STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

Panevėžio kolegijos

STUDIJŲ PROGRAMOS *KOMPIUTERIŲ TINKLŲ ADMINISTRAVIMAS*

(valstybinis kodas – 653E14005)

VERTINIMO IŠVADOS

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EVALUATION REPORT

**OF *COMPUTER NETWORK ADMINISTRATION*
(state code – 653E14005)**

STUDY PROGRAMME

At Panevėžys College

1. **Prof. dr. Frode Eika Sandnes (Chair of the Team),** *academic,*

2. **Prof. dr. Jose Luiz Fiadeiro,** *academic,*

3. **Adj. Prof. dr. Kjell Lemstrom,** *academic,*

4. **Mr. Tomas Kazragis,** *representative of social partners',*

5. **Mr. Ričard Siliuk,** *students' representative.*

Evaluation Coordinator Ms Birutė Noreikaitė

DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	*Kompiuterių tinklų administravimas*
Valstybinis kodas	653E14005
Studijų sritis	Technologijos mokslai
Studijų kryptis	Informatikos inžinerija
Studijų programos rūšis	Koleginės studijos
Studijų pakopa	Pirmoji
Studijų forma (trukmė metais)	Nuolatinės (3), ištęstinės (4)
Studijų programos apimtis kreditais	180 ECTS
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Informacinių technologijų profesinis bakalauras
Studijų programos įregistravimo data	Įsakymo nr. ISAK-809, 2004-05-21

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INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	*Computer Network Administration*
State code	653E14005
Study area	Technological Sciences
Study field	Informatics Engineering
Type of the study programme	College type studies
Study cycle	First
Study mode (length in years)	Full-time (3), Part-time (4)
Volume of the study programme in credits	180 ECTS
Degree and (or) professional qualifications awarded	Professional bachelor of Information technology
Date of registration of the study programme	Minister of Education and Science of the LR Order No.ISAK-809, May 21, 2004

CONTENTS

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 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 Higher Education Institution (HEI) follows the outline recommended by SKVC. Along with the Self-evaluation Report (SER) and Annexes, the following additional documents have been provided by the HEI before, during and/or after the site-visit:

No.	Name of the document
1.	Additional teaching staff CVs missing from the SER annex
2.	
3.	

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

Panevezys College (hereafter, the College) is a public HEI founded in 2002. The College has undergone several structural reforms from its original faculty organization to a departmental organization in 2014 and now back to a faculty organization in 2016. The College is organized into three faculties.

Computer Network Administration is a three-year Professional Bachelor programme for full-time students and four-year for part-time students. The Computer Network Administration Study Programme is hosted by the Faculty of Technological Sciences.

The Review Panel was asked to evaluate two study programmes at the College in addition to Computer Network Administration, namely Information Systems and Electronic Business Technology. These study programmes have several similarities, such as several overlapping study subjects, overlapping teaching staff and a shared management structure. These similarities are reflected in the three SERs, which have several identical descriptions. Consequently, this report has similar descriptions as the two 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 2nd of March, 2017.

1. **Prof. dr. Frode Eika Sandnes** (Chair of the Team) – *Oslo and Akershus University College of Applied Sciences, Norway.*
2. **Prof. dr. Jose Luiz Fiadeiro** - *Royal Holloway University of London, The United Kingdom of Great Britain and Northern Ireland.*
3. **Adj. Prof. dr. Kjell Lemstrom** – *University of Helsinki, Finland.*
4. **Mr. Tomas Kazragis** – head of IT department, *Adform, Lithuania.*
5. **Mr. Ričard Siliuk** - *student of Information Systems, Kaunas University of Technology, Lithuania.*

II. PROGRAMME ANALYSIS

2.1. Programme aims and learning outcomes

The Computer Network Administration Study Programme aim is *to train information technology professionals being able to design, implement and administrate company and organization computer networks, operate servers and organize the related engineering activities. The learning outcomes capture this aim, especially via will implement and administrate computer, server and network operating systems ensuring uninterrupted network service, will diagnose and remove computer software and hardware, and computer network equipment failures, upgrade and control computer systems, apply innovative work organization methods, industrial work safety regulations and engineering standards, and will apply technical and organizational information security measures for the transmission of data over computer networks; ensure the security, availability, integrity and confidentiality of electronic data.* The programme aims and learning outcomes therefore appear clear and well defined. They are publicly accessible in English on the College's Web site (http://panko.lt/en/programa/kompiuteriu-tinklu-administravimas/).

