



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

Alytaus kolegijos

**STUDIJŲ PROGRAMOS *KOMPIUTERINIŲ TINKLŲ*
ADMINISTRAVIMAS (valstybinis kodas – 653E14003)**

VERTINIMO IŠVADOS

EVALUATION REPORT

**OF ADMINISTRATION OF COMPUTER NETWORK (state code –
653E14003)**

STUDY PROGRAMME

At Alytus College

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Išvados parengtos anglų kalba
Report language – English

Vilnius
2016

DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	<i>Kompiuterinių tinklų administravimas</i>
Valstybinis kodas	653E14003
Studijų sritis	Technologijos mokslai
Studijų kryptis	Informatikos inžinerija
Studijų programos rūšis	Koleginės studijos
Studijų pakopa	Pirmoji
Studijų forma (trukmė metais)	Nuolatinė (3 metai), iššęstinė (4 metai)
Studijų programos apimtis kreditais	180 ECTS
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Informacinių technologijų profesinis bakalauras
Studijų programos įregistravimo data	Lietuvos Respublikos švietimo ir mokslo ministro 2007 m. gegužės 23 d. įsakymu Nr. ISAK-883.

INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	<i>Administration of Computer Network</i>
State code	653E14003
Study area	Technological Sciences
Study field	Informatics Engineering
Type of the study programme	College studies
Study cycle	First
Study mode (length in years)	Full-time studies (3 years), part-time studies (4 years)
Volume of the study programme in credits	180 ECTS
Degree and (or) professional qualifications awarded	Professional Bachelor of Information Technologies
Date of registration of the study programme	23 rd May 2007, under the Order of the Minister of the Ministry for Education and Science of the Republic of Lithuania No. ISAK-883.

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CONTENTS

I. INTRODUCTION	4
1.1. Background of evaluation process.....	4
1.2. General.....	4
1.3. Background of the HEI/Faculty/Study field/Additional information.....	4
1.4. The Review Panel.....	5
II. PROGRAMME ANALYSIS	6
2.1. Programme aims and learning outcomes.....	6
2.2. Curriculum design	7
2.3. Teaching staff	9
2.4. Facilities and learning resources	12
2.5. Study process and students' performance assessment.....	13
2.6. Programme management	14
III. RECOMMENDATIONS	17
IV. SUMMARY.....	18
V. GENERAL ASSESSMENT	20

I. INTRODUCTION

1.1. Background of evaluation process

The evaluation of on-going study programmes is based on the **Methodology for Evaluation of Higher Education Study Programmes**, approved by the Order No 1-01-162 of 20th December 2010 of the Director of the Centre for Quality Assessment in Higher Education (hereafter, SKVC). 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 the Self-evaluation Report (hereafter, the SER) prepared by a Higher Education Institution (hereafter, the HEI); 2) a visit of the Review Panel at the higher education institution; 3) preparation of the evaluation report by the Review Panel and its publication; 4) follow-up activities.*

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

The programme is **accredited for 6 years** if all evaluation areas were 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 SKVC.

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

Alytus College (hereafter, the College) is a public higher education institution that was founded in 2000. The College has three faculties and offers 13 study programmes with emphasis on practical training.

Administration of Computer Network is a three-year Professional Bachelor programme for full-time students and four-year for part-time students. The study programme is hosted by the Department of Information Systems in the ICT Faculty.

The Review Panel was asked to evaluate two study programmes at the College in addition to *Administration of Computer Network*, namely *Technologies of Information Systems* and *Multimedia, Design and Publishing Technologies*. These study programmes have several similarities, such as several overlapping study subjects, overlapping teaching staff and a shared management structure. These similarities are also reflected in the three SERs, which have several identical descriptions. Consequently, this evaluation report has similar descriptions as the other evaluation reports when addressing aspects that are common to the programmes. However, the Review Panel want to emphasize that each of the study programmes has been evaluated individually on its own merits according to the information provided.

1.4. The Review Panel

The Review Panel was composed according to the *Description of the Review Team Member Recruitment*, approved by the Order No 1-01-151, 11/11/2011 of the Director of the Centre for Quality Assessment in Higher Education. The visit to the HEI was conducted by the Panel on 26-27/04/2016.

