



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

ŠIAULIŲ UNIVERSITETO  
**STUDIJŲ PROGRAMOS**  
*Elektros inžinerija (612H62004)*  
**VERTINIMO IŠVADOS**

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**EVALUATION REPORT OF**  
**Electrical engineering (612H62004)**  
**STUDY PROGRAMME**  
at *Šiauliai University*

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Išvados parengtos anglų kalba  
Report language – English

## DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	<b>Elektros inžinerija</b>
Valstybinis kodas	612H62004
Studijų sritis	Technologijos mokslų studijų sritis
Studijų kryptis	Elektronikos ir elektros inžinerija
Studijų programos rūšis	Universitetinės studijos
Studijų pakopa	Pirmoji
Studijų forma (trukmė metais)	Nuolatinė (4 metai)
Studijų programos apimtis kreditais	240 ECTS
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Elektros inžinerijos bakalauras
Studijų programos įregistravimo data	ŠM ministro įsakymo Nr. V-635, data 2010-05-03

## INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	<b>Electrical engineering</b>
State code	612H62004
Study area	Technological sciences
Study field	Electronics and electrical engineering
Kind of the study programme	University Studies
Study cycle	First
Study mode (length in years)	Full-time (4 years)
Volume of the study programme in credits	240 ECTS
Degree and (or) professional qualifications awarded	Bachelor of Electrical Engineering
Date of registration of the study programme	The decree of Minister of Education and Science: 2010-05-03, No. V-635

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## I. INTRODUCTION

The evaluation of Bachelor programme of Electrical Engineering (612H62004) at Šiauliai University was assessed taking into account the information provided in the self-evaluation report (further – SER) of the programme and factual on-site visit on 27<sup>th</sup> of March 2014.

The evaluation team at Šiauliai University consisted of Prof. dr. Krzysztof Kozlowski - (team leader) Prof. dr. Lyudmila Zinchenko, Dr. Olev Martens, Dr. Rolandas Urbonas, Mr. Paulius Simanavičius.

During the on-site visit meetings and discussion with the administration of Faculty of Natural Sciences and Technology, SER preparation team, programme teaching staff, students, alumni and social partners related to the evaluated study programme took place. In addition to that the evaluation team visited laboratories and classrooms used for the education of the of Bachelor programme of Electrical Engineering, libraries (University and Faculty) and other faculty facilities.

As indicated in the SER (chapter 4-6) *“the Department of Electrical Engineering came into existence in 1967. This department is the coordinator of Electrical Engineering (Bachelor’s degree) and Electrical Power Engineering (Master’s degree) study programmes. Until June, 2013 there were five departments and two research centres at the Faculty of Technology. The faculty implements undergraduate study programmes of Environment and Professional Safety, Electronics Engineering, Electrical Engineering, Informatics Engineering, Mechanical Engineering and Civil Engineering.*

*Since Jun, 2013, according to the Rector’s decree, the new Faculty of Natural Sciences and Technology has been created by integration of the faculties of Natural Sciences and Technology.*

*The Department of Electrical Engineering has accumulated the greater part of teaching resources (such as laboratory equipment and literature) needed for the studies. Most of the teaching staff of the department work on the Electrical Engineering study programme. At present five associated professors, two lecturers and five assistants (all of them are practitioners) are members of the Department of Electrical Engineering.”*

During the period of 2008-2013 105 entrants have been admitted to the programme.

Previous accreditation was performed on November 7, 2011 and the program study was accredited for three years and the program was accredited for three years. The entire team took all decisions concerning the final evaluation report.

Abbreviations:

SER Self- assessment report

BA Bachelor

MA Master

## II. PROGRAMME ANALYSIS

### ***1. Programme aims and learning outcomes***

Electricity generation, transmission, distribution as well as rational consumption are of great significance to the Lithuanian economy and society. Thus, well trained specialists are very much needed to keep this sector of economy and daily life reliable and functioning.