The SER mentions regular consultation meetings with graduates and social partners as key means to ensure that the programme aims and learning outcomes reflect professional requirements, public needs and the needs of the labour market. This claim was confirmed by the students and the social partners during the visit. The revision was also aligned with the internationally recognized ACM curriculum guidelines for Computer Science.

Overall, the programme aims and learning outcomes are consistent with the type and level of studies and the level of qualifications offered. The name of the programme, its learning outcomes, content and the qualifications offered are compatible with each other.

2.2. Curriculum design

The curriculum of the Programme has been designed to comply with the description of the general requirements for the first cycle conferring degree full-time study programmes (Ministry of Education and Science, Order No. V-501, 2010) and in accordance with the Statute of Panevezys College.

The curriculum meets the legal requirements for first degree Professional Bachelor (college) study programmes as the scope of the Programme is 180 ECTS (minimum: 180 ECTS, maximum: 210 ECTS) of which 135 ECTS are defined as being in the study field (minimum: 135 ECTS). There are 15 ECTS of general college-level study subjects (minimum: 15 ECTS), 33

ECTS of internship practice (minimum: 30 ECTS) and a 9 ECTS final thesis (minimum: 9 ECTS). The number of subjects is evenly distributed across the semesters as no semester contains more than 7 subjects, which is the legal maximum.

The scope of the programme is sufficient to ensure learning outcomes and its content reflects, to a good extent, the latest achievements in technologies. In particular, the review panel commends the College for the inclusion of modern network management technologies such as software-defined networking, and the OpenFlow standard.

However, the programme could be strengthened in some areas that would allow students to be equipped with skills that go beyond current office network administration skills and prepare them for emerging trends in WiFi and The Internet of Things (Cyberphysical Systems). Internet of Things is projected to transform the society and the economy. Elements that perhaps could be introduced into the curriculum include state-of-the-art microcontroller devices and kits such as Arduino and Tessel, and miniature computing technologies such as Raspberry Pi, as well as low-power wireless and mesh networking standards and technologies including IEEE 802.15.4, ZigBee and XBee. The College points out that some elements on Internet of Things are included in Digital controlling systems. However, Internet of Things is not covered explicitly, or even mentioned, anywhere in the Study subject course descriptions.

Another issue that needs attention is that of inconsistent descriptions of subjects that are shared, or seemingly shared, across different study programmes. For example: The subject Programming for Mobile Devices is offered to two other study programmes in addition to Computer Network Administration, namely Electronic Business Technology and Information Systems. A subject with the same name offered to both the Information Systems and Electronic Business Technology Study Programmes gives 6 ECTS. However, the subject Programming for Mobile Devices offered to the Computer Network Administration Study Programme has the same abstract and learning outcomes as the subject offered Information Systems and Electronic Business Technology students, yet the number of hours is only half and the subject only gives 3 ECTS.

The subject Databases and Information Systems is also offered to the three study programmes with the same number of credits. Those offered to Information Systems and Computer Network Administration are essentially the same apart from the learning outcomes, which are worded differently. The version offered on the Electronic Business Technologies Study Programme is

however different from the other two in that, essentially, ORACLE APEX is taught instead of MS Access.

The subject Mobile Network Technologies is offered to on both the Information Systems and Computer Network Administration Study Programmes with identical number of ECTSs, but their learning outcomes and contents are different although there is some overlap. For example, the subject offered on the Information Systems Study Programme includes wireless networks, while the subject offered on the Computer Network Administration Study Programmes does not include wireless networks (this is instead covered in Local and Wireless Access Networks). Subjects with different learning outcomes should have unique names to prevent confusion.

There are also major overlaps between the mathematics subjects of the different study programmes, some with the same name and others with different names. The College is encouraged to ensure that subjects that are shared across several study programmes are given consistent descriptions and the same number of ECTS. Again, subjects that are not shared between several study programmes should have unique names to prevent confusion. The College is also encouraged to rationalise the teaching of mathematics across all study programmes.