1. Prof. Frode Eika Sandnes (Chair of the Team)

Professor at Oslo and Akershus University College of Applied Sciences, Norway.

2. Prof. Jürgen Dorn

Professor at Vienna University of Technology, Austria.

3. Prof. Kari-Jouko Rähä

Professor at University of Tampere, Finland.

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IT Security Officer at Klaipėdos Nafta, SC, Lithuania.

6. Ms Ieva Ulevičiūtė

3rd year student in Applied Mathematics (first cycle) study programme at Vilnius University, Lithuania.

II. PROGRAMME ANALYSIS

2.1. Programme aims and learning outcomes

The aim of the programme is to educate students for the labour market in the area of computer network administration. However, two partially antagonistic aims of the College are stated in the SER and were emphasized during the site visit, namely to internationalize the College and to serve regional businesses. This leads to the provision of English lectures and orientation towards international standards on one side and the adaptation to local needs on the other. This is a challenge for the College and the programme.

Besides the value of educating much-needed computer networks administrators the programme appears to be unique in a national context. It should therefore be possible, and probably easier, to strengthen its national position and reputation in Lithuania instead of pursuing the ambitious aim to build up an international programme.

The SER declares that graduates shall be “able to design, install and administer computer networks, servers, data centres or reorganise and integrate the existing ones in order to assure efficient performance of computer networks and servers and data security in a company, to use information sources, select target literature, classify and analyse it, constantly improve their competencies, think creatively and critically as well as analyse and generalise the results of their work”.

According to the College management, the aims are motivated by the needs of local businesses and the general market needs and these needs were confirmed during the Review Panel’s discussions with social partners.

According to the SER, the aims of the programme are to be achieved by six intended learning outcomes. The intended learning outcomes are listed in Table 1 of the SER and assigned to 39 study subjects in the curriculum indicated in Table 3 of the SER. Most of the intended learning outcomes appear to be too abstract and general. For example, it is not obvious to a potential employer what specific types of problems the graduate is trained to solve according to the intended learning outcome “Apply knowledge of fundamental sciences and basics of computer engineering in solving project-related, technological and organizational tasks of computer networks, servers and data centres.”. Some intended learning outcomes are assigned to over 15 study subjects and it is therefore difficult to identify the actual intended learning outcome of a specific subject. The assignment of the intended learning outcomes to study subjects leaves an

impression that the programme is highly research-oriented, while the aims of the programme signal a focus on practical experience. It may therefore be useful to split up the intended learning outcomes such that a more fine-grained learning objective-to-subject assignment is possible while making the profile of the programme more visible. The intended learning outcomes should be the vocabulary that is used to discuss expectations with social partners and communicate to students what they will learn. For example, the intended learning outcomes should state that the students should be able to solve programming tasks. The current intended learning outcomes do not describe the programming skills to be learned via the study programme.

The aims of internationalization and innovation should also be clearly reflected in the intended learning outcomes. Moreover, security is a key issue in Computer Networks Administration and students' ability to work with security in IT-systems should be clearly defined in the intended learning outcomes.

In general, the programme aims and intended learning outcomes are consistent with the type and level of studies and the level of qualifications offered.

A description of the programme and the intended learning outcomes are published on the Web¹, but the Review Panel was unable to locate the English language version. Also, the Lithuanian version published on the web lists 10 intended learning outcomes, as opposed to the six learning outcomes in the SER. The Review Panel has therefore used the SER as the authoritative source of information, but notes that the documentation is inconsistent. All applicable Lithuanian laws in terms of definition of the programme aims and intended learning outcomes appear to be regarded. The name of the study programme is compatible with the aims and content of the study.

2.2. Curriculum design

The study programme comprises of 180 ECTS, which is consistent with regulations for professional bachelor study programmes in Lithuania². The volumes for the full-time and part-time provisions are equivalent. The study programme description lists 15 ECTS general subjects, which is the minimum required by law³. However, the actual number can be considered to be

¹ <http://alytauskolegija.lt/studiju-programa/kompiuteriniu-tinklu-administravimas/>

² Order of the Minister for Education and Science of the Republic of Lithuania "General Requirements of First Degree and Integrated Study Programmes".

