

Currently, the process of study quality management at Vilnius College of Technologies and Design is coordinated at several levels:

- College level (no specific data was provided);
- Faculty level (responsibility of the Faculty Council, the Academic Council, Dean of the Faculty, administration);
- Department level (responsibility of the Head of the Department, the program coordinator, Study Programme Committee);
- Teacher's level (responsibility of each teacher).

The Faculty Council and the Academic Council are responsible for strategy formation and its supervision.

The Dean of the Faculty assures the quality of studies and applied scientific research and takes care of the implementation of strategic plan. Important issues and topics for the studies (scholarships, academic exchange, study infrastructure) are discussed at the meetings of the Faculty Executive Board.

Department of Electrical Engineering plays the key role in programme management through direct communication between lecturers, students and stakeholders. The Study Programme Committee is responsible for the realization of the aims and the learning outcomes of study programme, as well as the continuous monitoring and improvement of its quality. The committee currently consists of five people: a stakeholder, university representative, two college representatives and a student. Responsibilities for decisions and monitoring of the implementation of the programme are clearly allocated, at least on the formal level.

Implementation of the programme is assured by informing the students about the studies, through tight connection with the Students' Agency. Detailed information about studies is constantly supplied to the students by the administration, heads of departments, group tutors and teachers. All information is presented and regularly updated on the internet website of the College.

The vast majority of teachers (90%, according to some survey) declare that they submit proposals and initiate changes in the study programme thus influencing the successful implementation of the study programme.

Students' opinion about study programme's individual subjects and the quality of teaching is revealed by questionnaires. Analysis of the questionnaires helps to identify weaker aspects of the programme, which are then taken into account to improve the quality of the studies, e.g. regarding the students' opinion and some optional subjects were introduced. Based on one survey only 63 % of students are satisfied with teaching methods while their appreciation in other factors is considerably higher. This leads to a conclusion that the students are generally satisfied with their studies. Still, a better feedback gathering system from the students side should be developed, because currently it seems that it is working on a formal level.

Employers make positive influence on the study process participating in the programme committee meetings, providing some insights and recommendations. Some of them are directly participating by teaching and training within this specific study programme. There could be a better cooperation between different partners of College in terms of mobility, equipment sharing, etc.

The college has also prepared and approved an internal quality system providing main quality management principles and procedures implemented in the college.

The study programme was evaluated by EVALAG (Germany) in 2012. Related to programme management they recommended that:

- A regular and standardised process for student course evaluation should be established;
- Using the opportunity of the EU-funded quality assurance project to design and implement an integrated strategic quality management system;
- To use statistics more systematically in its internal assurance process.

These recommendations have been noticed and taken into consideration, but not yet fully implemented within the College. Their overall assessment was quite positive and optimistic for this new programme. Also their conclusion: "The staff needs to keep up with current trends in the academic as well as professional field to be able to react appropriately and prepare graduates ahead of time to changes in the economic environment ", is still valid today.

In conclusion this study programme has a good future ahead and should be continued.

III. RECOMMENDATIONS

1. A better involvement of lecturers from industry into the study process would be very welcome. There is a recommendation that one or two subjects should be taught by them. Students are very much satisfied with lectures delivered by social partners.

2. Strategy on lecturing personnel and involvement of more full-time young teachers and teachers from industry to the programme should be developed and deployed.

3. The feedback system for students should be further developed.

4. More cooperation in terms of mobility, equipment. with other higher education institutions, especially abroad is recommended.

5. Students should be more encouraged to join international exchange programmes.

6. More activities for the staff could be suggested, to be more involved in international co-operations, exchanges with other academic and professional institutions, as well as with industry. Referring to the previous recommendations this point still remains, since it was not yet fully implemented.

7. The subject Chemistry does not reflect the latest achievements in science and technology in the electrical and engineering field. Thus it should be removed from the curriculum of this study programme (however, this study subject is justified for another programme).

IV. SUMMARY

The Electrical and Automation Engineering study programme has been carried out at the Technical faculty of Vilnius College of Technologies and Design from 2012. It replaces two earlier study programmes and was planned with considerable support from the government and stakeholders. The learning outcomes are already well recognised and accepted by the group of interest, despite the fact that programme is very new. The first 17 students graduated from this programme in 2015.

The number of programme entrants has been delightfully high so far. This programme is very popular throughout the country and a large number of applicants has placed this option as a high preference choice.

The qualification and the size of the teaching staff is adequate to ensure learning outcomes. The teachers are well involved in the professional development activities. The programme has a core of young teaching personnel with a good potential in the near future also to perform high level applied research. At present there are seven doctors and three doctoral students among the teachers of the programme.

The administration of Vilnius College of Technologies and Design provides possibilities for teaching staff to attend trainee programmes, refresher courses, and exhibitions. This motivates them to continue as faculty members and encourages them to be involved with applied research activities.

