STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

Lietuvos edukologijos universiteto
**STUDIJŲ PROGRAMOS „ INFORMATIKOS" (*valstybinis kodas –
621I10004*)
VERTINIMO IŠVADOS**

—————————————————————————

**EVALUATION REPORT
OF *"INFORMATICS"* (*state code - 621I10004*)
STUDY PROGRAMME**
at Lithuanian University of Educational Sciences

Review team:

1.   **Prof. Jerzy Marcinkowski (team leader),** *academic,*

1.   **Prof. Sirje Virkus,** *academic,*

2.   **Prof. Frode Eika Sandnes,** *academic,*

3.   **Mrs Radvilė Krušinskienė,** *social partner,*

4.   **Mr Mantas Jurgelaitis,** *student's representative.*

Evaluation coordinator -

Mrs Ieva Batėnaitė

Išvados parengtos anglų kalba
Report language – English

Vilnius
2017

Studijų programos pavadinimas	**Informatika**
Valstybinis kodas	621I10004
Studijų sritis	Fiziniai mokslai
Studijų kryptis	Informatika
Studijų programos rūšis	Universitetinės studijos
Studijų pakopa	Antroji
Studijų forma (trukmė metais)	Nuolatinė, 2 metai
Studijų programos apimtis kreditais	120 ECTS
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Informatikos magistras
Studijų programos įregistravimo data	2010 08 26 Nr.1-01-89

_____

INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	**Informatics**
State code	621I10004
Study area	Physical sciences
Study field	Informatics
Type of the study programme	University studies
Study cycle	Second
Study mode (length in years)	Full-time (2 years)
Volume of the study programme in credits	120 ECTS
Degree and (or) professional qualifications awarded	Master of Informatics
Date of registration of the study programme	26th August, 2010 Order No 1-01-89

CONTENTS

Studijų kokybės vertinimo centras

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 Master's graduation work / thesis of the second-cycle study*
2.	*Updated list of staff*

Studijų kokybės vertinimo centras

1.3. The Review Panel

The Review Panel was completed according to *Description of experts' 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 4th 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,

1.4. Basis for the evaluation

The basis for the evaluation of the 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 Lithuanian University of Educational Sciences (hereafter, referred to as the LEU) on May 4th, 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.

Studijų kokybės vertinimo centras

An important remark. During our site visit to LEU the Review Panel learned about several important discrepancies between facts presented in the SER and Annexes, and the on-site observations. In particular Review Panel learned that:

1. One of the teachers mentioned in the SER (both in Annex 2 and in Annex 3) has left this University more than 6 years ago and has not been teaching there since then. This is particularly important, as this professor has a publication record which is significantly more extensive than any of the other teaching staff members. Since there are only 14 teaching staff members listed in the SER, and the document is relatively compact and clear, the Review Panel finds it unlikely that such a severe discrepancy could be attributed to an editorial mistake.

2. The study plan, as presented in SER, does not reflect reality in several ways:

First, the study plan describes a four-semester programme, divided into subjects taught in the natural order (1st semester first, then second and so on). In reality, only half of the subjects are being taught each year. Consequently, half of the students (each other year) begin their programme from 3rd and 4th semesters and only during their second year of studies attend subjects assigned for 1st and 2nd semesters. The Review Panel was unable to learn about this organization from the documentation provided by the University. A severe consequence of this lack of proper documentation is that students who enrol onto the programme are not informed about this important organizational detail in any formal way. During the interviews the University staff brushed this off as unproblematic since this was common knowledge among their own students, and that this information was passed around effectively by word-of-mouth. The Review Panel deem this practice unsatisfactory as students need to be properly and systematically informed about all aspects of the organization of the studies before enrolling into the University.