The programme Electrical Engineering is a first circle programme (bachelor) has a strong regional focus, preparing electrical specialists for the enterprises in the region. According to the Lithuanian Labour Exchange data (May 2013) “*significant employment opportunities and a shrinking labour supply accounted for the rapid decline in the number of registered unemployed persons. The Exchange states that employment opportunities for electrical engineers in Lithuania (particularly in Šiauliai region) are high, which is also revealed by the analysis of the programme graduates’ employment. All this proves the importance and use of the study programme Electrical Engineering.*” (chapter 12 of the SER).

Taking into account rather limited number of students, Šiauliai municipality could consider involvement in the study programmes’ committees and assist the University in gathering larger number of students and, thus, in this way implementing regional policy.

The programme’s aims and learning outcomes of the study programme *Electrical Engineering* and the programme itself are quite well defined, clearly described and available to the public (students, teachers and others interested in the study programme via internet). Even though it still could be easier accessible to the public at the Šiauliai University webpage. In addition more pro-active information actions about the programme and the future employment places at the schools, taking into account best practises at the University, could be taken.

The programme aims and learning outcomes are based on the academic and professional requirements, public needs and the needs of the labour market. During the discussion with social partners and alumni was observed that close co-operation with the social partners at regional industry is observed, which proves necessity and need of the study programme to the region. For example, several industry partners have established designated funding for the students of the programme (for five students for the recent year). Such initiative could serve as a good example to other study programmes.

Based on the SER and discussion 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 comparison with the previous programme assessment in 2010 modernisation of subjects taught was made according to Recommendation 3.4. Study subjects neither entirely nor partially duplicate each other as it was observed in programme assessment in 2010. The study programme was reviewed, taking into account suggestions by social partners and students were observed by the evaluation team.

The ratio of theoretical classes and practical work is rather balanced. In comparison with the previous programme assessment in 2010 when students expressed their wishes (again according Recommendation 3.4) for the more practical assignments and external practises, currently students were completely satisfied with the opportunities of the external practises and practical work at courses. Graduates of recent years as well confirmed the sufficiency and quality of the practical exercises during their studies. None of the graduates expressed any negative feeling concerning the study programme, teachers or acquired competences.

The name of the programme, its learning outcomes, content and the qualification offered are compatible with each other.

## ***2. Curriculum design***

The curriculum of the programme meets legal requirements. Evaluation team confirms that since the last programme assessment in 2010 the programme's curriculum was considerably improved. All the prerequisites and sequence of the study modules are consistent differently from the programme assessment in 2010 according to Recommendation 3.4. Based on the SER no factual mistakes on the proportion of study blocks were observed.

Study subjects are spread evenly for full-time students 30 credits/semester. For part-time students the distribution of credits varies from 18 till 24 credits. Students were satisfied as well with the study load. The subjects' themes from the presented material as well as from the discussion with students for full-time students in evaluation team opinion seem to be non-repetitive.

The content of the subjects in the programme is consistent with the type and level of the studies. Programme subjects and modules fits well with the specialisation, provides theoretical knowledge and practical skills necessary for the specialists in the current labour market. Recommendations of the previous programme assessment in 2010 (compare Section 2.1. of the last evaluation report) were either fulfilled or seriously taken into account (e.g. Maxwell theory included in Theoretical Electrical Engineering; more electronics linked subjects were

introduced). Neither programme graduates, nor social partners had negative comments on the structure and content of the study programme. Social partners as well indicated that the competences of the programme graduates are sufficient and at the same level of the similar other Lithuanian universities electrical engineering programmes graduates.

The content and methods of the subjects are appropriate for the achievement of the intended learning outcomes. They are constantly reviewed and updated (e.g. in the module “Electrical Networks” Smart grids subject was introduced). In close co-operation with students and social partners current industrial developments are followed and if applicable – introduced in the study programme. All the literature for the courses is in Lithuanian or English with combination of new and older editions.

The scope of the programme is sufficient to ensure learning outcomes. The content of the programme reflects latest achievement in technology developments. The programme was modernised taking into account the above just mentioned recommendations of the last evaluation in 2010.

### ***3. Staff***

Teaching staff of the assessed programme meets the legal requirements: 58% of teachers are Associated Professors, 8 % – lecturers with PhD degree. Management of the programme could consider attracting professors to the programme.