Teaching laboratories related to automation are especially good, versatile and well equipped. Also an "innovation" room (supporting several programmes) has been established for supporting interfaces for students´ developments and also for demonstrating the field to secondary school students. All facilities have been designed to create a very good overall atmosphere.

The results of subject exams are released within three days which is very good service for students.

Much work should be continuously done in publicity and schools to encourage well motivated and qualified students to apply.

Faculty academic exchange seems, unfortunately, modest - more exchange with foreign institutes would be desirable. More activities for the staff could be suggested – to be more involved in international co-operations, exchanges with other academic and professional institutions. Referring to the previous recommendations this point still remains, since it was not fully yet implemented.

Also referring to the previous evaluation report, one of the recommendations was to change the name of the study programme to Electric Energy and Automation as a consequence of direct translation from Lithuanian language (Elektros ir automatikos inžinerija) and this was not discussed in SER. Furthermore, because the subject Chemistry does not reflect the latest achievements in science and technology in the electrical and engineering field it should be deleted from the curriculum (this was verified also by the graduates). During the on-site meeting with teachers', the explanations concerning this issue were not convincing and thus this recommendation was not implemented.

The programme management works well on different levels (Faculty, department, etc.). There are certain points that require constant monitoring and improvement in the future, like better involvement of the graduates and social partners in the development of this programme; students' feedback; implementation of previous evaluation recommendations that are still not achieved.

Finally, the evaluation team can verify that the Electrical and Automation Engineering study programme is well managed, it will have a good future and should be continued.

V. GENERAL ASSESSMENT

The study programme Electrical and Automation Engineering (state code – 653H62011) at Vilnius College of Technologies and Design is given **positive** evaluation.

Study programme assessment in points by evaluation areas.

No.	Evaluation Area	Evaluation of an area in points*
1.	Programme aims and learning outcomes	3
2.	Curriculum design	3
3.	Teaching staff	3
4.	Facilities and learning resources	4
5.	Study process and students' performance assessment	3
6.	Programme management	3
	Total:	**19**

*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 exceptionally good.

Grupės vadovas: Team leader:	Prof. dr. habil. Krzysztof Kozlowski
Grupės nariai: Team members:	Doc. dr. Sergey Shaposhnikov
	Emeritus Prof. dr. Erkki Lakervi
	Doc. dr. Gediminas Valiulis
	Mr. Ignas Gaižiūnas

VILNIAUS TECHNOLOGIJŲ IR DIZAINO KOLEGIJOS PIRMOSIOS PAKOPOS STUDIJŲ PROGRAMOS *ELEKTROS IR AUTOMATIKOS INŽINERIJA* (VALSTYBINIS KODAS – 653H62011) 2015-12-02 EKSPERTINIO VERTINIMO IŠVADŲ NR. SV4-320 IŠRAŠAS

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V. APIBENDRINAMASIS ĮVERTINIMAS

Vilniaus technologijų ir dizaino kolegijos studijų programa Elektros ir automatikos inžinerija (valstybinis kodas – 653H62011) vertinama **teigiamai**.

Eil. Nr.	Vertinimo sritis	Srities įvertinimas, balais*
1.	Programos tikslai ir numatomi studijų rezultatai	3
2.	Programos sandara	3
3.	Personalas	3
4.	Materialieji ištekliai	4
5.	Studijų eiga ir jos vertinimas	3
6.	Programos vadyba	3
	Iš viso:	**19**

* 1 - Nepatenkinamai (yra esminių trūkumų, kuriuos būtina pašalinti)

2 - Patenkinamai (tenkina minimalius reikalavimus, reikia tobulinti)

3 - Gerai (sistemiškai plėtojama sritis, turi savitų bruožų)

4 - Labai gerai (sritis yra išskirtinė)

<...>

IV. SANTRAUKA

Elektros ir automatikos inžinerijos studijų programa Vilniaus technologijų ir dizaino kolegijos technikos fakultete vykdoma nuo 2012 m. Ji pakeitė dvi ankstesnes studijų programas ir buvo planuojama nemažai padedant vyriausybei ir socialiniams dalininkams. Nepaisant to, kad programa dar labai nauja, numatomi studijų rezultatai jau pripažinti ir patvirtinti interesų grupės. 2015 m. šios programos studijas baigė pirmieji 17 studentų.

Iki šiol į šią programą įstojo labai daug studentų. Ši programa yra labai populiari visoje šalyje, daug stojančiųjų galimybę studijuoti šią programą pasirinko prioritetiniu siekiu.

Dėstytojų kvalifikacija ir skaičius yra pakankami numatomiems studijų rezultatams užtikrinti. Dėstytojai aktyviai dalyvauja profesinio tobulinimo veikloje. Šios programos dėstytojų branduolį sudaro jauni darbuotojai, turintys gerą potencialą ateityje atlikti ir aukšto lygio

taikomuosius mokslinius tyrimus. Šiuo metu tarp programos dėstytojų yra septyni mokslo daktarai ir trys doktorantai.