The review panel also highly recommends that the English version of the Applied Mathematics subject is revised as has several language issues, in particular: "Bull's algebra" should probably be "Boole's algebra", "Tailor" should be "Taylor", "MacLean" and "Macloren" should be "Maclaurin". Moreover, it is not clear what is meant by "Lines of Figures and Functions"; it is not clear whether "series" or "polynomials" is referring to "Spreading functions in Furze line" related to Fourier series/transforms or if "Greius's application codes" is "Gray's code".

2.3. Teaching staff

The Study Programme is offered full-time (three years) and part-time (four years). At the time of the visit, there were 33 students enrolled into the Study Programme of which 12 were full-time and 21 part-time. The Information Systems Study Programme is taught by 27 docents, lecturers and assistants. All of the teachers hold at least a Bachelor degree, and 14.8% of the teachers holds a doctoral degree. The formal requirement, stating that at least 10% of the teaching staff must hold a doctoral degree, is therefore satisfied.

According to annex 3 of the SER, teaching experience has been counted as practical experience in the study field. Consequently, the reported percentage is artificially high. The Review Panel interpret the Lithuanian regulations regarding 50% of teaching staff having three years or more

practical experience, as practical experience from the professional practice field, such as industry, to bring best practices into the Study Programme. Based on the CVs provided as an annex to the SER the Review Panel identified that 14 teachers, that is 51.9% of the teachers, appears to have more than 3 years of practical experience in the subjects they teach. Although, this legal requirement is met, the College is vulnerable to sudden teaching staff changes and should therefore take preventative steps to reduce the risks of falling below the 50% minimum requirement.

According to annex 4 of the SER and additional documentation provided the educational background of the teaching staff comprises a total of 40 degrees (BA, MA and PhD), where only two degrees were obtained outside Lithuania (Russia and Belarus). The College therefore may consider prioritising applicants with foreign degrees in future recruiting processes to improve the academic diversity at the College. However, 16 teachers have strengthened their international experience though academic visits at foreign HEIs.

A total of 33 students were enrolled during the academic year 2015-2016, of which 12 were full-time and 21 part-time students. The student/teacher ratio was therefore 1.22 (=52/21). This ratio, however, may be misleading since most of the teaching staff also teaches on several other Study Programmes. However, the Review Panel is convinced that the individual needs of every student are adequately accommodated.

There was a low teaching staff turnover during the reporting period. On one hand this is beneficial as this stability ensure continuity. On the other hand the College risks unfavourable stagnation. At the moment the average age of teachers is approximately 54 years which relatively high. Overall age profile should be carefully considered in future recruitment processes.

The staff has produced an acceptable quantity of publications, also in International forums as all but 11 of the teachers have their works listed on Google Scholar.

According to the SER the teaching staff has limited pedagogic training. The College is therefore encouraged to offer its teaching staff formal pedagogical training and consider whether such courses should be compulsory for newly employed teachers, and that attendance and passing of such courses also could be a condition for contract renewal.

2.4. Facilities and learning resources

The College is located in the city centre and is therefore easily accessible through public transport. The College occupies several buildings that have varying levels of quality. The main building appears recently renovated. Other buildings, especially the one housing most of the Study Programme activities appear to require urgent maintenance, as their standard is far below the standard of the work environments found in enterprises where students will work after graduating. The main building is adapted for people with disabilities, however this is not the case for other buildings on campus. The buildings on campus should all be made accessible for disabled individuals. It is difficult to navigate between the buildings as there are very little signposting. It would be easier for all to navigate around campus if the College put up additional signs in strategic locations.

The SER states that the classrooms for lab work and practice are well-equipped and with enough workspaces to fit all programme students (SER, page 19). However, the Review Panel did find that the facilities matched the descriptions in the SER during the site visit. The computers in classrooms vary in age. Each computer is accessed with one account, and students do not have individual student accounts. Some of the computers appeared bloated as students store their work in the same desktop environment. Some of the rooms are spacious and others feel cramped. For example, students are paired in the network lab where they must work together on one table which looks uncomfortable. A few classrooms have a good standard, such as the CAD classroom. The SER emphasizes a lack of sever labs as a weakness. However, the College introduces students to server administration via the College server room.