There are two teachers with more than 40 years experience. Out of 31 teachers indicated in the programme, 27 have at least 5 years teaching experience. Therefore, teaching staff has adequate qualification to ensure learning outcomes.

In the period from 2010 no more than 20 students were admitted to the study programme (see Figure. 2.7. Having small classes (in total 4-14, see SER section 75) of students the special attention is given to the personal student’s consultations. Evaluation team was informed by students that one of the most attractive features of this study programme indicated almost one-to-one study process and ability to have very close contact with teachers. It shows that the number of the teaching staff is adequate to ensure learning outcomes.

Since the last programme’s assessment three lecturers obtained PhD degree. The average age of the teaching staff is 44 years (SER section 54). However, 5 teachers who are over 65 years old teach 8 study subjects. The same situation was observed during the last evaluation. Nevertheless, in general the evaluation team opinion is that the strategy towards aging issues should be developed. The strategy for the teaching staff turnover would be beneficial to secure solid running programme. Support for young teaching staff in their carrier would be encouraged.

During the evaluation team visit it was obvious that head of the Department is a very active person with passionate attitude to the Department's personnel and programme. However, it would be beneficial to have a core-team instead one person-leader to be better prepared for the challenges related to the programme.

The University and Faculty create conditions for the professional development. As example, of that could serve three new PhD holders, who studied and defended their theses at Kaunas University of Technology. Evaluation team see that they have potential in the near future to become professors and, in this way strengthen the programme. Department has a new research group of three persons who are interested on power converter research for photovoltaic systems and energy efficient HVAC systems. It is in compliance with Recommendation 3.5 formulated during the last accreditation. Teaching involvement of professors is another issue that was pointed out during the last visit, compare Recommendation 3.3. In response to that self - assessment team stated that there is no any threat with that respect. Young PhD and associate professors are encouraged to involve in the teaching process and this fact was observed during onsite visit. However, the strategy for professional development of teaching staff at the Department level could serve as catalyser for entire Department's development.

From the SER and discussions with teaching staff evaluation team observed that rather limited part of the teaching staff is involved in the research. However, it would be beneficial for the programme staff to increase the activities in research. It closely correlates with the required number of publications and with official requirements for the personal career development.

The improvement in the teaching load was observed in comparison with the programme's assessment in 2010. Further decreasing of the teaching load would be appreciated.

Rather a small number of teachers participate in the Erasmus exchange programme. Both in SER and during the discussion with teachers it was indicated that couple of teachers participated in the programme. Various reasons could be found (including the quotas), however the mobility activities (of various programmes) could be a great supplement to the teachers professional competences development and stimulus for possible improvement in the taught subjects.

Teachers' professional development is achieved through the research, participation in mobility programmes, participation in international conferences, preparation of publications in journals (SER, Sections 59, 61). From SER and discussion with the teachers programme assessment team could see that there is a lack of international programme's projects (e.g. FP7), the great majority of international conferences and journals are of Lithuanian origin. It would be strongly recommended to expand the geography perspective of the publications. In such manner



it is possible to compare the level and scope of the activities and be more integrated with international community. According to SER (Section 60) and it was confirmed in the discussion with teachers that some support (it was even used by one teacher) in the international activities is available from the Dean's Office. Thus, teachers could be more pro-active in using all available sources (both internal and external) to take part in the professional development.

#### ***4. Facilities and learning resources***

The facilities used for the programme comply with requirements and basic needs of the study process. Students may use large and modern university library as well as faculty library with extensive capability of studying. It should be mentioned that faculty library has in general older books. However, since the university campus is rather concentrated, students do not see any issue to visit university library. On the other hand, wider usage of e-books is observed. Thus, the physical location does not play a key role. Nevertheless, computers at the faculty library could be modernised. University subscribes a number of science databases (such as SciVerse). However, students and lecturing personnel at University does not have access to the electrical engineering database IEEE Xplore.