³ Order of the Minister for Education and Science of the Republic of Lithuania "General Requirements of First Degree and Integrated Study Programmes".

more than 15 ECTS as the study subjects *Mathematics, Physics, Fundamentals of Business, Electrotechnics, Electronics, Statistics, Environmental and Human Safety*, also can be classified as general subjects since these are not central to Administration of Computer Networks. The study field subjects total 150 ECTS which is above the minimum requirement of 135 ECTS⁴. Of these, 108 ECTS make up the compulsory study field subjects, 30 ECTS are allocated to practical training, and the final thesis comprises 12 ECTS, which is above the minimum legal requirement⁵.

The study subjects for both the full-time and part-time variations of the study programme are spread evenly, with one noteworthy exception. There is only one 3 ECTS subject related to the Administration of Computer Networks in the first semester, namely *Information Technologies*. The rest of the study subjects are not related to Informatics Engineering, namely *Standards of Professional Language and Document Management, Foreign Language, Fundamentals of Law, Mathematics, Physics* and *Fundamentals of Business*. Students interviewed expressed a desire to be introduced core subjects already from a day one. Students may be demotivated having to start with subjects that do not match their academic interests. This may consequently lead to some students dropping out. The College is thus recommended to introduce more subjects related to Administration of Computer Networks during the first semester to fuel students' enthusiasm for learning while moving non-related subjects to later semesters. There does not appear to be any repetitive themes in the study programme.

The contents of the study field subjects in the *Administration of Computer Network* study programme are relatively consistent with the type and level of Informatics Engineering studies worldwide although there perhaps could be more programming as only 12 ECTS in total are dedicated to programming (*Programming* and *Practical Training in Programming*). However, compared to other similar study programmes around the world it appears to be too many unrelated study subjects, both general subjects and study field subjects. In particular, it is unclear why *Mathematics, Physics, Electrotechnics, Electronics, Statistics, Fundamentals of Business* and *Computer Design* and *Environmental and Human Safety* are listed as core subjects and not general subjects as none of these subjects are related to the Administration of Computer Networks. If these study subjects were considered general subjects it would be apparent that

⁴ Order of the Minister for Education and Science of the Republic of Lithuania "General Requirements of First Degree and Integrated Study Programmes".

⁵ Order of the Minister for Education and Science of the Republic of Lithuania "General Requirements of First Degree and Integrated Study Programmes".

there are too many general subjects where some should be replaced by core subjects that are related to Administration of Computer Networks.

The study programme has a relatively wide profile. The study programme includes several highly relevant study field subjects that cover a wide range of computer network topics and technologies, in particular *Operating Systems, Windows OS Administration, Fundamentals of Computer Networks, Computer Networks, Linux OS Administration, Data Warehouses and Servers, Weak Current Networks, Virtualisation of Servers, Computer Networks (CCNA)* and *Open Source Systems*. Overall, the scope of the programme is sufficient to ensure the achievement of the intended learning outcomes.

The content and methods of the study subjects are appropriate for the achievement of the intended learning outcomes. Moodle is used for learning management.

The contents of the study programme adequately reflect the latest achievements in science and technologies. The College should be commended for current study subjects such as *Virtualization of Servers* and *Open Source Systems*. However, security is only present via 3 ECTS in the programme. This is not enough in the light of current cybersecurity threats around the world. Security has developed into a diverse and mature subject with separate security specialisations around the world, focusing on various topics such as intrusion detection, authentication and biometrics, social engineering, to mention a few.

2.3. Teaching staff

The teaching staff of the study field subjects is reported to consist of 19 teachers, six of whom are PhDs. Additionally, four teachers with Master's degree teach general subjects. The number of PhDs has doubled from 3 to 6 during the reporting period. 30 ECTS out of 150 ECTS in study field subjects, i.e. 20%, are taught by doctors of science, which satisfies the legal requirement of 10%⁶. However, it is noteworthy that only one of the teachers has the doctoral degree in Informatics Engineering. The other doctoral degrees are in Educology, Physics, Economics, Social Sciences, and Environmental Engineering and Landscape Management. A recommendation of the previous external evaluation was to “increase proportion of holders of scientific degree within teaching staff, especially in informatics core fields”. This is still a valid concern. The Panel recommend that the College makes an effort to increase the number of

⁶ Order of the Minister for Education and Science of the Republic of Lithuania “General Requirements of First Degree and Integrated Study Programmes”.

scientists in the teaching staff, for instance by supporting the doctoral studies of some teachers that currently have a Master's degree, as was the case with at least one of the PhD degrees obtained during the reporting period.

