



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

**VILNIAUS TECHNOLOGIJŲ IR DIZAINO KOLEGIJOS
ELEKTROS ENERGETIKOS PROGRAMOS (653H63001)
VERTINIMO IŠVADOS**

**EVALUATION REPORT
OF *ELECTRIC ENGINEERING* (653H63001)
STUDY PROGRAMME
At VILNIUS COLLEGE OF TECHNOLOGY AND
DESIGN**

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Išvados parengtos anglų kalba
Report language - English

Vilnius
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DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	<i>Elektros energetika</i>
Valstybinis kodas	653H63001
Studijų sritis	Technologijos mokslai
Studijų kryptis	Elektronikos ir elektros inžinerija
Studijų programos rūšis	Koleginės studijos
Studijų pakopa	Pirmoji
Studijų forma (trukmė metais)	Nuolatinė (3), iššęstinė (4)
Studijų programos apimtis kreditais	180 ECTS
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Elektros energijos profesinis bakalauras
Studijų programos įregistravimo data	2009-08-31 Nr. 1-73

INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	<i>Electric engineering</i>
State code	653H63001
Study area	Technology science
Study field	Electronics and electrical engineering
Kind of the study programme	College studies
Cycle of studies	First
Study mode (length in years)	Full-time (3), part-time (4)
Scope of the study programme in credits	180 ECTS
Degree and (or) professional qualifications awarded	Professional Bachelor of Electrical Energy
Date of registration of the study programme	2009-08-31 Nr. 1-73

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I. INTRODUCTION

This evaluation report is based on the self-evaluation report (SER) prepared by the G. Strazdiene together with her team. The professional bachelor study programme *Electrical Energetics* was registered in 2003 and originally implemented as a part-time study programme (four years) only. It has been decided by the VCTD to implement this study programme as full-time (three years) and part-time study programme starting in 2012. The responsibility of this study programme is in the technical faculty. This study programme has not yet been accredited by an external team. The remote study of the SER was carried out in September 2012. The on-site evaluation was performed by the entire evaluation team on October 5, 2012 according to the following schedule.

09.00 - 09.45	Meeting with Administrative staff
09.45 - 10.30	Meeting with staff responsible for preparation of SER
10.30 - 10.45	Break
10.45 - 11.30	Meeting with teaching staff
11.30 - 12.15	Meeting with students
12.15 - 13.00	Observation of various support services (laboratories, teaching spaces, workshops, library, computer services, etc.)
13.00 - 14.00	Lunch
14.00 - 14.45	Familiarization with students' final works and examination material
14.45 - 15.30	Meeting with graduates, employers, and social partners
15.30 - 16.00	Discussions, observation of the visit (close-door experts' group meeting)
16.00 - 16.15	Introduction of general remarks of the visit

The following evaluation report represents the unanimous opinion of the entire team.

II. PROGRAMME ANALYSIS

1. Programme aims and learning outcomes

The study programme *Electrical Energetics* is of great importance for the Lithuanian power industry. According to the assessment of the college administrative staff the needs for highly qualified power engineers in Lithuania until the year 2020 will increase by more than 30%. Hence, a strong, modern and innovative professional BA study programme in electrical energetics is vital for the future development of the country. Practical knowledge and practical experience are equally required from all the graduates of this study programme. An international orientation of the study programme is mandatory in order to satisfy the future requirements of the national electrical power industry. To provide the required competence in the practical field of power engineering the graduates must have close contact to practical industrial applications based on innovative and creative thinking. The mere transfer of theoretical and technical knowledge based on textbook information is not adequate and hence all teaching activities have to be closely linked to practical work carried out in industry. While formulating the *Electrical*

Energetics study programme aims and learning outcomes, the national legislation has been fully observed. It can be stated that *Electrical Energetics* study programme is formally well suited for the preparation of the required graduates.