In the opinion of the evaluation team the teaching and learning equipment has been improved since the last assessment in 2010. Auditoriums are suitable for the studying process and the laboratories are improved as well. According to the SER (Section 71) in the period of 2008-2013 70 thousand LTL were invested in the laboratories. The Faculty pays attention to the improvement of laboratories. However, there is still room for improvement, as there was still quite much old equipment, which should be modernized. The assistance of social partners could be wider used while acquiring new equipment. Computer classes are equipped with necessary software, which is widely used in the study process; still it should be up to date. It is worth to mention that new equipment related to solar technology as well as new modular smart grids with supporting software were just recently installed. Besides that new mechatronic devices were built by students such as mobile robots and various controllers applied in engineering practice, all of them were exposed and the evaluation was able to see these achievements. It is a small step in right direction in comparison with previous accreditation. However, computers itself should be modernised.

There is a sufficient amount of the teaching material at the university library and department. Students are satisfied with the content and number of textbooks. Wider usage of e-books is observed. The material of other universities on contractual basis is used as well. According to SER, a wide range of books is available either from the university/faculty library of

at the department office. The assessment team could see that there is a mix of classical and new literature. There is a number of e-textbooks. Definitely, more modern books could be purchased and placed in the Faculty library. More efforts could be put on this issue. On the other hand it is a positive thing that the university has access to such databases as Science Direct, SpringerLINK, EBSCO Publishing.

### ***5. Study process and student assessment***

The admission requirements to the study programme in general are as in other universities and they are based on the national rules. The admission is based on the points received from the state-level exams. No admission threshold is applied to the newcomers (which is the case for two Lithuanian universities).

In the opinion of evaluation team the study process is performed according the legal requirements and meet the students' expectations.

Programme teachers and students indicated that there were several cases when students were involved in the research projects. However, more pro-active students' participation in research activities would be encouraged. Students expressed their intention to establish a scientific community within their study programme.

University provides possibilities for student practises at industrial sites. During the evaluation team on-site visit students and alumni particularly were asked on their opinion for the practical training. No complains or requests for more practical activities were received. On the other hand, differently from the other assessed study programmes of the electrical engineering field, during the practice students are not only observers as they can engage in assemblage. It comes from the safety at work places procedures, since working at the specific conditions there are certain restrictions (e.g. work at high voltage conditions). It seems that social partners of the programme can find the acceptable solutions for the students providing them practise places at with less restrictions (e.g. to work in adjusting shop). During the discussion with teaching staff one of the teachers indicated that during the teaching course he is providing students with real industry accidents data or special constructions' projects. Teaching staff confirmed that three visits per semester to the industrial sites such as Ignalina NPP. Kruonis HPSP, Kaunas HP are organised for the students.

In the discussion with students evaluation team could see that students are provided with the information on mobility programme. However, students fear that in other Universities they might not receive the adequate courses as in the Šiauliai University. Students indicated that they hardly could find the University, which would provide similar education in English. An example

of similar education programme was seen in University di Torino, however all education process was in Italian.

On the other hand focussed attempts to find strategic international partners would be encouraged. An issue of low number of the electrical engineering programmes in Europe and issue on compatibility of study programmes were raised by students.

Students get scholarships from companies and have a possibility to get a one-time social scholarship from the university. Faculty administration indicated that 5 % of Faculty funds go to the social needs. Good performing students have a possibility for the financial stimulation. During the Career days students' nominations in five different categories are made.

In the opinion of the evaluation team the assessment system is clear for students. It was confirmed in the discussion with student's representatives. They have indicated that on the first lecture of the course teachers explain the courses learning outcomes, assessment system and all the information related to the subject.

The graduates indicated that they are happy with the content and quality of study programme they have selected. The majority of graduates are either working at the social partners companies or studying at the Master level study programmes. From the discussion with the students majority preferably are going to select work market after completion of bachelor studies. One aspect could be mentioned – a number of students are employed in the companies where they have made external practises.

Referring to the previous accreditation as suggested by Recommendation 3.1 students' drop-out rate was reduced mainly due to the fact that better students were admitted to the study process. In 2012-2014 state-financed students were admitted to the study programme being the third top of the whole university. According to Recommendation 3.2 English knowledge students as well as teachers was improved. As an example some English courses, free of charge, are organized for teachers. Students have better English speaking capabilities it was visible practically during the meeting with them.