The average teaching experience of the teaching staff is 19 years, which is high. Four new teachers were hired during the evaluation period, so there is some turnover of the teaching staff. The average age of the teaching staff is 47 years. The teaching staff actively publish lecture material and participates in several committees and study programme development activities.

Another legal requirement is that at least half of the staff should have at least three years of practical experience⁷. This is satisfied by about 10 of 19 teachers listed for the study programme (excluding the general subjects), thus barely meeting the legal requirement. It is recommended to report on the practical experience of the staff in a way that details their work outside Alytus College and other educational institutes (both higher education and primary level) and shows how this experience is related to the study subjects they are teaching. It is difficult to identify the connection between the study subjects taught and prior practical experience from the CVs provided with the SER appendices. In any case, the Review Panel recommends that the College continues to make an effort to employ more teachers with recent relevant practical experience, for instance by recruiting part-time teachers from local industry who work with Computer Network Administration. The study subject descriptions indicate that representatives from companies have been consulted when developing the subject in cases where the teacher did not have relevant practical experience. Such consultations are indeed useful, but they do not eliminate the need for teachers with first-hand practical company work-experience.

It would also be helpful if the information gathered about teachers' experience included details about how the teachers have shared their time between teaching and practical work. For instance, one of the SER appendices lists that a 57 years old teacher has 34 years of teaching experience and 34 years of practical experience, totalling 68 years. Clearly, some of the experience reported must be part-time for these numbers totally, but it is not clear what is considered a full-time experience and what is considered a part-time experience.

The number of students has fallen from 50 in 2011 to 7 in 2015, and the ratio of students per teacher is stated to be 5 in the SER. Again, this is partly a reporting issue. Teachers share their time between several study programmes, and some work only part-time. A more useful metric

⁷ Order of the Minister for Education and Science of the Republic of Lithuania "General Requirements of First Degree and Integrated Study Programmes".

would be to use a full-time equivalent (FTE) both for students and teachers, so that a teacher using 20% of his or her time for teaching in this programme is counted as 0,2 teachers. Nevertheless, even with a revised metric it is a concern whether the programme is economically viable, that is, whether the College is able to attract a sufficient number of students to maintain the high level of personal supervision. Increasing the number of new students should be a main priority in future development efforts.

The field of Computer Networks Administration develops at a fast pace and requires the teachers to be well informed on new developments and they continuously need to update their skills. The Panel learned that there are only two such College study programmes in Lithuania. This gives the College the potential of a competitive edge if the programme establishes a reputation for being taught by highly competent staff. The College does support the development of the professional skills of the personnel based on their individual plans. The teaching staff have the opportunity to participate in international exchange, conferences, and other events that provide new knowledge. This commendable practice should be continued to the extent financially possible.

A particular skill that needs strengthening is working knowledge of the English language. Internationalization and attracting increasing numbers of foreign students is a core element of the strategy of the College. To achieve this goal, sufficiently many teachers must be able to communicate with international students. One possibility is to arrange English courses for the current teaching staff and reward efforts by individual teachers to improve their English, for instance via regular appraisal discussions and during contract renewal. Visiting lecturers from abroad can help to alleviate this issue, but the programme should not depend on their support.

The teaching staff are involved in various activities, including art exhibitions, termed “applied research” in the SER. These applied research activities are not the same as scientific research and only one international publication was listed in the CVs of the teaching staff, namely an article in the European Scientific Journal. The teaching staff are active in international mobility programmes, and it is recommended to extend such teacher exchanges to also include research activities as this may help increase the culture to be involved in research at the College. On the other hand, scientific research is not the main responsibility of the College. Still, it is important for students to learn the basics of the scientific method (problem description, analysis, experimenting, reporting), and they would benefit from the teachers using their own research experiences in the teaching.

2.4. Facilities and learning resources

The premises for studies appear adequate both in their size and quality. There are good conditions for students in the classrooms in terms of hygiene norms and technical facilities. Most of the equipment is up-to-date, the classrooms are renovated and equipped with the wireless Internet connection allowing students to use their own computers at the College. However, there does not seem to be enough electricity outlets for many students to use their own computers simultaneously.

