STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

Vilniaus Gedimino technikos universiteto

STUDIJŲ PROGRAMOS „ INFORMACINIŲ TECHNOLOGIJŲ PASLAUGŲ VALDYMO“ *(valstybinis kodas – 612I13001)* VERTINIMO IŠVADOS

EVALUATION REPORT OF *"INFORMATION TECHNOLOGY SERVICE MANAGEMENT"* (*state code - 612I13001*) STUDY PROGRAMME

at Vilnius Gediminas Technical University

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Išvados parengtos anglų kalba
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DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	**Informacinių technologijų paslaugų valdymas**
Valstybinis kodas	612I13001
Studijų sritis	Fizinių mokslų
Studijų kryptis	Informatika
Studijų programos rūšis	Universitetinės studijos
Studijų pakopa	Pirmoji
Studijų forma (trukmė metais)	Nuolatinė, 4 metai
Studijų programos apimtis kreditais	240 ECTS
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Informatikos bakalauras
Studijų programos įregistravimo data	Lietuvos Respublikos švietimo ir mokslo ministro 2008 m. balandžio 24 d. įsakymu Nr. ISAK-1175

INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	**Information Technology Service Management**
State code	612I13001
Study area	Physical sciences
Study field	Informatics
Type of the study programme	University studies
Study cycle	First
Study mode (length in years)	Full-time (4 years)
Volume of the study programme in credits	240 ECTS
Degree and (or) professional qualifications awarded	Bachelor of Informatics
Date of registration of the study programme	24th of April, 2008, under the order of the Minister of the Ministry of Education and science of the Republic of Lithuania No. ISAK-1175

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I. INTRODUCTION

1.1. Background of the evaluation process

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

The evaluation is intended to help higher education institutions to constantly improve their study programmes and to inform the public about the quality of studies.

The evaluation process consists of the main following stages: *1) self-evaluation and self-evaluation report prepared by Higher Education Institution (hereafter – HEI); 2) visit of the review team at the higher education institution; 3) production of the evaluation report by the review team and its publication; 4) follow-up activities.*

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

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

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

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

1.2. General

The Application documentation submitted by the HEI follows the outline recommended by the SKVC. Along with the self-evaluation report and annexes, the following additional documents have been provided by the HEI before, during and/or after the site-visit:

No.	Name of the document
1.	*Examples of final Bachelor's graduation work*

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

The subject of this evaluation was the 4-years Information Technology Service Management bachelor level study programme offered by the Department of Information Technology, Faculty of

Fundamental Sciences, Vilnius Gediminas Technical University (hereafter, referred to as the VGTU). It resides within the Informatics field of study.

The basis for the evaluation of this study programme is the Self-Evaluation Report (hereafter, referred to as the SER) prepared in September 2016, its annexes and the site visit of the Review Team to VGTU on May 2nd, 2017. The visit included meetings with different groups: the administrative staff of the faculty (including the Dean), the staff responsible for preparing the self-evaluation documents, teaching staff, students, alumni and social partners. The Review Panel evaluated various support services (classrooms, laboratories, library, computer facilities), examined a sample of students' work, and various other materials.

After the Review Panel discussions and the additional preparation of conclusions and remarks, preliminary general conclusions of the visit were presented to staff of the study programme. After the visit, the Review Panel met to discuss and agree the content of their final report.

1.4. The Review Panel

The Review Panel was completed according to Description of expert's recruitment, approved by order No. V-41 of Acting Director of the Centre for Quality Assessment in Higher Education. The Review Visit to HEI was conducted by the team on 2nd May 2017.

1. **Prof. Jerzy Marcinkowski (team leader),** Professor in Institute of Computer Science Wrocław University, Wrocław, Poland;

2. **Prof. Sirje Virkus** –Professor in Tallinn University (TLU), School of Digital Technologies, Estonia;

3. **Prof. Frode Eika Sandnes** - Professor of Oslo and Akershus University, Colleage of Applied Sciences, Norway;

4. **Dr. Radvilė Krušinskienė** Callcredit, UAB, Platform Operations Manager, Lithuania;

5. **Mantas Jurgelaitis,** academic Assistant in Kaunas Technology University (KTU), Faculty of Informatics, Information Systems Department. Bachelor degree of *Information's systems*. Specialization in programming in Internet information system and database. Graduated 2016, Lithuania.

II. PROGRAMME ANALYSIS

2.1. Programme aims and learning outcomes

The Study Programme objective is “to train well-qualified IT specialists able to design, build, maintain and run organisational IT infrastructure and services”. This is a clear and well-defined goal with a specific focus on organizational IT. The goal is further supported by 22 learning outcomes. Each of these learning outcomes is expressed as a single and understandable statement, which makes it easier for students and stakeholders to understand what the Study Programme entails. Moreover, most of these learning outcomes are concise, some of which are more general to the area of informatics and others are specific and highly relevant to Information Technology Service Management with their focus on IT related to business and organizations such as “Able to analyse requirements for a subject area and opportunities for IT system development or modernization” and “Ability to analyse and model the IT service management processes”.