The anticipated aims and learning outcomes are defined in the SER. It has been noted and discussed during the on-site visit that the quality of SER has several deficiencies. Unfortunately the team leader of the SER team was not present in the session with the staff responsible for preparation of SER as she has left the VCTD in the meantime. These deficiencies are mainly related to the definition of the learning aims and learning outcomes because they are not fully consistent and coherent with the offered modules/lectures. Two examples may illustrate this situation in more detail: a) stability concepts of power systems are taught to the students in three lecturing hours. This is not sufficient to meet the aims formulated in the module handbook on pg. 108. The students will at best understand that instabilities may occur in a power system without understanding the causes for neither their occurrences nor being able to design appropriate countermeasures; b) the learning outcomes claim that the students will understand electric power system reliability but the course on applied mathematics does not offer either statistics or probability basics. For an elementary understanding of reliability theory basic statistics/probability methods are absolutely mandatory. The overall focus of this study programme is not well defined as it aims to cover everything in power engineering and fails to specify the fields of special interest. A better approach is the concentration on several well selected practical aspects such as e.g. planning, operation and maintenance of distribution networks.

The programme aims and learning outcomes are publicly accessible; however it has to be stated that they are not fully compatible and consistent with the type and level of studies and the level of qualifications offered. There are considerable differences between the statements in the SER and the information given in the VCTD brochure where there is a distinct concentration on electric distribution systems. They are not fully based on the professional requirements and the practical needs of the labor market. The content of several lecture modules are not well matched to the intended learning outcomes because they are too much fragmented and specialized. Furthermore there is a significant lack of practical experience linking theoretical knowledge with practical activities in power engineering. Much of the practical work is based on computer simulation and small scale laboratory equipment not providing the necessary hands-on experience with power system equipment. In view of the learning outcomes there are several examples where the fundamentals are missing (see above). The time frame for this study programme does not allow reaching all the learning outcomes stated in the SER. The focus of this study programme is not sufficiently well defined as it aims to cover everything in power

engineering. A better approach is the concentration on several well selected practical aspects such as e.g. the structure, planning, operation and maintenance of distribution networks.

2. Curriculum design

The curriculum presented in the SER meets the legal requirements. The full-time (part-time) study programme lasts for three (four) years. The volume of each semester studies varies between five and seven courses. Each semester ends with one to three examinations. The professional activity practice in the part-time study programme is scheduled in the semesters one, four, five six and eight leading to a total of 30 credits. The studies end with the final project preparation and its defense. The study subjects and modules are spread evenly, their themes are not repetitive.

The electrical energetics study programme has two specializations:

1. Electrical energetic system exploitation specialization with the aim that the students understand electric energy stations, substations, electricity transmitting lines and electrical equipment, security and automation equipment, measuring systems of control assembling, testing and measuring works, electrical energetic objects equipment repairing and supervising technological control, organize business firms work.
2. Electrical energy supply specialization with the aim that the students understand the electric energetic equipment under normal and abnormal operating conditions including security aspects.

These two specialisations are not very differentiated and little motivation is given in the SER and during the on-site meetings for offering these two specialisations. During the on-site visit it was not possible to get detailed information how many students choose each specialization. The SER does not contain any information related to this aspect. In general it is noted that the provided practical work in the VCTD does not offer any opportunity to familiarize the students with high voltage or high current problems. It has been stated by the teaching staff that these topics are presented in the professional training centre; however this training centre was not presented during the on-site visit and hence no evaluation is possible with respect to the familiarization of students with real power systems. The content of the subjects and modules is generally speaking consistent with the type and level of the studies. They are appropriate for the achievement of the intended learning outcomes. The scope of the programme is sufficient to ensure learning outcomes. However, several modules require a better concentration on practical aspects as indicated in the following list:

1. The module “electronics” should provide some basic information on power electronics because this is important in view of industrial power applications.
2. The module “applied mathematics” should include an elementary introduction into probability and statistics in order to understand reliability concepts for power systems.
3. The module “fundamentals of automation and controllers” does not put enough emphasis on control principles such as feedback, stability, P-, PI-and PID controllers etc. This lecture should be better coordinated with the module concerning relay protection and automation in order to achieve the stated learning outcomes.
4. The module “theory of economics” should concentrate on the specific topics of power system economics.
5. The module “law” should be focused on energy laws in Lithuania and Europa.
6. The modules “electrical networks and systems”, “electric devices” and “high voltage technology” should be closer and consistently coordinated in order to a) avoid duplication and b) to provide the students with systematic and complementary information.
7. The module “renewable energy” should be better focused on decentralized energy generation and the integration of renewable energy sources into the existing distribution networks.
8. The module “smart electrical systems” lacks a clear focus and needs improvement because the presented version is a conglomeration of topics ranging from highest voltage transmission systems down to smart meters.

In conclusion, the content of the programme does not sufficiently reflect the latest achievements in modern electric power engineering.