Some of the classroom computers should be renewed and the College has plans for this in 2016. The College should carefully consider if it is more optimal to invest in many computers with moderate specifications or fewer computers with modern and higher specifications given that there are relatively few students enrolled onto the study programme.

The Microsoft DreamSpark programme allows students and teachers to use the latest software products. Several of these software products are de facto standard in many businesses.

The College has Cisco laboratory and plans to obtain a HP Laboratory to enhance students' practical experience with networking. There are also plans to renew the Cisco laboratory. The College provide students with VPN access allowing students access to internal resources for self-study outside the College.

It would be relevant for the *Administration of Computer Network* study programme to give students practice with a new server technology for virtualization. More importantly, the College does not have an infrastructure and laboratory where students can learn about network security attacks and train to prevent and protect against such attacks. The Review Panel suggest further improvement of the teaching resources in this direction.

The library is mostly stocked with outdated IT literature that does not reflect current state of the art in computer networking and security. However, the library has purchased a small quantity of some current and highly relevant titles. During the meetings with the Review Panel the students reported that eBooks were commonly used in the study subjects and that the library's limited stock of printed textbooks were unproblematic.

2.5. Study process and students' performance assessment

The admission requirements are clear, well-founded and available on the College website⁸. The average entrance marks listed in the SER are low – with 2.7 out of 10 in 2015 and 8.3 out of 23 in 2012, which may suggest that many of the students admitted to the *Administration of Computer Network* study programme have insufficient background in key subjects. Most first year subjects are non-study field subjects. According to the students interviewed, there should be more programming during the first year. One possible remedy is to include more programming in the first year and organise tests at the beginning of the study programme to identify students' prior knowledge.

Four of the six intended learning outcomes are technical, for instance “Apply knowledge of fundamental sciences and basics of computer engineering in solving project-related, technological and organizational tasks of computer networks, servers and data centres”. Yet, there are several study subjects that are not clearly linked to the intended learning outcomes such as *Fundamentals of Business, Project Management, Psychology* and *Marketing*. Data collected from the surveys indicate that graduates lack relevant practical experience when coming to a new workplace or dealing with challenging tasks. This impression was reinforced during the site visit. The Review Panel suggest to introduce tasks with higher level of difficulty and train students to solve these tasks in teams.

Another important goal of the College is to prepare graduates, who would be capable to fluently communicate in English and work in international teams. The College therefore hosts open lectures in English given by visiting professors. However, these lectures are mostly organised for general subjects such as Philosophy and Psychology. The site visit revealed that most students would prefer to perform coursework in international groups and have lectures together with the foreign exchange students at the College. The College is therefore encouraged to organise some common study field subjects for both local and foreign exchange students.

Administration of Computer Network study programme students do applied research during their final thesis relevant to the needs of the organisations or businesses where students find practice places. The site visit revealed that the students are quite positive towards participation in applied research activities during their studies. Some of the teachers claimed organising special projects that included students, but no evidence to prove this was given.

⁸ <http://alytauskolegija.lt/stojantiesiems/>

Students have opportunities to participate in Erasmus exchange programmes, but only four students have opted for this since 2010. One explanation given was that many students start to work during the 2nd or 3rd year of their studies making it more difficult to travel abroad. Graduates have an opportunity to continue their studies in Coventry University (the UK) where they can qualify for a Bachelor in Engineering after one year of study. Nearly 20 graduates of Alytus College have already used this opportunity.

The College organises adaptation events for the entrants of *Administration of Computer Network* study programme. Students are introduced to Moodle where they can find all the information related to their studies. Moreover, students are consulted by the Faculty Dean, the Head of Department, the group tutors and the teachers of the study programme. Consultations are also conducted via e-mail. Students can get help with their future career via the Career and Public Relations Centre. Disabled students are eligible for financial support. Students can retake exams. Students who have not failed any exams can apply for several types of financial support, including social grants, promotional grants, orphan's grants, mobility grants, one-time social grants or bonuses.

The assessment system of the study subjects is clearly explained in-class at the beginning of each semester and made available electronically. The final assessment of each subject is composed of the results from intermediate tests and the exam. The exam counts for 50% or more. The final assessments are uploaded onto the Moodle system where students log in and check their results. The final theses are evaluated by an Assessment Board with representatives of employers and teachers of the College.