The programme objectives and learning outcomes are available in Lithuanian on the University website (https://medeine.vgtu.lt/programos/programa.jsp?fak=10&prog=30&sid=F&rus=U). However, there is a mismatch between the information published online and the information in the SER as the online version appears to describe three more elaborate objectives and only lists four learning outcomes. However, these learning outcomes does not match those listed in the SER, i.e. AG1-AG3 in the SER and AG1-AG4 in the version online all relating to personal skills. The staff responsible for preparing the SER explained that this was due to a limitation with the content management system. Moreover, according to the SER the diploma supplement only includes a shortened form of the learning outcomes. An example shown to the Review Panel revealed that this is because the diploma supplement template does not have sufficient space for the learning outcomes. Despite the limited space in the diploma supplement template, the University is encouraged to continue using such a comprehensive list of clear and specific learning outcomes.

According to the SER (Section 6.1) the Study Programme attracts many applicants (between 250 and 450 of them in each of the last 5 years) and most graduates find relevant employment before or after they complete their studies. This success demonstrates that the programme aims and intended learning outcomes are linked to state, societal and labour market needs. Several official projections, both nationally and globally indicate a growing need for IT-specialists. Moreover, the objectives and learning outcomes are consistent with those found in related study programmes internationally.

The objectives and intended learning outcomes links well with professional requirement as the study programme emphasizes that students develop teamwork abilities, ethical conduct,

communication skills, structured work and entrepreneurial skills, characteristics needed in the organizational IT profession.

The Study Programme emphasises the design, building, maintenance and running of organisational IT infrastructure and services, which is highly consistent with the international norms for related study programmes. Moreover, goals and learning outcomes are well aligned with first cycle generic learning outcomes. There is a consistency and clear connection between the name Information Technology Service Management, the programme objectives, the learning outcomes and the course content, in that they all address informatics in general with a specific focus on IT in organizations and business.

2.2. Curriculum design

The curriculum of this study programme overlaps, in 85%, with another study programme offered by Department of Information Technologies, namely Engineering Informatics (EI). It is unclear to the Review Panel how the University can justify naming these two provisions as separate programmes when there is this much overlap. An alternative, and perhaps less misleading organization, would be to offer one programme with 15% of elective specialisation courses.

The Study Programme meets legal requirements as it totals 234 ECTS where the allowed range is from 210 to 240 ECTS. Of these, 171 ECTS are Study Field subjects (minim 165 ECTS), 15 ECTS are set aside for general university subjects (minimum 15 ECTS) and 18 ECTS are allocated for elective subjects (maximum 60 ECTS). The minimum limit of 15 ECTS for internships is satisfied. The final thesis totals 15 ECTS (minimum 12 ECTS). The work is spread out evenly as the number of subjects range from 5-7 (maximum 7) and no academic year have more than 60 ECTS in total.

The curriculum has a balanced design as each semester comprises a mix of core informatics topics, topics related to IT in organizations and business and other. For example, in the first semester the students have 15 ECTS of core informatics topics, namely Information technology and programming introduction and Operating Systems, with 3 ECTS of business related topics, namely Business Fundamentals, Discrete Mathematics 1 and the remaining 12 ECTS comprises general courses, that is, Fundamentals of Mathematical Analysis and one optional language course. A similar balance can be found in the other semesters. The students can also choose from several elective courses throughout the Study Programme.

The curriculum covers a broad range of topic and there is generally little overlap. One exception may be in object orientation. There are three courses related to object orientation namely Object-

Oriented Programming, Object-Oriented Design and Object Oriented Programming Techniques. The first of these covers object oriented programming from a general perspective using C++, while the last course covers more applied side of object oriented programming through GUI programming with Java. The Object-Oriented Design appears to look more at the principles of design. It is unlikely that students will get a sufficiently deep understanding of two relatively large programming languages such as C++ and Java in one Study Programme, and one may argue that it is better that students learn one of these languages in more depth. One may also question the use of C++ in a Study Programme aimed towards business and organizations. C++ is not commonly used in business and enterprises. Java, especially enterprise Java, does have a marked share, but several students indicated that C# would be more relevant for their future jobs. Indeed, C# is a more modern language used by many businesses and organizations.

The content of the subjects follow international conventions for informatics and computer science bachelor programmes. The learning outcomes which are formulated in a focused manner map quite clearly to the courses and the content of the courses are typical for what to expect at first cycle within informatics. In fact, the four-year curriculum comes across as strong compared to many three year bachelor programmes found in many other countries. It is thus natural to expect that graduates of the Study Programme should have a very strong foundation in Information Technology Service Management.

The course Philosophy does not seem to be relevant for Information Technology Service Management professionals. The course Probability Theory and Mathematical Statistics could perhaps be made more relevant to the Study Programme. A small part of the course (two hours) is set aside for “testing of parametric and non-parametric hypothesis”. This important topic cannot be covered sufficiently in two hours. One recommendation is to shift focus from some of the other topics to a more applied approach with focus on hypothesis testing. Similarly “elements of linear regression and correlation analysis” is covered in two hours, which is not enough to get a useful understanding of this topic which is relevant to the Study Programme.