## ***6. Programme management***

The programme management is implemented in “two-level” Study Programmes Committees: one per each study programme at the Department level and one for coaching all the programmes at the Faculty level. The latter Study Programme Committee is established in order to harmonise relations between Faculty study programmes and if possible by joint actions minimise costs.

The Department level Study Programmes Committee consists of Department teachers, student and social partner representative. The Faculty level Study Programmes Committees consists of the Heads of the Departments. Based on information of Head of the Department – all Departments' personnel is involved in the study programme process.

During the discussion with students, the students' representative knew about the Study Programmes Committee and his participation in the process. While during the discussion with Department teachers, all of them knew that Head of the Department is a member of Study Programmes Committee. However, other two Study Programmes Committee members did not recognised themselves as members of the Study Programmes Committee.

The data for the improvement of the entire programme or the separate subject is regularly collected from students and opinion of social partners is considered as well. Students confirmed that they are evaluating each course after its completion. Once a year a questionnaire is distributed among students at the University level. The University administration is asking to fill-in at least the minimum required number of questionnaires (which is more than 50 %) in order that surveys would be credible.

The evaluation team believes that outcomes of the internal and external evaluation are taken into consideration for the improvement of the programme. As the reference for this statement is a remarkable change in SER preparation, active discussions with students, teaching staff and social partners in comparison with the assessment in 2010.

During the discussion students have expressed their strong opinion in favour for the programme. They have stated that all issues related to the programme can be solved together with teachers. In general no complaints were received neither from the students or graduates on the programme.

Social partners as well acknowledged that they are asked for the opinion on the programme. Some of the social partners are even teachers of some of the courses at the programme (e.g. "Simatika" UAB). Both according to the SER and at the discussion with social partners quite a number of social partners with regional aspect are interested in the programme graduates – e.g. "Salda" UAB, "Simatika" UAB, LESTO AB. It shows that programme graduates are of interest not to one or two companies, but a much wider number of companies, which provides good diversification of the work placements.

Evaluation team observed that internal quality assurance measures are effective and efficient. As a proof of that considerable change in programme management is seen with comparison of the evaluation assessment in 2010.

The evaluation team believes that marketing strategy on promotion of the study programme could be developed. In the SER and during the discussions with SER-preparation team, teaching staff, and students, no explicit confirmation was provided that such strategy exists. It would be worthwhile at the faculty study programme level share best practices who to attract good students to the studies in the technical field and at the study programme in particular. Various actions – such as lectures at schools, during city events, open days, more attractive web-page of the faculty and department – to name a few could be used. Higher involvement of students in the programme promotion could be a good stimulus for newcomers.

Inactive participation of students in Erasmus mobility programme could be explained by non-matching study programmes' subjects in the university and Europe and/or fear of the studies in English. Some students are expressing willingness take part in the mobility programme, but are waiting for coherence in the study programmes. On the other hand, the management side of the Erasmus programme could be also improved.

### III. RECOMMENDATIONS

1. More attention should be drawn and efforts put in order to attract graduates from secondary schools to the programme, including more attractive communication in schools, festivals, and Open Carrier days. More proactive co-operation with Šiauliai municipality as well as with social partners could be considered.
2. The strategy for professional development and achievements of teaching staff (including high ranked publications and external research activities) at the Department level could serve as catalyser for entire Department's development.
3. A closer co-operation with social partners in terms of the updating laboratories could strengthen students' modern technical preparedness, programme technical base and attractiveness to 'secondary schools graduates.
4. It would be beneficial to work further towards having a core-team instead one person-leader to be better prepared for the challenges related to the programme.
5. More attention could be paid to increase the teachers and students mobility activities.
6. More attention could be paid for the teachers' professional development. It would be recommended that teachers' publications in majority were in non-Lithuanian journals and conferences proceedings.

#### IV. SUMMARY

The programme Electrical Engineering is a bachelor programme at Šiauliai University and has a strong regional focus, preparing electrical specialists for the enterprises in the region. The programme's aims and learning outcomes of the study programme *Electrical Engineering* and the programme itself are quite well defined, clearly described and are based on the academic and professional requirements, public needs and the needs of the labour market. They are consistent with the type and level of studies and the level of qualifications offered. Even though more proactive information actions about the programme and the future employment places at the schools, taking into account best practises at the University, could be taken.