The network equipment and server room was not fitted according to what is considered best practice in industry. An unsuitable rack was used for network equipment, as it could not be closed due to a lack of space for cabling. Cables are not installed and managed properly and the setup appears unorganized and chaotic. The air conditioning unit was installed above the electricity panel. In case of air conditioning malfunction and condensation leaks there is a high risk of fire. These issues showcase a poor example for students and potential IS engineers who themselves will be responsible for such setups. A network equipment rack with cables management system should be acquired and installed. The air conditioning unit and electricity panel should be relocated to eliminate the fire hazard. Safety should be repeatedly evaluated in all laboratories and throughout the premises. The Review Panel suggest that cable management and marking practices are also introduced for students.

The SER stats that student can bring their own laptops to classes, but the rooms inspected during the site visit had insufficient number of power outlets, and power outlets in hard-to-reach locations requiring students to unplug College computers. The Review Panel experienced some problems with the Wi-Fi network. However, the students reported that the Wi-Fi-network is unproblematic.

The software described in the SER matched what was observed during the site visit. Most of the computers run newer version of the Windows operating system and students have access to Office 365. Some laboratories have outdated software and hardware, for example Windows XP, and the Review Panel got the impression that teachers have no plans of moving to newer platforms, citing hardware driver issues as the reason. CNA students are using relatively dated hardware in their network classes although the College indicated that upgrades will be prioritized once financing is secured. Students use free software where possible and are issued with software licences when required, allowing them to work at home.

Random tests during the site visit revealed that the software configuration appeared to have some problems. For example, one computer could not be used until 10 minutes after startup. The College is recommended to review workstations configurations and install centralized configuration management tools. Moreover, one workstation tested by the Review Panel during the visit was operated with one common account shared by all students. All documents were stored on the workstation desktop allowing everyone to access everything. In response to the first draft of this report the College claims that "LDAP (Lightweight Directory Access Protocol) has already been used by students when they connect to wireless networks and to the systems of the academic information system AKADIS, it has already been prepared for student authentication when connecting to the workstations of the College network". The College should therefore carefully ensure that the centralized user management system is fully deployed on all the College computers to improve the security.

The Library appears to be in good condition. An increasing amount of non-Russian language textbooks is being purchased. According to the students the College's library is rarely visited by the students. The stock of printed textbooks are outdated. However, students have access to more recent e-books and access to research databases. The lecturers are responsible to use recently updated textbooks and materials, while some textbooks used in the curriculum is somewhat dated. According to the students most of the study materials are obtained from Moodle, and the

students expressed satisfaction with this practice. However, to improve the relevance and quality of the material offered to students the College is recommended to systematically monitor and analyse teaching materials usage and needs.

The College provides sufficient arrangements for student practice. Students can choose from a list of companies or find a company themselves. The College has several agreements with various businesses in the region. Several students have gotten job offers from the companies where they did their practice.

2.5. Study process and students' performance assessment

The admission process to studies at Panevezys College is certified by the Ministry of Education of the Lithuanian Republic. Therefore, the admission and selection criteria are clear and openly available.

A document describing the study process is openly accessible via Panevezys College website (http://panko.lt/). The organisation of the studies appears simple and efficient and follow the typical pattern in Lithuania where 16 weeks are set aside for studies and 4 weeks for exams. The College offers several optional subjects. Lecturers present evaluation criteria and goals during the first lecture of the semester. Students' performance is monitored and reported to the administration in order to prevent students from dropping out or failing. A couple of first year students drop out from the study programme each year. The College explains this is due to students not checking the formal requirements and the expected work demands before enrolling.

Students have the option of joining the Student Scientific Society for applied research activities. The Student Scientific Society organizes research conferences and represents College in several national events. Students are also encouraged to attend subjects that introduce research, such as the subjects Applied Research, Computer Literacy and Information Control. CNA students have also represented the College in several IT-related events throughout the lifetime of the Study Programme. The Student Scientific Society has their own research journal.