The curriculum includes several highly relevant and updated courses such as Service Oriented Architecture, Testing and Information Security Fundamentals. Current and relevant topics that are not covered which the University should strongly consider to include in the curriculum include virtualization technologies, enterprise computing, big data, data mining and data warehousing, software deployment, in particular continuous micro-service deployment.

The learning objective Z3 relates to the important topic of service design and reads “Knows principles of information systems and IT service design and management”. Although this learning outcome is listed in several of the courses, it is seemingly not explicitly covered in the curriculum.

Considering the importance of service design and the specific profile of the Information Technology Service Management Study Programme one would expect that the University would have one entire course dedicated to service design.

Moreover, it is indeed highly commendable that the University have introduced a course dedicated to testing. However, it appears from the SER that testing replaced a former course on Human Computer Interaction (HCI). The Review Panel would like to emphasize that testing and Human Computer Interaction is two totally different and unrelated topics. Testing is usually related to technical implementation, while HCI relates to the phenomena surrounding humans' use of computers. Although HCI often focus on usability testing, this is indeed quite a different form of testing. Given the importance of the human factor in organizational IT and the graduates need to understand how to make user interfaces with high usability the University is strongly encouraged to reintroduce a course on Human Computer Interaction or User Experience Design with a user centred design focus.

The course Information security fundamentals appears mostly to focus on encryption. This is somewhat an outdated view on security and the university is encouraged to update the content with a wider perspective on security in IT systems and organizations. In fact, it would perhaps be enough to cover encryption in one or two lectures. Given the importance of security and increasing amount of cyber threats facing organizations students should be trained with security high on the agenda.

The Review Panel believe that the programme can indeed prepare very decent graduates for the job market. But it seems that the only target the curriculum designers had on mind were average students and there is no offer, in the curriculum, for more ambitious and more able students. There are no advanced versions of electable courses and seemingly no research seminars.

2.3. Teaching staff

According to Annex 2 to the institution's SER, the teaching staff of the programme consists of 35 teachers. Their average age is about 46 which is high compared to international standards but seems to be below the Lithuanian academic system average. Since the teachers who teach courses of the program under review also teach courses for other programs, it is only possible to estimate the students/teachers ratio. As the Review Panel learned during its visit to VGTU, there are about 25 academic staff members and about 250 students in the Department of Information Technologies. Some of the staff members teach also courses for programmes run by other departments (about 25% of the teaching time of the staff goes outside the department) and some of the courses (about 30%) of the programmes run by Department of Information Technologies are outsourced to other

departments. This leads to the estimate that the students/teacher ratio for the programmes run by Department of Information Technologies is less than 10, which is correct. The staff turnover is low.

The Review Panel learned that the average teaching load of the staff is about 10 hours a week. This appears too much. A heavy teaching load gives less time to conduct research. Moreover, this heavy teaching load combined with less than 10 students per teacher signal poor management.

24 of the programme teachers hold PhD degrees, so the statutory condition that "more than half of the teaching staff of a university must be scientists" is easily, at least in the formal sense. But only five of the teachers hold PhD degrees in computer science/informatics and three in closely related areas (mathematics, applied mathematics). The remaining 16 PhDs are in other fields, mainly social sciences and humanities (and also civil engineering).

Taking this all into account the Review Panel concludes that t**he number of teaching staff is adequate to ensure learning outcomes of the programme** but clearly without any redundancy.

Research activity not only is legally required from the University but also is postulated by the Mission Statement of Vilnius Gediminas Technical University (http://www.vgtu.lt/about-university/mission-vision-objectives-/4127):

> »The university's vision is to be a prestigious Lithuanian institution of higher education, the scientific and studies level of which conforms to the best European technical universities' level. «

Teachers are being evaluated every 5 years, according to the criteria set by the University, which include research assessment, based on the number of publications.

Of the 300 publications listed in the CV annex to the SER, 201 publications, or 66%, can be classified as directly relevant to the Study Programme dealing. This is a high quantity considering the reporting spans several years. Of these 201 publications the Panel counted 126 publications related to non-informatics aspects such as business, management, etc. Hence the research is more biased towards the management side (63%) compared to the technical side (37%). Since it is a technical Study Programme the University is encouraged to stimulate more technically oriented research. The remaining 99 publications represent research not related to the Study field. The University should be commended on the fact that most of the staff are actively contributing by authoring research publications, being relevant to the Study Programme or not.

In terms of quality the Panel counted that a total 148 of the publications appear in journals, of which a majority of 104 publications appear in national journals and 44 publications in international journals. Information Technology Service Management is a highly international field and therefore to publish as much as 70% of the work in national journals may not sufficiently stimulate quality, development and innovation. The Panel therefore recommend that the staff associated with the Study Programme shifts the focus from national to international journal publication. Note that the Panel was unable to check for possible duplicates and the publication counts may be too high.

A total of 60 publications have been published in national conference proceedings and 78 publications have appeared in international conference proceedings. We can thus conclude that the staff have an sufficient international orientation in its research orientation.