According to the SER, approximately 44% (27 out of 61) of the graduates has found employment relevant to the study programme. The site visit revealed that this employment recently has risen to 55.7% (34 out of 61). The College should be commended on their active efforts to help students find practice places and help graduates to find relevant employment.

2.6. Programme management

The Internal Study Quality Management System was certified according to ISO 9001:2008 in 2013. Responsibilities for decisions and monitoring of the implementation of the programme appear to be clearly allocated. The Coordinator and the Study Programme Committee are the most central structures. The Study Programme Committee is responsible for the implementation

of the programme and the continuous quality supervision. The Coordinator oversees the daily implementation of the study programme.

Study programme quality surveys, graduate surveys and employer surveys are carried out every year. Students confirmed the systematic issue of surveys for each study subject during the site visit. However, the interviews revealed that there are several key issues that do not seem to have been identified, documented and handled by the quality management system. For example, students indicated that they had told the College that they would like programming basics to be moved to the first semester and general subjects to be moved to later semesters. This suggestion is indeed consistent with the pedagogical perspective of motivating students by introducing subjects that match their interest from the start. Moreover, stakeholders do not appear to be systematically informed of changes to the study programme resulting from their feedback. In addition to the implementation of changes resulting from feedback it is also important to inform stakeholders giving feedback about the consequences of their input as this is likely to motivate and encourage more constructive feedback and quality culture at the College.

The meeting with students revealed that some students are unsatisfied with the final thesis supervision. The Review Panel are unable to identify evidence that the College is aware of the quality of final thesis supervision nor takes systematic steps to ensure a minimum quality of final thesis supervision. Example initiatives could be to survey students' experiences with the final thesis work and to offer teaching staff courses in supervision.

The study programme was externally evaluated by an international Review Panel appointed by SKVC in 2012. The Panel listed several recommendations that subsequently were discussed in the Director's meeting, in the Study Programme Committee and among the teaching staff in the Department. Several of the recommendations have been followed up such as increasing the number of teaching staff with a PhD.

In addition to responding to surveys, stakeholders are also represented in various committees such as the group that prepared the SER and Study Programme Committee. The College also have regular round-table meetings with social partners to discuss improvements to the study programme. The College runs an Alumni Club to maintain contact with former students. Alumni are invited to provide suggestions for improvement.

The College has a well-defined study programme management structure on paper, but the management structure does not appear to be completely effective and efficient in practice. For

example, although the practical experience of the teaching staff currently satisfies the legal requirement, it is with a narrow margin. The study programme is thus vulnerable; if just one of the teachers with sufficient experience leaves the Department the legal requirements are no longer met. This critical situation was not identified or discussed in the SER, and the Review Panel did not get the impression that this was considered a critical situation during the meeting with the College management. For effective management of a study programme it is essential that the teaching staff situation and other areas with legal requirements, are constantly monitored, analysed and plans for improvement are put into effect.

III. RECOMMENDATIONS

1. *Exploit the national uniqueness of the study programme* in Lithuania instead of striving to build an international study programme.
2. *Make intended learning outcomes more specific* such that they clearly match the contents of the study subjects.
3. Clearly *define internationalisation, innovation, programming and network security in the intended learning outcomes*.
4. *Move more subjects related to Administration of Computer Networks to the first semester* and move non-related subjects to later semesters.
5. *Replace study field subjects unrelated to Administration of Computer Networks* with new and highly related study field subjects, especially more security and programming subjects.
6. *Increase the number of teachers with PhDs* in a field relevant to Administration of Computer Networks (Computer Science).
7. *More accurately monitor teachers' relevant practical experience*, and emphasize relevant practical experience when employing new teachers.
8. *Exploit teaching staff mobility programmes* as means to increase the international research activity among the teaching staff of the study programme.
9. *Monitor the quality of the final thesis supervision*.
10. *Ensure that the evaluations focus on issues of importance* such that critical areas are identified and necessary action is taken.

IV. SUMMARY

The aims of the study programme appear consistent with the needs of the region. Moreover, the study programme is unique in a national context and there are exciting possibilities to explore in terms of grasping a leading national position within the study field.