The College has signed several mobility agreements with other HEIs from other countries with similar study programmes. Students therefore have opportunities to participate in international exchange programme. Students are introduced to mobility programmes during the Introduction Week, through meetings with former Erasmus students and College staff. Mobility opportunities do exist but some students are prevented from participating, usually due to financial reasons.

During the lifetime of the Computer Network Administration Study Programme two students participated in the Erasmus mobility programme.

Academic support for students appears adequate as the College organizes Introduction Week, assigns tutors for academic groups as well as the provision of individual tutors on request. The College uses the Virtual Learning Environment, Moodle. About half of the CNA students receive incentive scholarships. Social scholarships are also available. Students can postpone their assignment deadlines, and change exam dates. From the second year and onwards students are free to attend some classes on individual schedule. Students mentioned that teachers try to address issues that arise during classes and are generally responsive. Students are also free to attend student organized sports and entertainment events.

Students access their grades and assessment methods via AKADIS. AKADIS is also used at the end of the semester to run questionnaire surveys related to the subjects. Students mentioned that they are asked to complete these questionnaires, but that there never had been any issues.

The College organizes annual student research conferences and takes part in other conferences organized by other HEIs. In addition, a periodical collection of student research studies are published. Since 2012, the College has been organizing the international electronics and informatics contest – EITech. Students are encouraged to participate in both conferences at the College and other HEIs.

The SER did not contain much information about what feedback the College solicit from employers regarding the graduates. The SER states that the College monitors students' career and average salaries, but other information may be equally relevant such as the reasons why some students do not work in the IT field and why some students have left the country. The College is recommended to maintain contact with Alumni and systematically solicit feedback from graduates and their employers as this may provide the College with valuable information for amending and improving the Study Programme.

2.6. Programme management

According to the SER the College quality management system adheres to the standard requirements of ISO 9001:2008 (specifies requirements for a quality management system where an organization needs to demonstrate its ability to consistently provide product that meets customer and applicable statutory and regulatory requirements, and aims to enhance customer satisfaction through the effective application of the system, including processes for continual

improvement of the system and the assurance of conformity to customer and applicable statutory and regulatory requirements) and LST EN ISO 9001:2008 (Lithuanian version of the approved ISO standard 9001:2008, regulates the same aspects of quality management process). It has been outside the scope of this evaluation to validate conformance with these standards. However, the Review Panel commends the College on their general efforts to follow such international and national quality standards.

There have been several organizational changes during the history of the College. The Study Programme is now hosted by a Faculty which until recently was a Department. This is a reversal to a similar structure set up when the College was established in 2002. However, the new organization from 2016 does not seem to have fully penetrated the organizations as several paragraphs of the SER still refers to the old department organization of 2016 and prior. The argument for the current organization is that the faculty deans resume more power. Consequently, the director has lost power.

The organization of the responsibilities for decision and monitoring of the implementation of the programme are similar to what is employed in other Lithuanian HEIs. The study programme is overlooked by the Informatics Engineering Programme Committee, which is organized within the Faculty. The chair of the Programme Committee reports to the Faculty dean. The Programme Committee is responsible for monitoring and analysing the study programme quality, develop the programme and evaluate changes to the subjects made by the teachers. The study committee is also responsible for maintaining contact with graduates and social partners. The Programme Committee also advices the Faculty head during the selection of new staff.

The strategic action plan of the College focuses on 11 criteria that according to the SER are regularly monitored, including students' final practice, percentage of students on exchanges abroad, students drop off, etc. In 2015/2016 a survey of students' attitude towards the relevance of the programme was conducted. Information about the employment of graduates leaving for abroad is also collected. According to the SER social partners and employers are regularly asked to complete surveys to correlate the suitability of the program to the needs of society and students. Occasionally, other areas are receive specific focus such as a survey of students' academic honesty 2014-2015, students experience with practice in 2015 and issues related to final year theses in 2016. The College is one of 25 Lithuanian HEIs that participate in the national Career Management Information System. According to the SER its consolidated report is used to analyse the employment situation of graduates. The Expert Panel is left with an

impression from the visit that surveys and reporting are performed routinely and mechanically, but that strategic analyses and discussions of these materials could be done more extensively.