3. Staff

The study programme is provided by the staff meeting legal requirements. According to the submitted SER there are 23 lecturers (four doctoral and 19 masters) covering the study field subjects, seven teachers (one doctoral and six masters) for general college study subjects and seven teachers (three doctoral and four masters) for special study subjects. Judging from the CVs attached to the SER it can be stated that at least 10% of the study field subjects are taught by scientists and more than 50% of the staff has at least three years of practical experience matching to the subjects they teach. The SER documents a continuous decrease of lecturers since 2006. No figures were disclosed to the evaluation team how many teachers have left the VCTD since the SER has been published. During the session with the person responsible for preparation of the SER only three of them listed in the SER were present. The person responsible for the writing the SER has left the college. It has been mentioned that two new teachers started to work during

the past 12 months. It is not clear whether the teaching staff turnover is able to ensure an adequate simultaneous provision of the full-time and part-time study programme because no convincing strategy was presented by the administrative staff how the available number of teachers will be adequately increased to offer both study programmes in electrical energetics. No convincing arguments were presented during the on-site visit that the number of the teaching staff will be adequate to ensure learning outcomes in both study programmes. According to the administrative staff the envisaged number of students in both study programmes should increase to 50 over the next three to five years. The ratio “students: lecturers” equals to 48 which is quite higher than the Lithuanian average value of 16. In particular in view of the full time study programme starting this year it is likely that this ratio may become worse in the future if no suitable steps are taken with respect to increasing the number of teachers. Taking this high teaching load into consideration, the introduction of a full-time study programme parallel to the part-time programme requires a larger number of teachers because all courses must be presented twice. The coordination between the two types of study programme leads to a considerable additional work and expenses not considered in the SER. The present age structure of the teaching staff is quite well balanced although the age group between 31 to 45 years is underrepresented. There is quite a lot of emphasize documented in the SER with respect to the vocational training of the teaching staff. It is noted that the VCTD creates adequate conditions for the professional development of the teaching staff. However, it is noted that most of these efforts are related to teaching abilities. Only two of the teachers in the study programme electrical energetics visited a foreign higher educational institute in 2011; hence international exchange of teaching staff is too low. Since there are fundamental and rapid changes in the European power industry it is absolutely mandatory that teaching staff members visit other European higher education institutions and industry in order to make themselves familiar with these changes. Some lecturers have little practical experience with the subject they teach (e.g. renewable energy systems, smart electric systems, modern conventional power plants, smart electrical distribution networks etc.) Since this study programme requires well trained lecturers with respect to practical industrial activities it is not adequate that - according to the SER - only three lecturers are actively involved in industrial consulting activities.

4. Facilities and learning resources

The number of available class rooms and laboratories are adequate both in size and quality with respect to the actual small number of students. Lecture rooms and laboratories are up to a uniform hygienically and edificial standard. No strategy has been shown during the on-site visit

how and when new premises will be made available for both study programmes. There is an on-going modernization programme until 2013 with respect to the laboratory equipment. Soft and hardware equipment is available for all the students. The lack of modern training facilities in electrical power systems including high voltage and high current laboratories has been noted during the on-site visit and hence the VCTD has not adequate arrangements for students' practice in these fields of electrical energetics. But their provision is absolutely mandatory for a successful electric energy study programme. Since no experience is available so far with respect to the newly introduced full-time study programme it is not yet clear whether the facilities will be adequate for this new study programme. The SER gives no information about the organisational aspects related to the introduction of the full-time programme. The provision for students' practice as far as simulation methods are concerned is well organized and evidence is provided regarding the opportunities available to students. Laboratories are pretty well equipped and the collaboration with Republican Training Centre of Energetics which can offer their own laboratories while the other building is under reconstruction shows that administration is solving problems in a good way. The teaching materials made available to the students are in the main appropriate. Evidence was provided to demonstrate that teaching materials such as laboratory scripts and textbooks are reviewed and updated regularly. Teaching materials (textbooks, books, periodical publications, databases) are adequate and accessible. The library is well equipped with the necessary text books for the different lectures. Access to other textbooks is guaranteed.