Second, information about the length of the semesters provided in SER is misleading. It is stated in the SER that each semester lasts 20 weeks. This, as the Review Panel understood, contains 16 weeks of teaching and 4 weeks for the final exams. However, as uncovered during the site visit, the summer semester is in fact shorter, with only 12 weeks of teaching. In fact, signs of this can also be seen in the course descriptions as all study subjects scheduled for Semester 2 and 4 consist of 24 or 12 lectures). The remaining time is solely devoted to students' own work on their master's theses. This could make sense in the case of 4th semester students, but since the students of the first and the second year study together; such an organization of studies has implications for the study process of the first year students. In any case the documentation should have clearly communicated these important details.

Studijų kokybės vertinimo centras

Third, the study plan contains subjects which, as Review Panel learned, have never been taught, for example JAVA Programming Methods. The teaching staff indicated that this course will only be taught in the summer semester of 2017/18. Again, the University should of course change the study plan according to the current needs, but the SER should present current practice and the study plan currently in place as it is not possible for the Review Panel to evaluate courses that have not yet been taught.

3. Finally, according to section 29 of the SER the University has international research collaborations in the area of "Optimal Solutions and Multiprocessor Computing", and many good (and some very good) European university CS departments are mentioned, including University of Lille (France), Dusseldorf University (Germany), Maastricht University (Netherlands), Warsaw University and Wrocław University (Poland), and Stockholm University (Sweden). If true, this would constitute an impressive international collaboration. However, one member of the Review Panel members happens to be the head of the CS Department at Wrocław University and he should be well-informed about the collaborations. Yet, nobody is doing multiprocessor computing in the CS Department of Wrocław, and there is no knowledge of such collaboration. The Review Panel asked the administrative staff of the faculty for more information about collaboration. This information was never provided.

The type of evaluation carried out by the Review Panel on behalf of SKVC relies on trust. It is not the job of the Review Panel to determine if the information provided is true or false. The results of the evaluation can only be as reliable as the information provided in the SER. The Review Panel regrets that the SER presented by the University could not be seen as a reliable basis for a sound evaluation. The inability of the University to produce a reliable SER reveals a critical managerial flaw.

Most of the findings presented herein rely on the assumption that, apart from the ones mentioned above, there are no further key discrepancies between the documentation and the actual practices of the University. However, taking into consideration the wide scope and severity of these discrepancies, the Review Panel has no rational reason to believe in this assumption.

II. PROGRAMME ANALYSIS

2.1. Programme aims and learning outcomes

The programme objectives are defined as: "Informatics is to train qualified future researchers, teachers of informatics-related study subjects, specialists in informatics, who are able to respond to rapid technological changes and relevant contemporary problems, to independently conduct analytical-applied research, to design and develop software, to supervise groups of its development as well as to manage information technology divisions in institutions". In short the purpose of the Study Programme is to train general specialists in informatics that are able to work with all phases or the software lifecycle. Such goal clearly corresponds to the state, societal and labour market needs.

Moreover, there is also an element of teacher training in the aims, namely "to train … teachers of informatics-related study subjects". Hence, the Study Programme has a unique profile in the Lithuanian higher education landscape and can be seen as corresponding to the mission of LEU.

During the site visit the different groups interviewed appeared to have different opinions about the importance of this educational component. The management and administrative staff placed little importance on the educational element, while the staff responsible for preparing the SER emphasized that the University has an educational and teacher training profile and that this is represented in the learning outcomes and curriculum. The aims are thus quite ambitious given the scope of the programme as it seems a tall order to produce graduates who can both fulfil the roles of IT-teachers and IT-specialists within the same Study Programme. One could argue that the University would benefit from pursuing one of these directions in depth instead of making a shallow hybrid mixture, that is, either educate highly qualified IT-specialists, or offer a unique study programme completely dedicated to IT-teacher training.