The Study programme has only existed since 2012 and has not yet been subject to an external evaluation. Given the fact that very few students yet have graduated from the programme it would not seem feasible to perform an elaborate external evaluation before now.

According to the SER lectures are involved in the quality improvement processes as they communicate with students, can propose changes to the study programme to the Programme Committee and the Dean of the Faculty. Similarly, students are regularly surveyed and are represented in the Programme Committee. Students can also voice their opinion via the College feedback system Ask. The SER states that representatives of employers are often invited in committee work when the study programme is revised. They are also participating in final thesis evaluation, where they get an impression of the qualification of the students.

The SER emphasises the important role of social partners in the development of the programme since the relevance of the curriculum is paramount to the success of the Study Programme. The Faculty therefore attempts to keep close contact with the practice field within Administration of network and computing practice field. The expectations of social partners are therefore solicited regularly and used to revise the study programme. The Computer Network Administration Study Programme was last revised in 2013/2014 (see SER Section 1.2). Representatives from the college regularly visit companies in the region and the college encourages internships in companies for its teaching staff. The involvement of stakeholders was confirmed during the site visit.

The SER emphasizes that students can voice their opinion in the Academic Council. However, there are no Computer Network Administrations students with seats on the Academic Council. Currently, one of the Information Systems students in the same Faculty holds such a seat as a student representative. However, it was not possible for the Review Panel to explore whether the Computer Network Administration students are able to channel concerns via this student representative in practice.

The College has a well-defined study programme management structure on paper, but the management structure appears to leave room for improvement in term of its effectiveness and efficiency in practice. One serious issue that has not been captured by the internal quality assurance system is the practical experience of the teaching staff. The SER states that 61.47% of

the teaching staff has more than 3 years of experience in the subject field they teach. According to the CVs in Annex 4 of the SER the Expert panel find that only 51.9% of the teachers satisfy this criterion. There is thus a discrepancy between the College and Review Panel's calculations indicating that the management effectiveness needs improvement. In their comments to this report the College insists that actually 66.66% have 3 years of relevant practical experience. The Review Panel have carefully reviewed the CVs and the resubmitted staff list. The Review Panel finds that the College is somewhat rather flexible in their interpretation of what is considered practical experience and the Review Panel is not convinced by the explanations. For example, one teacher is listed as having 14 years of practical experience related to Computer Aided Design, yet he is listed as only holing leadership positions (head and director). A typical leader, such as a head or a director does not involve themselves in the technical details of computer aided design. The Review Panel find it not feasible that this can be considered relevant practical experience. Moreover, another teacher is listed as having 12 years of practical experience relevant to Programming Module, Computer Networks, Web-based Systems Management Practice, Programming for Mobile Devices and Framework Programming all based on serving as Head of the Panevezys College Cisco Computer Network Academy (since 2006) and engineer in KTU Panevezys faculty from 1979-1981. Clearly, there were no Web and mobile programming during 1979-1981 when this teacher worked as an engineer and it is therefore impossible to have such experience from this work. Moreover, it is not feasible that a Head of a Cisco Computer Network Academy will have practical industrial-strength experience with Mobile Devices and Framework Programing which are mostly unrelated to networking. Similar arguments can be presented for the teacher who is listed as having 7 years of (part-time) experience related to Professional Foreign Language (English), while only working as a teacher within Lithuania. One would expect that a person needs to spend a substantial amount of time abroad in order to acquire relevant foreign language experience. Another example includes the teacher who is listed as having 9 years of experience related to Professional Ethics simply by working at Panevezys Sugar Works. The College needs to improve its routines and standards for monitoring staff competence. Moreover, it is matter of concern that the College has been unable to detect and correct the problems associated with the apparent maintenance needs in some buildings.

The English version of the Study Programme description has several language problems. The SER also has several language mistakes. Moreover, the change from Department to Faculty has not been consistently propagated throughout the document. Several of the teaching staff's CVs were missing in the original SER annex. These are all signs that efficiency of the Study Programme management has room for improvement.