However, the intended learning outcomes appear to be too abstract and general. It is therefore difficult for prospective students and other stakeholders to understand what graduates of the study programme have learned. Instead, the intended learning outcomes should be more specific and more closely match the content of the study subjects. Internationalisation, innovation, programming and network security should be clearly defined in the intended learning outcomes.

The curriculum includes several highly relevant and up-to-date study field subjects, which makes this a unique study programme. However, the curriculum includes too little security and programming. Graduates will therefore not be fully prepared to solve certain networking and server problems, such as problems involving malicious attacks. More importantly, the curriculum contains too many study field subjects that could easily as well have been classified as general subjects as they have weak relevance to Administration of Computer Networks. The first semester is dominated by unrelated study subjects.

The study programme teaching staff meets legal requirements, but only by a small margin. Although the College has documented a growth in terms of teaching staff with PhDs in the study field, the number is still low. The College is thus recommended to continue their efforts to increase the ratio of teachers with relevant PhDs that are actively involved in research. More importantly, the number of teaching staff with relevant practical experience is low. Yet, teaching staff with relevant practical experience is crucial to this professional study programme. The College thus needs to focus their attention on the quality and relevance of the teaching staff's practical experience.

The facilities and learning resources are adequate to offer *Administration of Computer Network* study programme. This is also the case for the study process and students' performance assessment.

There are problems with the management of the study programme, as the systems seem unable to identify key issues that need attention. For example, the College does not appear to have identified that the ratio of teaching staff with relevant practical experience is marginally above the legal minimum limits. Another example is that the College seems unaware of the quality of

final thesis supervision. Adjustments must be made such that substantial and relevant issues are systematically identified and documented, and that the College is able to act accordingly.

V. GENERAL ASSESSMENT

The study programme *Administration of Computer Network* (state code – 653E14003) at Alytus College is given a 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	2
2.	Curriculum design	2
3.	Teaching staff	2
4.	Facilities and learning resources	3
5.	Study process and students' performance assessment	3
6.	Programme management	2
	Total:	14

*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. Frode Eika Sandnes
Grupės nariai: Team members:	Prof. Jürgen Dorn
	Prof. Kari-Jouko Räihä
	Assoc. Prof. Jaanus Pöial
	Mr Juozas Breivė
	Ms Ieva Ulevičiūtė

**ALYTAUS KOLEGIJOS PIRMOSIOS PAKOPOS STUDIJŲ PROGRAMOS
KOMPIUTERINIŲ TINKLŲ ADMINISTRAVIMAS (VALSTYBINIS KODAS –
653E14003) 2016-07-14 EKSPERTINIO VERTINIMO IŠVADŲ
NR. SV4-169 IŠRAŠAS**

<...>

V. APIBENDRINAMASIS ĮVERTINIMAS

Alytaus kolegijos studijų programa *Kompiuterinių tinklų administravimas* (valstybinis kodas – 653E14003) vertinama **teigiamai**.

Eil. Nr.	Vertinimo sritis	Srities įvertinimas, balais*
1.	Programos tikslai ir numatomi studijų rezultatai	2
2.	Programos sandara	2
3.	Personalas	2
4.	Materialieji ištekliai	3
5.	Studijų eiga ir jos vertinimas	3
6.	Programos vadyba	2
	Iš viso:	14

* 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)

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IV. SANTRAUKA

Studijų programos tikslai atitinka regiono poreikius. Be to, studijų programa yra unikali, todėl programos vykdytojai turi puikią galimybę tuo pasinaudoti ir užimti pirmąją poziciją šalyje šioje studijų kryptyje.

Vis dėlto studijų programos numatomi studijų rezultatai yra pernelyg abstraktūs. Atitinkamai būsimiems studentams ir kitiems išorės socialiniams dalininkams sunku suprasti, kokie tiksliai specialistai yra rengiami šioje studijų programoje. Programos numatomi studijų rezultatai turėtų būti konkretesni ir glaudžiau sietis su studijų dalykų turiniu. Numatomuose studijų rezultatuose turėtų aiškiau atsispindėti tarptautiškumo dimensija, inovacijos, programavimas ir tinklų apsauga.