When analysing the reputation of the international publication channels related to the Study Programme the Panel is unable to identify any top-tier or world-class leading venues. A few of the publications appear in proceedings published by Springer, Elsevier, IEEE and ACM which is considered relevant for the Study Programme and the University is commended for this effort. It is the Panel's view that too many of the works are published in lesser-known venues. The University is encouraged to stimulate the staff to publish in more renowned international venues with high impact, for example IEEE and ACM to strengthen the international research profile. However, the quality even within ACM and IEEE varies greatly and tools such as CORE can be a useful tool in to help make strategic choices regarding reputable publishing venues of impact. In fact, the University points out that 24 of the publication venues are listed in CORE. These publications constitute approximately 8% of the total publication output. This equates approximately 0.14 CORE publication per staff member per year (35 teachers, five-year reporting period). The University is commended for the quality of these results although they are few. The University is encouraged to work towards increasing the number of such high-quality publications. One could argue that is may be better with more quality and less quantity. Note that it is not clear whether these CORE publications listed by the University apply to the staff associated with the Informatics Engineering Study Programme or the Information Technology Service Management Study Programme.

There is indeed a motivation system in place which rewards teachers for publishing.The Review Panel finds this evaluation/motivation system is unfortunate as it discourages activities that give impact in computer science. Individual researchers should be assessed based on their real research, not only publication quantity. Otherwise the incentive promotes researchers to look for opportunities to publish weak papers in write-only venues. One possible solution could be to introduce a local incentive system tailored for the needs of this Study Programme.

However, since research skills are not among the main learning outcomes of the programme, the Review Panel have reasons to believe (based on the opinions of the social partners, alumni and students, and also on the quality of the Bachelor theses, which we find to be above the acceptability bar) that the **teaching staff members have satisfactory knowledge of the subjects taught and satisfactory teaching competences to ensure learning outcomes** of the programme.

2.4. Facilities and learning resources

The Review Panel was given a tour of the facilities and learning resources. All classrooms were fully functional, had projectors for presentations as well as interactive boards and met the requirements for a learning environment. There are six computer laboratories which house 153 personal computers and 4 classrooms containing up to 200 seats. Facilities are entirely sufficient to meet the needs of students on the programme. Internet connection is sufficient and EDUROAM wireless network is accessible throughout the premises. Technical and hygienic conditions in the laboratories and classrooms are comfortable, although some computer classes had high doorsteps making accessibility difficult. All the premises correspond to the modern requirements of work safety and hygiene.

Classrooms have access to generic software and teachers can access subject discipline software. Students are provided with a set of academic licenses for software and have access to a virtual environment, which hosts several academic software packages such as Matlab, Microsoft Office and CAD tools.

The staff members seem to utilize the available learning resources (library, laboratories, learning spaces, etc.) very well. The premises/facilities include a well-equipped e-learning unit, both providing resources that enhance the teaching/learning experience.

Students of the Programme have the possibility to use the services of VGTU library, as well as reading rooms in the faculty spaces. Reading rooms house at least one physical copy of the book, and the rest are available at the main library building. Most materials are also accessible online - electronic copies are provided. Teaching materials (textbooks, books, periodical publications, databases), generally, are accessible.

The library is comfortable, easy to use and modern. There are independent work rooms, all rooms and conference halls have modern equipment. The library is open on work days until 9 p.m., on Saturdays – until 5 p.m., during examination sessions the Library working hours may be extended. Some reading rooms are available at all times.

The library collections contain about half a million items and provide access to 30 databases, in addition to other open access resources, is provided for staff and students. Following previous evaluation recommendation IEEE digital library license was procured.

Overall, the premises for studies, buildings, classrooms, laboratories, library and the teaching and learning equipment are adequate in terms of quantity, size and quality and provide satisfactory access to people with disabilities. For future development the University could consider establishing specialized new computer laboratories with cutting-edge equipment, for example virtual and augmented reality devices, 3D-printers, updated parallel computers (e.g. GPUs), high-quality eye-trackers to inspire and attract high calibre students. Such investments would help the University achieve a top evaluation score and a competitive edge in Lithuania.

2.5. Study process and students' performance assessment

Admission rules and procedures are well defined, explained and available on the VGTU website which serves as an informational portal and a guide for newcomers. The admission requirements are in compliance with the studies regulations of VGTU. The admission is carried out via the general admission. The general admission is organized and carried out by Lithuanian Higher Education Institutions Association for Organization of General Admission (LAMA BPO), authorized by the Ministry of Science and Education of the Republic of Lithuania. The application procedure is described in detail in the self-evaluation report. According to the SER the Study Programme attracts a satisfactory number of applicants. The number of applicants has been from 240-454 and the number of admitted students has been from 16 to 23 during the last years (in 2011-2015) [SER, table 6.2].