III. RECOMMENDATIONS

1. Introduce students to emerging trends in WiFi and The Internet of Things (Cyberphysical Systems).

2. Ensure that each subject with distinct descriptions or number of ECTS is given a unique name, and that shared subjects are given the same name, descriptions and number of ECTS, to avoid misleading stakeholders.

3. Rationalise the teaching of mathematics across all study programmes.

4. The English Study Programme description needs careful proofreading and a major revision.

5. Recruit more staff with 3 years or more of practical experience related to the Study Programme.

6. More accurately monitor teachers' relevant practical experience, and emphasize relevant practical experience when employing new teachers.

7. Recruit more staff with foreign degrees or substantial international experience.

8. Take steps to lower the average age of teaching staff.

9. Offer compulsory pedagogical courses for newly recruited teacher and for teachers with renewed contracts.

10. Make the College accessible to students with disabilities.

11. Renovate and maintain the College buildings.

12. Evaluate the current power outlet situation and install additional power outlets at suitable locations throughout parts of the College used by students.

13. Ensure that all College computers are secured with centralized user management where each student has his or her own account.

14. The network server room should be cleaned up and configured to reflect standards found in industry to set a good example for student.

15. The library should systematically monitor and analyse students learning resource needs.

16. Ensure that the evaluations focus on issues of importance such that critical areas are identified and necessary action is taken.

IV. SUMMARY

There is an undisputed need for technical personnel with the competence to administer computer infrastructure reliably and securely and the Computer Network Administration thus fills an important gap. The Computer Network Administration Study Programme has a satisfactory clear aim and learning objectives that are captured well by the Study Programme name. The curriculum is relevant for the given learning outcomes, although the inclusion of certain emerging technologies would help keep the curriculum up to date.

The teaching staff meets minimum requirements. However, the percentage of teachers with relevant practical experience is close to the minimum limit. The average age of the teaching staff is high, and their formal pedagogical training is limited.

The College has satisfactory facilities and learning resources. Some of the buildings are in need of maintenance and the server room needs a major overhaul.

The study process and students' performance assessment are good and on par with other Lithuanian HEIs.

The Study Programme management is satisfactory. The College regularly collects data and conducts surveys and oversee processes for improvements of the Study Programme. However, the College could adjust its management such that it is better equipped to identify emerging problems and take necessary corrective actions. It is of utmost importance that a technological Study Programme such as Computer Network Administration is responding to changes in technology, international trends, professional practices, demographics, society expectations and staffing situations in a timely manner.

V. GENERAL ASSESSMENT

The study programme *Computer Network Administration* (state code – 653E14005) at Panevėžys 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	3
2.	Curriculum design	2
3.	Teaching staff	2
4.	Facilities and learning resources	2
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:	Frode Eika Sandnes
Grupės nariai: Team members:	Jose Luiz Fiadeiro
	Kjell Lemstrom
	Tomas Kazragis
	Ričard Siliuk

PANEVĖŽIO KOLEGIJOS PIRMOSIOS PAKOPOS STUDIJŲ PROGRAMOS
KOMPIUTERIŲ TINKLŲ ADMINISTRAVIMAS **(VALSTYBINIS KODAS – 653E14005)**
2017-07-07 EKSPERTINIO VERTINIMO IŠVADŲ NR. SV4-153 IŠRAŠAS

V. APIBENDRINAMASIS ĮVERTINIMAS

Panevėžio kolegijos studijų programa *Kompiuterių tinklų administravimas* (valstybinis kodas – 653E14005) vertinama **teigiamai**.

Eil. Nr.	Vertinimo sritis	Srities įvertinimas, balais*
1.	Programos tikslai ir numatomi studijų rezultatai	3
2.	Programos sandara	2
3.	Personalas	2
4.	Materialieji ištekliai	2
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

Techninio personalo, turinčio kompetencijos patikimai ir saugiai administruoti kompiuterių infrastruktūrą, poreikis rinkoje yra neginčytinas, todėl šią didelę spragą užpildo Kompiuterių tinklų administravimo studijų programa. Kompiuterių tinklų administravimo studijų programai nustatytas aiškus siekis ir studijų tikslai, kurie tinkamai atsispindi studijų programos pavadinime. Atsižvelgiant į nustatytus studijų rezultatus, studijų turinys yra tinkamas, nors jį būtų galima nuolatos atnaujinti įtraukiant tam tikras naujas technologijas.