Vilniaus Technologijų ir dizaino kolegijos administracija suteikia dėstytojams galimybę dalyvauti stažavimosi programose, tobulinimosi kursuose ir parodose. Tai motyvuoja juos tęsti darbą fakultete ir skatina dalyvauti mokslo taikomojoje veikloje.

Mokomosios laboratorijos, skirtos automatikai, yra ypač geros, universalios ir gerai įrengtos. Be to, įrengtas „inovacijų" kabinetas /"hackab"/ (skirtas kelioms programoms) *paremti studentų darbų/projektų pagrindą* ir dar pademonstruoti vidurinių mokyklų mokiniams šią studijų kryptį. Visos patalpos suprojektuotos taip, kad būtų sukurta labai gera bendra atmosfera.

Dalykų egzaminų rezultatai paskelbiami per tris dienas, ir tai yra labai gera paslauga studentams.

Reikėtų stengtis nuolat reklamuoti programą viešai ir mokyklose siekiant paskatinti motyvuotus ir tinkamus absolventus stoti.

Fakulteto dalyvavimo akademiniuose mainuose lygis, deja, neaukštas – pageidautina, kad būtų labiau keičiamasi studentais su užsienio aukštosiomis mokyklomis. Darbuotojams siūloma dalyvauti įvairesnėje – tarptautinio bendradarbiavimo, mainų su kitomis mokslo bei profesinėmis institucijomis – veikloje. Šis klausimas buvo minėtas ankstesnio vertinimo rekomendacijose, ir jis išlieka, nes nebuvo iki galo įgyvendintas.

Dar viena iš ankstesnio vertinimo rekomendacijų buvo pakeisti *Elektros ir automatikos inžinerijos* studijų programos pavadinimą tiesiogiai jį išverčiant iš lietuvių kalbos (*Elektros ir automatikos inžinerija*), bet savianalizės suvestinėje šis klausimas neaptartas. Be to, kadangi Chemijos dalyke naujausi mokslo ir technologijų pasiekimai elektros energijos ir inžinerijos srityje neatsispindi, jis turėtų būti pašalintas iš šios studijų programos (tą patvirtino ir absolventai). Per susitikimus dėstytojų pateikti paaiškinimai šiuo klausimu nebuvo įtikinantys, taigi ši rekomendacija nebuvo įgyvendinta.

Visų lygių programos vadovybė (fakulteto, katedros ir t. t.) dirba gerai. Yra dalykų, kuriuos reikia nuolat stebėti ir ateityje gerinti, pavyzdžiui, labiau įtraukti absolventus ir socialinius partnerius į programos tobulinimo procesą, gerinti studentų grįžtamąjį ryšį, įgyvendinti ankstesnio vertinimo rekomendacijas, kurios vis dar neįgyvendintos.

Baigiant reikia pasakyti, kad vertinimo grupė gali patvirtinti, jog *Elektros ir automatikos inžinerijos* studijų programos vadyba yra gera, programa turės gerą ateitį ir turėtų būti tęsiama.

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III. REKOMENDACIJOS

1. Būtų labai gerai, jei studijų procese dalyvautų daugiau dėstytojų iš pramonės sektoriaus. Rekomenduojama, kad jie dėstytų vieną arba du dalykus. Studentams labai patinka, kai paskaitas skaito socialiniai partneriai.

2. Reikėtų parengti ir įgyvendinti dėstytojų, didesnio skaičiaus jaunų dėstytojų, kurie dirbtų visu etatu, ir dėstytojų iš pramonės sektoriaus įtraukimo į programą strategiją.

3. Turėtų būti toliau tobulinama studentų grįžtamojo ryšio sistema.

4. Rekomenduojama daugiau bendradarbiauti su kitomis, ypač užsienio, aukštosiomis mokyklomis turint omenyje judumą, dalijimąsi įranga.

5. Studentai turėtų būti labiau skatinami dalyvauti tarptautinėse mainų programose.

6. Darbuotojams patariama dalyvauti įvairesnėje veikloje – tarptautinio bendradarbiavimo, mainų su kitomis mokslo bei profesinėmis institucijomis ir pramonės sektoriaus įmonėmis. Kalbant apie ankstesnio vertinimo rekomendacijas, šis punktas išlieka, nes nebuvo iki galo įgyvendintas.

7. Chemijos dalyke neatsispindi naujausi mokslo ir technologijų pasiekimai elektros energijos ir inžinerijos srityje. Taigi jis turėtų būti pašalintas iš šios studijų programos (tačiau šis studijų dalykas yra pateisinamas kitoje programoje).

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Paslaugos teikėjas patvirtina, jog yra susipažinęs su Lietuvos Respublikos baudžiamojo kodekso 235 straipsnio, numatančio atsakomybę už melagingą ar žinomai neteisingai atliktą vertimą, reikalavimais.

Vertėjos rekvizitai (vardas, pavardė, parašas)