Studijų programoje yra dėstoma keletas labai svarbių ir aktualių krypties dalykų, kurie užtikrina šios studijų programos unikalumą. Vis dėlto programoje yra per mažai kompiuterių saugos ir programavimo dalykų. Kyla pavojus, kad programos absolventai nebus visiškai pasirengę spręsti tam tikras su kompiuterių tinklais ir serveriais susijusias problemas, pavyzdžiui, kilusias dėl kenkėjiškų atakų. Taip pat pabrėžtina, kad studijų programoje yra per daug studijų krypties dalykų, kuriuos taip pat galima priskirti ir prie bendrųjų, dėl menkų jų sąsajų su kompiuterių tinklų administravimu. Pirmajame semestre dominuoja būtent su informatikos inžinerija tiesiogiai nesusiję studijų dalykai.

Studijų programos dėstytojai atitinka teisės aktų reikalavimus, bet tik nedidele persvara. Nors programos vykdytojai dokumentuose ir nurodė, kad dėstytojų, turinčių mokslo daktaro laipsnį, daugėja, tačiau jų vis dar yra per mažai. Todėl rekomenduojama toliau didinti mokslo daktarų inžineriniuose moksluose skaičių. Taip pat svarbu daugiau dėmesio skirti personalo įsitraukimui į mokslo tiriamąją veiklą. Pažymėtina, kad studijų programoje trūksta tinkamos praktinės patirties turinčių dėstytojų, o jie vykdant kolegines studijas yra labai svarbūs. Programos vykdytojai turi užtikrinti dėstytojų praktinės patirties kokybę ir aktualumą.

Patalpos ir mokymosi išteklių yra pakankami *Kompiuterinių tinklų administravimo* studijų programos vykdymui. Tą patį galima pasakyti apie studijų eigą ir studentų pasiekimų vertinimą.

Problemų kyla dėl studijų programos vadybos – esama sistema nesukuria prielaidų identifikuoti esminių programos silpnybių. Pavyzdžiui, programos vykdytojai nenustatė, kad dėstytojų, turinčių reikiamą praktinę patirtį, skaičius vos peržengia teisės aktais nustatytą žemiausią ribą. Kitas pavyzdys – programos vykdytojams nėra žinoma, kad studentai susiduria su problemomis, susijusiomis su vadovavimo baigiamiesiems darbams kokybe. Būtina pasirūpinti, kad sistemingai būtų identifikuojami ir dokumentuojami svarbiausi ir aktualūs probleminiai klausimai ir kad kolegija galėtų imtis atitinkamų priemonių reikiamu metu.

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III. REKOMENDACIJOS

1. ***Daugiau dėmesio skirti studijų programos unikalumo plėtojimui šalyje***, užuot stengusis sukurti tarptautinę studijų programą.
2. ***Sukonkretinti numatomus studijų rezultatus***, kad jie visa apimtimi derėtų su studijų dalykų turiniu.
3. ***Numatomuose studijų rezultatuose turi aiškiai atsispindėti tarptautiškumas, inovacijos, programavimas ir tinklų apsauga.***
4. ***Daugiau su kompiuterinių tinklų administravimu susijusių dalykų perkelti į pirmąjį studijų semestrą***, o nesusijusius dalykus – į vėlesnius semestrus.
5. ***Studijų krypties dalykus, kurie tiesiogiai nesusiję su kompiuterinių tinklų administravimu, pakeisti naujais, susijusiais studijų dalykais***, ypač įtraukti daugiau su kompiuterių sauga ir programavimu susijusių dalykų.
6. ***Padidinti skaičių dėstytojų, turinčių mokslo daktaro laipsnį*** kryptyse, kurios yra susijusios su kompiuterinių tinklų administravimu (kompiuterių mokslu).
7. ***Atidžiau stebėti, kad dėstytojai turėtų sukaupę dėstomą dalyką atitinkančios praktinės patirties*** bei ją akcentuoti į darbą priimant naujus dėstytojus.
8. ***Pasinaudoti dėstytojų judumo programomis*** kaip priemone skatinti programos dėstytojų tarptautinę mokslo tiriamąją veiklą.
9. ***Stebėti vadovavimo baigiamiesiems darbams kokybę.***
10. ***Užtikrinti, kad atliekant programos vertinimą didžiausias dėmesys būtų skiriamas svarbiausiems dalykams***, siekiant nustatyti labiausiai tobulintinas sritis ir imtis reikiamų veiksmų.