According to the opinions expressed by students, during their meeting with the Review Panel, the study process is well organized. Each semester students study 5-7 study subjects, the volume of which is from 3 to 6 ECTS credits, thus the workload for each semester is equally distributed and is 30 ECTS credits. The duration of one semester is 20 weeks. During the autumn semester, 15 weeks are intended for lectures, 1 week is intended for independent work, and 4 weeks are intended for examination session. During the spring semesters, either 12 or 15 weeks are intended for lectures, thus students get from 2 to 5 weeks when there are no lectures and students may concentrate on either practical training or the preparation of the final bachelor's thesis. Seven course projects and one complex project are planned in the study programme [SER, paragraphs 114, 115]. Information technology service management study programme provides students a possibility to choose the model of studies according to their needs. This may be implemented by a student by choosing study subjects from the list of alternatives and choosing the optional study subjects. There are 4

alternative options [SER, paragraphs 116]. Students told the Panel Team that their total workload is reasonable. The study process is supported by the virtual learning environment Moodle. Academic staff uploads the study subject modules materials (slide shows of the lectures, methodical materials, descriptions of the laboratory works) on the Moodle. The individual work of students is sufficiently mentored and the academic staff is always available for consultations according to the students' interviews. In general, students and alumni were overwhelming positive about their learning experience (teaching methods, learning activities, assessments) and support from staff. According to SER [paragraph 53] various methods are applied during the period of studies: demonstration, discussions, group work, seminars, analysis of practical examples, self-control tests, home works etc. The panel was also able to visit some classes in order to get a better view of the teaching and learning process; the impression was that mainly traditional teaching methods were used in the study process. The Panel got an impression that the responsibility of the curriculum design and the study process lies on the Study Programme Management Committee (SPMC) and the academic staff is not entirely involved in this process. Several teachers felt themselves as course providers or course deliverers and not active participants in the curriculum development process. **All teachers teaching in the programme should be more involved in the curriculum and study process design and development process in order to continuously improve teaching and learning quality.** In particular, it is important that all teachers involved in the programme collaborate to the programme's success: the programme should be more than the sum of its parts. Students also claim to know what is expected from them for each course, for each assessment, for the whole programme. Students confirmed that their opinions are taken into account according to their feedback in the development of the study programme. The Panel Team was shown several examples of Bachelor Thesis. The contents of these examples were often too descriptive and the presentation and referencing style of the Theses was not always appropriate. There was also quite limited use of information sources. At the same time the grades of those theses were relatively high (annex 9.3).

According to SER the students of Information Technology Service Management are invited to participate in VGTU artistic and applied scientific activities. They volunteer in conferences organized by VGTU Department of Information Technologies and FFS; also, they participate in individual and teams in Mathematics and Programming Olympics [paragraph 127]. However, students' participation in scientific, artistic or applied science activities was not confirmed by interviews. The Panel Team therefore recommend the university should encourage greater interactions between students and academics to support an increase in research or applied science activities. However, the lack of research activity by the staff themselves is an obvious obstacle here.

Students are provided with an opportunity to leave for studies abroad for the duration of one semester or for internship. VGTU has signed agreements for both teacher and students exchange under the ERASMUS programme. But during the period of 2011-2015 only one ITSM student left to study according to the programme. **Very low international mobility figures** among ITSM students are dictated by student reluctance to go to study abroad due to obligations they have in Lithuania or affections. However, after meeting with the students the Panel Team members noted that the students were not well informed about the student mobility programmes. The Panel Team would therefore recommend that programme teams promote the mobility opportunities more widely and take steps to encourage greater participation in mobility activities. This is especially important in the context of the academic staff being internationally isolated and could be achieved through advising of the benefits of the programmes and how the experience will help students' careers though the development of improved language skills, exposure to other societies and cultures and the enhancement of social skills.

According to the interviews with students and alumni the university ensures proper academic and social support and student support system is functioning well. Students are provided with all the needed information: they can obtain information about on-going processes in the university, about the study programme, career opportunities, cultural activities, etc. online (webpage, Moodle) or during various consultations. Such consultations are of various levels: consultations on study process organization and procedure, as well as consultations on individual study subjects (modules), consulting on issues related to research or final theses. During the first week in September, meetings with the Faculty dean, vice-deans, heads of departments, academic group supervisors, Students' Representation are organized. During the meetings, students are briefed on various studies related issues. On specific studies organization issues students are consulted by the head and teachers of the department, the dean of the faculty, vice-deans, administration, representatives of Students' Representation, who help solve problems [SER, paragraph 122]. VGTU Students' Representation and a separate FFS SR (voluntary, non-for-profit social organization) are providing social support to students. The Students' Representation provides students with all the relevant information of production of Lithuanian student's identity card, cultural activities, implementation of educational civil projects, international exchange programmes, etc. [SER, paragraph 125]. The students' academic and social activities were supported by the Library, Mentor Programme, Career Services, etc. The University also offers a wide range of activity groups. These activity groups include sports clubs and tourism club. There are also extracurricular options such as chorus, theatre, and dance. Currently, VGTU has more than 70 clubs and societies. University students and alumni can actualize their potential in folk dancing, choral singing, tourism, sports, photography and other

fields. Especially outstanding among arts groups are the mixed academic choir "Gabija" and the folk dance ensemble “Vingis”.

The system of assessing student achievements is clear, efficient and sufficient according to the student interviews. Students confirmed that they receive clear specifications, grading criteria and timely feedback. Students expressed no concerns regarding the fairness and accuracy of grading. The assessment procedure is fully described in SER [paragraphs 128-134]. Criteria for student achievement are announced at the beginning of the semester, and teachers introduce students to the assessment criteria during the first lessons. The university also organizes student feedback surveys and according to the students’ interviews the suggestions are taken into account in the study process or in the curriculum development. During the meetings with Faculty management and student representatives the Panel Team was provided with evidence on regularly gathered feedback. Students expressed their appreciation that the Dean office always responded quickly and took initiatives to implement changes.