5. Study process and students' performance assessment

The admission procedure to the study programme is well founded and organized by the Association of Lithuanian Higher Education Institutions for common admission organization. The most important student admission criterion is the scores he has achieved in high school. According to the SER there is a considerable decrease of admitted students in 2010. The introduction of the full-time study programme may improve this situation. No female students have yet been inscribed in this study programme. The VCTD does not have any convincing strategy to improve this situation in the near future. The study process is explained in the SER. The organisation of the study process ensures an adequate provision of the programme. The information provided by VCTD for interested students is adequate. VCTD pays much attention to familiarize the students with career possibilities. VCTD takes much consideration to the working students with respect to the design of an individual study programme. VCTD has taken

suitable steps to avoid plagiarism but no statistics are provided. Each final thesis contains a declaration by the student that he only presents original own work.

Scholarships are available for indigent students although the number of scholarships has dropped in the last few years. With regards to academic support the teaching staff is available for consultations and there are also individual weeks allocated to individual student work. All information for students is published on the website of the VCTD. The student assessment is well explained both for the individual exams and the final thesis. The assessment system of students' performance is clear, adequate and publicly available. The link between module learning outcomes and the assessment undertaken within a module is well explained to the students. The drop-out rate is significant. Even after the on-site visit the question concerning an efficient strategy to change this large drop-out remains unanswered. VCTD analyses the graduates' placement every year; the high employment rate of the graduates is positively noted. There is no international mobility documented in the SER with respect to the students. This may be due to the fact that most part-time students are working and hence have no chance for a semester abroad. Concerning the incoming full-time students considerable efforts have to be undertaken in order to start an international exchange programme for students. According to the students they are not encouraged to participate in applied research activities. In the meeting with graduates and the employers they stated that the professional activities of the majority of graduates meet the programme providers' expectations.

The student member in the evaluation team offers the following remarks:

International mobility of students is limited, because until now in this program were just part-time students. Taking into account that full-time students were admitted this year administrative staff and international office should take this into account and do not forget about cooperation with universities, colleges and enterprise from other countries where students could get valuable information for the growth of their personalities. Moreover, there should be an encouragement to students to participate in this programme through active information dissemination by students and administrative staff. Through these activities the internationality of the study programme can be improved. Teachers are organizing additional lectures for new students to fill their knowledge gaps, because competitive points presented in self evaluation report are very different from the first and the last one who were admitted to this study programme and is very well-meant action to make all students more or less equal and keep study programme at optimum level of quality. During the on-site visit students also mentioned that these additional lectures are necessary for weak students. It was mentioned by the graduates during the on-site visit that it would be advantageous that after graduation students could get a certificate which allows them to work

with electrical equipment together with diploma, so this should be considered in administrative staff meetings. So far, it was just a part-time study programme and students said they have to do a lot of individual tasks, but they mentioned that they get all support and information that they need from teachers and all the news concerning timetables changes and exam dates is provided by the group tutor and students are happy about that. After looking through some individual course tasks written by the students it is noted that some papers are the same in content of the text just the numbers where different according to individual task. That is not appropriate and teachers should not accept this kind of work, because student should know not just how to count numbers, but how to put their numbers along with a text which explains the calculations and shows how student can explain what he or she did in this paper.

6. Programme management

There is a study programme committee consisting of seven persons to ensure the study programme quality and hence the responsibilities for decisions and monitoring of the implementation of the programme are clearly allocated. The quality assurance process is based on a strong formal procedure well communicated to all teachers involved. There is a continuous internal quality assessment process within the group of teachers in order to improve the study programme according to the needs of industry based on information and data regularly collected and analysed. Since several stakeholders work together with the teaching staff at VCTD in the evaluation of the final thesis there is a good chance to take their opinion and proposals into consideration. However, the opinion and experience of the graduates with respect to the usefulness of the study programme is not documented in the SER. According to the graduates there are informal information exchanges between VCTD and the graduates but – according to the graduates - the results are not recorded. The results of the quality assessment process are regularly published and made available to all stakeholders. Judging from the information given in SER the quality assurance process is well defined but its efficiency may be improved in the future in particular in view of the achievable programme aims and learning outcomes.

Since there are several staff retirements in the next few years this opportunity should be used to adapt the standard of the study programme to the actual requirements of power industry. This refers to future innovations in the field of power systems such as smart grids, smart markets, smart meters and decentralized power generation methods. The effectiveness of the quality assessment process will be achieved as soon as all future requirements of the electricity market together with the necessary regulation of the natural monopoly of power networks will be integrated in the future study programme in electric energetics. A clear orientation towards the

European development in power engineering must ensure that the graduates find recognition in the future energy environment.