In comparison with the previous programme assessment in 2010 modernisation of subjects taught was made. Study subjects do not duplicate each other. Study programme was renewed, taking into account suggestions by social partners, students and the previous assessment team. The ratio of theoretical classes and practical work is rather balanced. The name of the programme, its learning outcomes, subject content and the qualification offered are compatible with each other.

The curriculum of the programme meets legal requirements. All the prerequisites and sequence of the study modules are consistent. Students are satisfied with the study load. The subjects' themes from the presented material as well as from the discussion with students for full-time students in evaluation team opinion seem to be non-repetitive. The content of the subjects in the programme is consistent with the type and level of the studies. Programme subjects and modules fits well with the specialisation, provides theoretical knowledge and practical skills necessary for the specialists in the current labour market. Recommendations of the previous programme assessment in 2010 were either fulfilled or seriously taken into account. The content and methods of the subjects are appropriate for the achievement of the intended learning outcomes.

Teaching staff of the assessed programme meets the legal requirements and has adequate qualification to ensure learning outcomes. Having small classes of students the special attention is given to the personal student's consultations. According to students – one of the most attractive features of this study programme indicated almost one-to-one study process. The number of the teaching staff is adequate to ensure learning outcomes. However, the strategy for the teaching staff turnover is important in order to secure solid running programme. Support for young teaching staff in their carrier would be encouraged. It would be beneficial to have a core-team instead one person-leader to be better prepared for the challenges related to the programme.

The University and Faculty should also create better conditions for the professional development of the teaching staff.

The facilities used for the programme comply with requirements and basic needs of the study process. Students should be encouraged to use the large and modern university library with extensive capability of studying. University subscribes a number of science databases. The laboratories are generally improved as well, but the overall process should not stop, as there is much room for improvement. The assistance of social partners could be wider used while acquiring new equipment. Computer classes are equipped with necessary software, which is widely used in the study process. However older equipment should be modernised.

Regarding the study process – no complains or requests for more practical activities were received from the students. Social partners of the programme find the acceptable solutions for the students providing them practise places being less restrictive (e.g. to work in an adjusting shop). Teaching staff regularly provides opportunities for students who wish to visit industrial sites. Students are provided with the information on mobility programme. An issue of low number of the electrical engineering programmes in Europe and issue on compatibility of study programmes were raised by students.

Students get scholarships from companies and have a possibility to get a one-time social scholarship from the university. Faculty administration indicated that 5 % of Faculty funds go to the social needs. Good performing students have a possibility for the financial stimulation. The assessment system is clear for students. On the first lecture of the course teachers explain the courses learning outcomes, assessment system and all the information related to the subject. The graduates are happy with the content and quality of study programme they have selected. One aspect could be mentioned – a number of students are employed in the companies where they have made external practises.

For the programme management in “two-level” Study Programmes Committees: one per each study programme at the Department level and one for couching all the programmes at the Faculty level. The latter Study Programme Committee is established in order to harmonise relations between Faculty study programmes and if possible by joint actions minimise costs. Social partners as well acknowledged that they are asked for the opinion on the programme. Some of the stakeholders are even teachers of some of the courses at the programme. Social partners with regional aspect are interested in the programme graduates. Marketing strategy on promotion of the study programme could be developed. Higher involvement of students in the programme promotion could be a good stimulus for new-comers.

## V. GENERAL ASSESSMENT

The study programme *Electrical Engineering* (state code – 612H62004) at Šiauliai University is given **positive** evaluation.

*Study programme assessment in points by evaluation areas.*

No.	Evaluation Area	Evaluation Area in Points*
1.	Programme aims and learning outcomes	3
2.	Curriculum design	3
3.	Staff	2
4.	Material resources	2
5.	Study process and assessment (student admission, study process student support, achievement assessment)	3
6.	Programme management (programme administration, internal quality assurance)	3
	<b>Total:</b>	<b>16</b>

\*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:

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Grupės nariai:  
Team members:

Prof. dr. Lyudmila Zinchenko

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Paulius Simanavičius



<...>

#### V. APIBENDRINAMASIS ĮVERTINIMAS

Šiaulių universiteto studijų programa *Elektros inžinerija* (valstybinis kodas – 612H62004) vertinama **teigiamai**.