There is a clear need for the Information Technology Service Management study programme. The programme corresponds to the state economic, social and future development needs as confirmed by employers, alumni, students and documents referred in SER. There is a high demand for highly qualified information technology specialists with the knowledge and skills in service management in the Lithuanian job market. According to the SER the Study Programme also attracts a high number of applicants and graduates find easily jobs in the companies before or after they complete their studies. The majority of Information Technology Service Management study programme students start working while being in the second/third year of studies, while 40% of the study programme graduates continue their studies in the second-cycle studies right after the graduation of the first-cycle programme [SER, paragraph 140].

According to the students’ opinion a fair learning environment is ensured and students are provided opportunities to make complaints and lodge appeals if necessary.

The Panel Team believe that professional activities and competencies of the majority of programme graduates correspond to the expectations of programme operators and local employers. The graduates easily find work in the local job market and several students of the study programme also have jobs during their studies. According to the interviews the local employers and social partners are satisfied with the graduates of the Information Technology Service Management Study Programme. But one could expect that one of the best universities in Lithuania, being able to attract good candidates, should offer the students a chance to progress beyond the minimal decent level

required by the curriculum. And this chance is missing, partially due to the lack of research activity of the staff themselves.

2.6. Programme management

Programme management and programme quality assurance responsibilities are shared by the Senate, Rectorate, Dean Office, Department and Study Programmes Committee[1] levels. The workflow attracting various stakeholders including alumni, students, teachers along with social partners are described in the SER (Section 7.1). The data provided by the University gives confidence that possibilities of local/minor improvements of the programme are assessed on a regular basis.

During the meetings with Faculty staff and student representatives the Review Panel were provided with evidences on regular – yearly – assessment of the programme quality and feedback gathered; also students confirmed on several occasions their appreciation of the Dean office on quick and effective measures changing teaching staff based on their feedback. The fact gives credit for Dean Office as being actively involved in programme management.

During the meeting with the teaching staff the Review Panel got an impression that the water-fall methodology is applied in assuring study programme quality. On several occasions teachers described that their contribution to changes in the study programme are limited only to the changes requested by Study Programmes Committee and only with respect to their teaching subject. This raises a serious concern about Study Programme committee not empowering or engaging with teachers with regards to overall study programme quality. The proposal would be to review study programme management process to engage teachers so that they contribute to study programme amendments and to ensure ideas of teachers input to other teachers' subjects are heard and evaluated as well.

It is worth mentioning that SER (sections 157-158) lists internal acts issued by the HEI to assure the quality of the study programme. However the Review Panel failed to find any evidence on actual study programme improvements resulted by study programme becoming compliant with these internal regulations or as an outcome of continuous study programme improvement process. The improvements listed in Table 7.9 highlights only changes embedded due to previous external

[1]The Review Panel were told that, while it follows from the University level regulations that there should be a Study Programme Committee formed for each study programme taught by any department, it was decided by the Department of Information Technologies to have just one joint committee for all the study programmes coordinated by the Department, with the Department head as the chair of this committee. This is, in our view, sensible way to manage quality of teaching in the situation where one department runs many study programmes.

assessment results. This raises a concern that internal study programme management process is not embedded or does not provide expected results. One might think this could be attributed to either indifference of HEI to the quality of study programme or process not functioning as described.

The overall perception of the Review Panel is that the management procedures are efficient enough to introduce small improvements of the study programme and to resolve the situations when some of the stakeholders (namely, students) express their dissatisfaction. **There is no mechanism however that could ensure quality in the situation when there is no stakeholder in place to demand quality. One example of a consequence of this shortcoming is a lack of research in Informatics, discussed earlier in this Report**

The information about the study programme is relevant to its content, accessible on the VGTU website in both Lithuanian and English. Results of the study programme are valued in the Lithuanian labour market by many business stakeholders. Stakeholders on several occasions explained their contribution in shaping study programme content. This gives confidence that HEI liaisons with business stakeholders and works to ensure labour market needs.

III. RECOMMENDATIONS

1. The construction with two separate study programmes (EI and ITSM) having 85% overlap should be reconsidered. It is unclear to the Review Panel how the University can justify naming these two provisions as separate programmes when there is this much overlap. An alternative, and perhaps less misleading organization, would be to offer one programme with 15% of elective specialisation courses.

2. If the mission of VGTU, as an institution where international level research is conducted, is to be fulfilled, the teaching load of the staff needs to be reduced. There is no objective reason for the staff members to teach for 10 hours a week, or more, in an institution which teaches 10 students per each teacher.

3. The University should encourage the staff to publish more in international venues of high impact and reputation.

4. The University could consider investing in specialized new computer laboratories with cutting-edge equipment to inspire and attract high calibre students and to maintain a competitive edge in Lithuania.

5. Best and most interested students should be given an opportunity to progress beyond the lines defined by the curriculum. The most talented and interested should have a chance to take part in real research.