Dėstytojai tenkina minimalius reikalavimus. Tačiau dėstytojų, turinčių susijusios su studijų programa praktinės patirties, skaičius tesiekia minimalų reikalavimą. Vidutinis dėstytojų amžius yra didelis, o formalusis pedagoginis pasirengimas – ribotas.

Kolegija turi patenkinamą materialiąją bazę ir metodinius išteklius. Kai kuriems pastatams reikia remonto, serverių patalpai – kapitalinio remonto.

Studijų procesas ir studentų mokymosi rezultatų vertinimas yra geri ir lygiaverčiai kitų Lietuvos aukštųjų mokyklų vykdomam studijų procesui ir studentų mokymosi rezultatų vertinimui.

Studijų programos valdymas patenkinamas. Kolegija reguliariai renka duomenis, vykdo apklausas bei prižiūri studijų programos tobulinimo procesus. Tačiau Kolegija galėtų pakoreguoti programos valdymą taip, kad jis padėtų geriau nustatyti kylančias problemas, ir imtis reikiamų taisomųjų veiksmų. Labai svarbu, kad vykdant tokią technologinę studijų programą kaip „Kompiuterių tinklų administravimas" būtų laiku reaguojama į technologijų pokyčius, tarptautines tendencijas, profesinę praktiką, visuomenės lūkesčius ir aprūpinimo personalu situaciją.

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III. REKOMENDACIJOS

1. Supažindinti studentus su naujomis belaidžio interneto ryšio (Wi-Fi) ir daiktų interneto (kiberfizinių sistemų) tendencijomis.

2. Kad dalininkai nebūtų klaidinami, užtikrinti, kad kiekvienas dalykas, kuriam parengtas aiškus aprašas ar nustatytas ECTS kreditų skaičius, turėtų unikalų pavadinimą, o bendriems dalykams būtų naudojami tie patys pavadinimai, aprašai ir apimtis ECTS kreditais.

3. Racionalizuoti matematikos dėstymą visose studijų programose.

4. Anglų kalbos studijų programos aprašą būtina atidžiai patikrinti ir iš esmės atnaujinti.

5. Priimti į darbą daugiau nei 3 metų ar didesnės su studijų programa susijusios praktinės patirties turinčių dėstytojų.

6. Atidžiau kontroliuoti tinkamą dėstytojų praktinę patirtį ir priimant į darbą naujus dėstytojus ypatingą dėmesį skirti jų tinkamai praktinei patirčiai.

7. Priimti į darbą daugiau dėstytojų, įgijusių mokslinį laipsnį užsienio šalyse arba turinčių didelę tarptautinę patirtį.

8. Imtis veiksmų siekiant sumažinti dėstytojų vidutinį amžių.

9. Padaryti pedagoginius kursus privalomus naujai priimtiems dėstytojams ir dėstytojams, kurių sutartys buvo atnaujintos.

10. Neįgaliems studentams užtikrinti galimybę patekti į Kolegijos patalpas.

11. Renovuoti ir suremontuoti Kolegijos pastatus.

12. Įvertinti esamą padėtį dėl elektros lizdų ir visose Kolegijos patalpose, kuriomis naudojasi studentai, tinkamose vietose įrengti papildomus elektros lizdus.

13. Užtikrinti, kad visi Kolegijos kompiuteriai būtų prijungti prie centralizuotos vartotojų valdymo sistemos, kurioje kiekvienas studentas turėtų savo paskyrą.

14. Tinklo serverio patalpa turi būti išvalyta ir pertvarkyta taip, kad atitiktų pramonės standartus, o studentams būtų rodomas geras pavyzdys.

15. Biblioteka turėtų sistemingai stebėti ir analizuoti studentų poreikius metodiniams ištekliams.

16. Užtikrinti, kad atliekant vertinimą dėmesys būtų skiriamas svarbiems klausimams ir būtų nustatytos kritinės sritys bei imtasi reikiamų veiksmų.

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

Vertėjos rekvizitai (vardas, pavardė, parašas)