Eil. Nr.	Vertinimo sritis	Srities įvertinimas, balais*
1.	Programos tikslai ir numatomi studijų rezultatai	3
2.	Programos sandara	3
3.	Personalas	2
4.	Materialieji ištekliai	2
5.	Studijų eiga ir jos vertinimas	3
6.	Programos vadyba	3
	<b>Iš viso:</b>	<b>16</b>

\* 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

Programa *Elektros inžinerija* – tai Šiaulių universitete vykdoma bakalauro programa, kuri labai orientuota į regioną, rengiant elektros specialistus regiono įmonėms. Studijų programos *Elektros inžinerija* tikslai ir studijų rezultatai bei pati programa yra gana gerai apibrėžta, aiškiai aprašyta ir grindžiama akademiniais ir profesiniais reikalavimais, visuomenės ir darbo rinkos poreikiais. Jie atitinka studijų rūšį ir pakopą bei siūlomų kvalifikacijų lygį. Tačiau būtų galima aktyviau informuoti apie programą ir būsimas darbo vietas mokyklose, atsižvelgiant į geriausią universiteto praktiką.

Lyginant su ankstesniu 2010 m. programos vertinimu, dėstomi dalykai buvo modernizuoti. Studijų dalykai nesidubliuoja. Studijų programa buvo atnaujinta, atsižvelgiant į socialinių dalininkų, studentų ir ankstesnės vertinimo grupės pasiūlymus. Teorinių užsiėmimų ir praktinio darbo santykis yra gana subalansuotas. Programos pavadinimas, jos studijų rezultatai, dalykų turinys ir siūloma kvalifikacija yra suderinti vienas su kitu.

Programos studijų turinys atitinka teisės aktais nustatytus reikalavimus. Visos sąlygos ir studijų modulių seka yra nuosekli. Studentai patenkinti studijų krūviu. Vertinimo grupės

nuomone, dalykų temos, remiantis pateikta medžiaga, taip pat diskusijomis su studentais, tarp jų ir nuolatinių studijų nesikartoja. Programos dalykų turinys atitinka studijų rūšį ir lygį. Programos dalykai ir moduliai gerai atitinka specializaciją, suteikia teorinių žinių ir praktinių įgūdžių, kurių reikia specialistams dabartinėje darbo rinkoje. Ankstesnio programos vertinimo, kuris atliktas 2010 m., rekomendacijos buvo arba visiškai įvykdytos, arba į jas rimtai atsižvelgta. Dalykų turinys ir metodai leidžia pasiekti numatomus studijų rezultatus.

Vertinamos programos dėstytojai atitinka teisės aktuose numatytus reikalavimus ir turi pakankamą kvalifikaciją studijų rezultatams pasiekti. Kadangi studentų grupės mažos, ypatingas dėmesys skiriamas asmeninėms studento konsultacijoms. Pasak studentų, viena iš šios studijų programos labiausiai patrauklių ypatybių – studijų procesas beveik „vienas su vienu“. Pedagoginio personalo skaičius yra pakankamas studijų rezultatams pasiekti. Tačiau yra svarbi dėstytojų kaitos strategija, siekiant užtikrinti tvirtą programos vykdymą. Būtų gerai suteikti paramą jauniems dėstytojams siekti karjeros. Taip pat būtų naudinga sukurti pagrindinę komandą, turint ne vien tik lyderį, siekiant užtikrinti geresnį pasirengimą spręsti su programa susijusius iššūkius. Universitetas ir fakultetas taip pat turėtų sudaryti geresnes sąlygas pedagoginio personalo profesiniam tobulėjimui.