III. RECOMMENDATIONS

3.1.

The programme aims and learning outcomes should be revised and significantly, explicitly and unambiguously adapted to what is possible for this study programme in electrical energetics under the given circumstances taking curriculum design, staff, learning resources, programme management, study process and assessment into consideration. The objectives of the programme should strictly be focused on the requirements of industry taking the other BA and MA study programmes at universities in power engineering into consideration.

3.2

This study programme should include more practical experience in the fields of high voltage and high current equipments, its installation, operation and maintenance. This programme has the potential to train professionals who are providing valuable practical services in power industry thus complementing the competences of BA and MA graduates in power engineering.

3.3.

Significant improvement of the quality of the study programme might be reached by strengthening the existing international teacher and student exchange programmes and by finding relatively similar partner-programmes in this study area.

3.4.

Undertaking practical industrial research and consulting is vital for the future development of a practical study programme in electrical energetics. Strong efforts must be undertaken to improve the relation between the teaching staff and industry. A strong engagement in industrial consulting of the majority of the staff members could result in a significant improvement of the study programme. Students should more actively participate in applied industrial research.

3.5.

The modernisation of the existing laboratories must be a long term project with a clear definition of priorities. The change to a full-time study programme may cause bottlenecks with respect to the number of available teachers, lecture rooms and laboratories. They have to be identified and resolved in an adequate manner.

VI. SUMMARY

This study programme in electrical energetics is a significant contribution to the growing need for practical engineers in power industry. The study programme is adequate but improvements in individual modules are necessary. The teachers efficiently support individual students if necessary. The cooperation with the engineering training centre is very important and much attention must be given to strengthening this cooperation. The studying facilities are adequate and there are good future prospects when the new building will be in operation next year. There is a clear vision for the growth in this study field: 50 students starting every year within the next three to five years in the two study programmes full-time and part-time. VCTD foresees that both programmes will be equally required by future students. The teachers have good international relations concerning the teaching process. There are interesting examples for good collaboration with industrial partners in the teaching programme. The quality assurance program is based on regular meetings including teachers, students, graduates and employers. The quality of the final thesis is high; they are well formulated and well presented. The declaration of originality in each final thesis is important to fight plagiarism efficiently.

The actual form of the study programme leaves the following potential for improvements. The quality of the submitted SER is not adequate and lacks coherence in view of a final and complete evaluation of this study programme. The programme aims and indented learning outcomes are not sufficiently focused on the requirements of a professional BA in electric energetics. Basic courses are overloaded with information and lack coherence with engineering topics. Several topics are not yet adequately covered e.g. automatic control, renewable energies, and smart technologies. The large drop-out rate of students in the part-time programme in the past is not adequately explained in the SER. Following the SER the students do not sufficiently participate in applied research. There is a strong lack of female students; no strategy is given how to improve this situation. Since the SER is rather contradictive with respect to the number and qualification of the actual teaching staff there are severe doubt whether the available teachers will manage to simultaneously offer a part-time and a full-time study programme without being heavily overloaded.

V. GENERAL ASSESSMENT

The study programme *Electric engineering* (state code – 653H63001) of Vilnius College of Technology and Design 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	2
2.	Curriculum design	2
3.	Teaching staff	3
4.	Facilities and learning resources	3
5.	Study process and students' performance assessment	3
6.	Programme management	3
	Total:	16

*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.

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<...>

V. APIBENDRINAMASIS ĮVERTINIMAS

Vilniaus technologijų ir dizaino kolegijos studijų programa *Elektros energetika* (valstybinis kodas – 653H63001) vertinama **teigiamai**.

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

* 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

Šia elektros energetikos studijų programa labai atsižvelgiama į didėjantį inžinierių praktikų poreikį elektros energijos pramonės srityje. Ši studijų programa tinkama, bet reikia gerinti pavienius modulius. Dėstytojai, prireikus veiksmingai remia pavienius studentus. Labai svarbu bendradarbiauti su inžinerijos mokymo centru ir skirti daug dėmesio šio bendradarbiavimo stiprinimui. Studijų materialieji ištekliai tinkami ir kitais metais pradėjus naudoti naują pastatą tikimasi, kad ateities perspektyvos pagerės. Matyti aiški šios studijų krypties plėtros vizija: kasmet per artimiausius 3–5 metus studijas pagal dvi – nuolatinės ir ištęstinės formos – studijų programas pradės 50 studentų. VTDK prognozuoja, kad būsimiems