6. Erasmus mobility of students should be promoted. The current level of students' mobility is unacceptable, especially in the situation where also the academic staff is internationally self-isolated.

7. All teachers teaching in the programme should be more involved in the curriculum and study process design and development process in order to continuously improve teaching and learning quality.

IV. SUMMARY

The objective of the Information Technology Service Management bachelor level study programme offered by Department of Information Technology, Faculty of Fundamental Sciences, VGTU is "to train well-qualified IT specialists able to design, build, maintain and run organisational IT infrastructure and services". The content of the subjects follow international conventions for informatics and computer science bachelor programmes. The learning outcomes which are formulated in a focused manner map quite clearly to the courses and the content of the courses are typical for what to expect at first cycle within informatics. In fact, the four-year curriculum comes across as strong compared to many three year bachelor programmes found in many other countries.

A large proportion of the teaching staff holds a Ph.D. The percentage is much higher than the minimum requirement and is likely to ensure that the Study Programme is taught according to high academic standards. The staff is also actively publishing research relevant to the study programme. However, a majority of the publications appear in lesser-known national venues with limited visibility and impact. Also, there appears to be an imbalance with too little technology oriented research compared to management-related research.

The programme attracts many applicants. Most graduates find relevant employment before or after they complete their studies and, as the Review Panel learned from the social partners, the local industry is happy with them. This success demonstrates that the programme aims and intended learning outcomes are linked to state, societal and labour market needs. The curriculum is correct, there are no obvious shortcomings regarding the study process. The level of the bachelor theses, while not really impressive, is acceptable. The facilities and learning resources support the learning outcomes adequately.

Concerning the programme management, it was decided by the Department of Information Technologies to have just one joint committee for all the study programmes coordinated by the Department, with the Department head as the chair of this committee. This is, in the Review Panel's view, a sensible way to manage quality of teaching in the situation where one department runs many study programmes. The management procedures are efficient enough to introduce local improvements of the study programme and to resolve the situations when some of the stakeholders (namely, students) express their dissatisfaction.

Overall, the programme does decent job preparing workforce for the local job market. But it attracts good candidates, who could possibly achieve more than that. And their talents seem to be wasted, at least to some extent.

V. GENERAL ASSESSMENT

The study programme *Information Technology Service Management* (state code – 612I13001) at Vilnius Gediminas Technical University is given **positive** evaluation.

Study programme assessment in points by evaluation areas.

No.	Evaluation Area	Evaluation of an area in points*
1.	Programme aims and learning outcomes	3
2.	Curriculum design	2
3.	Teaching staff	2
4.	Facilities and learning resources	3
5.	Study process and students' performance assessment	2
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:	Jerzy Marcinkowski
Grupės nariai: Team members:	Sirje Virkus
	Frode Eika Sandnes
	Radvilė Krušinskienė
	Mantas Jurgelaitis

VILNIAUS GEDIMINO TECHNIKOS UNIVERSITETO PIRMOSIOS PAKOPOS STUDIJŲ PROGRAMOS *INFORMACINIŲ TECHNOLOGIJŲ PASLAUGŲ VALDYMAS* (VALSTYBINIS KODAS – 612I13001) 2018-10-26 EKSPERTINIO VERTINIMO IŠVADŲ NR. SV4-8 IŠRAŠAS

<...>

V. APIBENDRINAMASIS ĮVERTINIMAS

Vilniaus Gedimino technikos universiteto studijų programa *Informacinių technologijų paslaugų valdymas* (valstybinis kodas – 612I13001) 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	3
5.	Studijų eiga ir jos vertinimas	2
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)

<...>

IV. SANTRAUKA

VGTU Fundamentinių mokslų fakulteto Informacinių technologijų katedros siūlomos bakalauro studijų programos Informacinių technologijų paslaugų valdymas tikslas – „paruošti aukštos kvalifikacijos informacinių technologijų (toliau – IT) specialistus, gebančius projektuoti, kurti, prižiūrėti bei eksploatuoti organizacijos IT infrastruktūrą ir paslaugas“. Dalykų turinys atitinka tarptautines informatikos ir kompiuterių mokslų bakalauro studijų programų konvencijas. Studijų rezultatai, kurie yra tiksliai suformuluoti, pakankamai aiškiai susieti su dalykais ir kursų turiniu, kuris yra tipiškas ir toks, kokio galima tikėtis pirmosios pakopos informatikos srityje. Iš tiesų, ketverių metų studijų programa yra tokia pat stipri kaip ir daugelis trejų metų bakalauro studijų programų kitose šalyse.

Ši studijų programa pritraukia daug stojančiųjų. Dauguma absolventų randa tinkamą darbą dar iki

studijų pabaigos arba jas baigę, ir, kaip ekspertų grupė sužinojo iš socialinių partnerių, vietos pramonė yra jais patenkinta. Ši sėkmė rodo, kad studijų programos tikslai ir numatomi studijų rezultatai atitinka valstybės, visuomenės ir darbo rinkos poreikius. Studijų turinys yra tinkamas, akivaizdžių studijų eigos trūkumų nėra. Bakalauro baigiamųjų darbų lygis yra priimtinas, nors ir nelabai įspūdingas. Universiteto patalpos yra vienos geriausių Lietuvoje.