Programai vykdyti naudojamos patalpos atitinka reikalavimus ir pagrindinius studijų eigos poreikius. Studentus reikėtų skatinti naudotis didele ir šiuolaikiška universiteto biblioteka, kurioje suteikiamos geros galimybės studijuoti. Universitetas prenumeruoja daug mokslinių duomenų bazių. Laboratorijos iš esmės taip pat patobulintos, tačiau bendras procesas neturėtų sustoti, nes dar daug ką galima gerinti. Socialinių dalininkų parama galėtų būti geriau naudojama įsigyjant naują įrangą. Kompiuterių klasės aprūpintos visa reikiama įranga, kuri plačiai naudojama studijų eigoje. Tačiau senesnė įranga turi būti atnaujinta.

Kalbant apie studijų eigą, jokių nusiskundimų ar pageidavimų daugiau dėl praktinės veiklos studentai nepateikė. Programos socialiniai partneriai randa studentams priimtinių sprendimų praktikai atlikti. Be to, praktikai taikomi mažesni reikalavimai (pvz. dirbti montavimo dirbtuvėse). Dėstytojai nuolat suteikia galimybę studentams, kurie nori, apsilankyti gamybos vietose. Studentams pateikiama informacija apie mobilumo programą. Studentai iškėlė klausimą dėl mažo elektros inžinerijos programų skaičiaus Europoje ir dėl studijų programų suderinamumo.

Iš įmonių studentai gauna stipendijas ir turi galimybę gauti vienkartinę universiteto socialinę stipendiją. Fakulteto administracija nurodė, kad 5 proc. fakulteto lėšų skiriama socialinėms reikmėms. Gerai besimokantys studentai turi galimybę gauti finansinę paskatą. Vertinimo sistema studentams yra aiški. Pirmos kurso paskaitos metu dėstytojai supažindina su

dalyko studijų rezultatais, vertinimo sistema ir suteikia visą informaciją, susijusią su dėstomu dalyku. Absolventai yra patenkinti pasirinktos studijų programos turiniu ir kokybe. Galima paminėti vieną aspektą – daug studentų įsidarbina įmonėse, kuriose atliko išorės praktiką.

Programos vadybą vykdo „dviejų lygių“ Studijų programų komitetai: po vieną kiekvienai studijų programai katedros lygmeniu ir vienas visoms programoms fakulteto lygmeniu. Pastarasis Studijų programos komitetas įsteigtas, siekiant koordinuoti įvairias fakulteto studijų programas, ir, jei įmanoma, bendra veikla sumažinti išlaidas. Socialiniai dalininkai taip pat patvirtino, kad jų prašoma išsakyti nuomonę apie programą, kai kurie jų yra šios programos dėstytojai. Socialiniai dalininkai regione domisi programos absolventais. Galėtų būti sukurta studijų programos viešinimo rinkodaros strategija. Aktyvesnis studentų dalyvavimas viešinant programą galėtų būti gera paskata naujokams.

### **III. REKOMENDACIJOS**

1. Daugiau dėmesio skirti ir stengtis pritraukti vidurinių mokyklų abiturientų, įskaitant patrauklesnį bendravimą mokyklose, festivaliuose ir atvirų durų karjeros dienose. Reikėtų apsvarstyti aktyvesnį bendradarbiavimą su Šiaulių savivaldybe, taip pat su socialiniais dalininkais.
2. Profesinio tobulėjimo ir akademinio personalo pasiekimų strategija (įskaitant pripažintas publikacijas ir išorės mokslinių tyrimų veiklą) katedros lygiu gali pasitarnauti kaip katalizatorius, siekiant visos katedros plėtros.
3. Glaudesnis bendradarbiavimas su socialiniais dalininkais, kalbant apie laboratorijų atnaujinimą, galėtų sustiprinti studentų šiuolaikinį techninį pasirengimą, programos techninę bazę ir užtikrinti patrauklumą vidurinių mokyklų abiturientams.
4. Būtų naudinga toliau tęsti darbą formuojant pagrindinę komandą, ne vien turėti tik vieną lyderį, kad komanda būtų geriau pasirengusi su programos iššūkiais.
5. Daugiau dėmesio galėtų būti skiriama dėstytojų ir studentų mobilumui didinti.
6. Daugiau dėmesio reikėtų skirti dėstytojų profesiniam tobulėjimui. Rekomenduojama daugumą dėstytojų publikacijų skelbti nelietuviškuose žurnaluose ir konferencijų medžiagoje.

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