studentams abi programos bus vienodai įdomios. Dėstytojai mokymo proceso klausimais palaiko gerus tarptautinius ryšius. Matyti gero bendradarbiavimo su pramonės srities partneriais įgyvendinant mokymo programą pavyzdžių. Kokybės užtikrinimo programa pagrįsta reguliariais susitikimais, kuriuose dalyvauja dėstytojai, studentai, absolventai ir darbdaviai. Baigiamųjų darbų kokybė gera; jie gerai parengiami ir pristatomi. Į kiekvieną baigiamąjį darbą įtraukta originalumo deklaracija yra svarbi veiksmingos kovos su plagiatu priemonė.

Toliau nurodyta, kaip būtų galima gerinti dabartinę studijų programą. Pateiktos savianalizės suvestinės kokybė nepakankama; suvestinė, atsižvelgiant į galutinį išsamų šios studijų programos vertinimą, nepakankamai nuosekli. Nustatant programos tikslus ir numatomus studijų rezultatus nepakankamai dėmesio skiriama profesinio elektros energetikos bakalauro reikalavimams. Per pagrindinius kursus pateikiama per daug informacijos, ji nepakankamai susijusi su inžinerijos temomis. Kai kurios temos, pvz., automatinio valdymo, atsinaujinančiosios energijos ir pažangiųjų technologijų, aptariamos nepakankamai. Savianalizės suvestinėje nepakankamai paaiškinta, kodėl praeityje daug studentų nutraukė iššęstinės formos programos studijas. Iš savianalizės suvestinės matyti, kad studentai nepakankamai dalyvauja taikomuosiuose tyrimuose. Labai trūksta studenčių; neparengta jų skaičiaus didinimo strategija. Iš tikrųjų dėstančių darbuotojų skaičiaus ir kvalifikacijos atžvilgiu savianalizės suvestinė palyginti prieštaringa, todėl kyla rimtų abejonių, ar esami dėstytojai sugebės vienu metu siūlyti nuolatinės ir iššęstinės formos studijų programą ir nebus pernelyg apkrauti.

III. REKOMENDACIJOS

1. Programos tikslus ir numatomus studijų rezultatus reikėtų persvarstyti ir kiek įmanoma šiomis aplinkybėmis labai gerai, aiškiai ir vienareikšmiškai pritaikyti prie šios elektros energetikos studijų programos, atsižvelgiant į programos sandarą, darbuotojus, mokymo išteklius, programos vadybą, studijų eigą ir vertinimą. Nustatant programos tikslus reikia griežtai laikytis pramonės reikalavimų, atsižvelgiant į kitas universitetų elektros energetikos bakalauro ir magistrų studijų programas.
2. Į studijų programą reikėtų įtraukti praktiškesnę aukštos įtampos ir aukštos įtampos įrangos, jos įrengimo, naudojimo ir priežiūros sričių patirtį. Pagal šią programą galima išugdyti profesionalius darbuotojus, kurie teiktų vertingas praktines elektros energijos pramonės paslaugas, kartu papildytų elektros energetikos bakalauro ir magistrų absolventų gebėjimus.

3. Šios studijų programos kokybę būtų galima labai pagerinti skatinant aktyviau dalyvauti esamose tarptautinėse dėstytojų ir studentų mainų programose ir ieškant palyginti panašių šios studijų srities partnerystės programų.
4. Ateityje rengiant praktinę elektros energetikos studijų programą, labai svarbu atlikti praktinius pramonės tyrimus ir rengti konsultacijas. Reikia labai stengtis gerinti dėstytojų ir pramonės atstovų ryšius. Studijų programa labai pagerėtų, jei dauguma darbuotojų aktyviai konsultuotųsi su pramonės atstovais. Studentai turėtų aktyviau dalyvauti taikomuosiuose pramonės tyrimuose.
5. Esamų laboratorijų modernizavimas turėtų būti ilgalaikis projektas, jo prioritetus reikėtų aiškiai apibrėžti. Programą pakeitus nuolatine studijų programa gali pritrūkti dėstytojų, patalpų paskaitoms ir laboratorijų. Šį trūkumą reikėtų tinkamai nustatyti ir šalinti.

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