Dėl studijų programos vadybos Informacinių technologijų katedra nusprendė, kad pakanka vieno jungtinio komiteto visoms studijų programoms, kurias koordinuoja pati katedra, o katedros vedėjas yra šio komiteto pirmininkas. Ekspertų grupės nuomone, tai pakankamai protingas būdas valdyti dėstymo kokybę, kuomet viena katedra vykdo tiek daug studijų programų. Vadybos procedūros yra pakankamai veiksmingos studijų programos tobulinimams užtikrinti vietoje ir spręsti situacijas, kai dalininkai (t. y. studentai) išreiškia savo nepasitenkinimą.

Vis dėlto būtų galima tikėtis daug daugiau iš tokios studijų programos, kuri pritraukia labai gerus kandidatus į vieną iš pirmaujančių Lietuvos universitetų, kurio misija – „prestižinė Lietuvos aukštoji mokykla, kurios mokslo ir studijų lygis atitinka geriausių Europos technikos universitetų lygį“. Tačiau nėra sukurto mechanizmo, kuris galėtų garantuoti kokybę, jei nėra dalininko, reikalaujančio kokybės. Studijų programos dėstytojai nedalyvauja moksliniuose informatikos ir (arba) kompiuterijos mokslų tyrimuose, o tarptautiniu mastu yra izoliuoti. Tokia situacija nepagerės, jei toliau bus taikoma universiteto nustatyta klaidinga skatinimo sistema: dėstytojams atlyginama už tai, kad skelbiasi vietinės reikšmės vietose, kurios tarptautinės perspektyvos atžvilgiu nėra tikrosios platformos keistis mokslinėmis idėjomis. Todėl universitetas negali pasiūlyti studentams nieko daugiau, kas būtų už studijų programos nustatyto lygio ribos, ir geriausi studentai neturi realios galimybės išnaudoti savo potencialą. Dėl akademinio personalo tarptautinės izoliacijos studentų judumas turėtų būti ypač svarbus, nes suteiktų jiems galimybę susipažinti su universitetais, kuriuose vykdomi moksliniai tyrimai. Deja, toks judumas beveik nevyksta.

Apskritai, ši studijų programa tinkamai parengia darbo jėgą vietos darbo rinkai. Ji pritraukia gerų kandidatų, kurie galėtų pasiekti žymiai daugiau. Atrodo, kad jų talentai yra švaistomi, bent jau tam tikru mastu.

III. REKOMENDACIJOS

1. Būtina apsvarstyti dviejų atskirų studijų programų (Inžinerinės informatikos ir Informacinių technologijų paslaugų valdymo (ITPV)) sandarą, nes 85 proc. jų turinio persidengia. Ekspertų grupei neaišku, kaip universitetui pavyko pagrįsti šių dviejų atskirų studijų programų pavadinimus, kuomet tiek daug turinio kartojasi. Mažiau klaidinanti alternatyva būtų siūlyti vieną studijų programą, kurioje 15 proc. sudarytų pasirenkamieji specializacijos dalykai.
2. Jei VGTU kaip institucija, atliekanti tarptautinio lygio mokslinius tyrimus, norėtų įgyvendinti savo misiją, būtina mažinti personalo darbo krūvį. Nėra jokios objektyvios priežasties dėstytojams dėstyti po 10 valandų per savaitę arba net daugiau institucijoje, kurioje kiekvienam dėstytojui tenka 10 studentų.
3. Reikia iš naujo apsvarstyti VGTU dėstytojų mokslinių tyrimų veiklos vertinimo sistemą. Reikėtų numatyti tinkamas paskatas, kurios skatintų vykdyti vertingus mokslinius tyrimus ir vertinti ne straipsnių skaičių, o jų kokybę. Niekam neturėtų būti atlyginta už tai, kad publikuoja straipsnius žurnaluose, kurie prisideda tik prie VGTU tarptautinės izoliacijos, į tą skaičių patenka ir bendrai su universitetu leidžiami žurnalai. Reikia suprasti, kad kai kuriose srityse, tarp jų kompiuterijos mokslų ir (arba) informatikos, „cituojamumo rodiklis“ ne visada įrodo aukštą kokybę.
4. Geriausiems ir labiausiai besidomintiems studentams reikėtų suteikti galimybę tobulėti plačiau, nei studijų turinio apibrėžta apimtimi. Talentingiausiems ir labiausiai suinteresuotiems studentams reikėtų suteikti galimybę dalyvauti realiuose moksliniuose tyrimuose.
5. Skatinti studentų judumą pagal programą „Erasmus“. Dabartinis studentų judumo lygis yra nepriimtinas, ypač tokiu atveju, kuomet akademinis personalas pats save izoliavo tarptautiniu mastu.
6. Visi studijų programą vykdantys dėstytojai turėtų aktyviau dalyvauti studijų turinio ir studijų eigos sudarymo bei plėtros procese, siekiant užtikrinti nuolatinį mokymo ir mokymosi kokybės gerinimą.

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)