The learning outcomes can be viewed as statements that allow students, employers, other HEIs and other stakeholders get a clear understanding of what the Study Programme entails. However, some of the learning outcomes appear too generic and too close to the generic learning outcomes for the second cycle. For example, learning outcome 1.2 reads "A graduate has the ability to apply the obtained knowledge formulating, analysing and solving problems of various areas of informatics in a new or unfamiliar environment, conducting scientific research and fostering innovations and, thus, contributing to further development of informatics". This formulation does not answer the questions to what the "obtained knowledge" is, and, what the "various areas of informatics" are. Moreover, it

Studijų kokybės vertinimo centras

is unclear what "to further development of informatics" actually entail. Is it the development of local companies IT-systems, or the informatics research field. Informatics is a large field and the learning outcomes should reflect the local angle and specialisation within the large area of informatics that are taught in this Study Programme. Examples of various angles include enterprise system development, embedded development, mobile development, scientific computing, user centric systems, etc. A master specialisation in informatics should cover a few such areas, but it is unrealistic to cover all such areas. It should be clear from the learning outcomes what type of informatics specialists the graduates become.

Moreover, learning outcome 1.1 read "A graduate will acquire knowledge of fundamental subjects of informatics and most progressive information technologies that is necessary for second cycle studies" is only making a reference to second cycle without explaining what it means. Most readers will not be familiar with the general second cycle descriptors and such references are thus not very helpful. Also there are a number of ways to satisfy the learning outcome requirements for second cycle studies, but without explicitly describing how this is done, the statement appears uncommitted. According to the staff responsible for preparing the SER this learning outcome is meant to give students the necessary knowledge to study at the master programme, that is "that is necessary for second cycle studies". If this is so the learning outcome is actually specifying bachelor level contents and indicates that students do not have the prerequisites to be admitted to a master programme in informatics.

Information about the study programme is available on the University website (https://leu.lt/lt/gmtf/gmtf_priemimas/gmtf__studiju_programos/programs/100436/1.html).   The programme is presented through the various courses and seemingly not according to learning outcomes.

There is a high demand for informatics specialists in the Lithuanian job market as well as in the global job market. The Study Programme in Informatics therefore meets a demand in society and statistics referred to in the SER demonstrates high employment rates among graduates. Furthermore, in addition to be a general informatics programme the Informatics Study Programme also fills a niche market of informatics specialists that are employed in the education system as educators and teachers at various levels from primary school up to university. This is captures in learning outcome 3.3, namely "A graduate is able to convey the obtained knowledge to learners designing and implementing contemporary technology-based studies".

The programme objectives and intended learning outcomes corresponds well with related master-level informatics study programmes internationally. The learning outcomes correspond satisfactory to the general descriptors for second cycle studies with more focus on updated knowledge in

Studijų kokybės vertinimo centras

informatics and independent problem solving than what is expected from first cycle studies. Moreover, the learning objectives also include academic requirements in addition to professional software development requirement, namely graduates ability plan and carry out research and their ability to disseminate information to relevant groups.

The Study Programme title, Informatics, is general and highly suitable and descriptive for this type of study. This title is highly consistent with the learning outcomes and the contents. Although the title is general and generic, the content is updated and current. This is demonstrated though courses such as Cloud Computing, Big Data Mining, Information Security and Human and Computer Interaction which reflects recent technological paradigms and practices in the area of informatics.

2.2. Curriculum design

The Study Programme is in pursuance with relevant legal acts and regulations; it has been carried out in accordance with the LEU academic regulations and the established quality assurance system of the study programmes in LEU. It has been informed by the requirements of the labour market and general legislative and guiding documents for higher education and research in Lithuania.

The Study Programme comprises 120 ECTS credits distributed over the two year duration of the Study Programme. The courses are spread evenly across the semesters (e.g. each semester has 30 credits) and their content is consistent with the type and level of studies. However, the Panel was confused to be told that spring semesters of the study programme are four weeks shorter than autumn semesters, contrary to SER which describes them as being of equal length (SER, Table 3). The legal minimum limit of 30 ECTS for the final thesis is met. However, the panel hesitates if the organization of the master thesis in the study programme (semester 2 and 4), being a consequence of a design decision driven by purely economic motivations (i.e. teaching the same subjects to both 1st year and 2nd year students at the same time) is entirely reasonable.

The courses are relevant to Informatics master studies and the curriculum follows established international education standards for informatics studies. There are no subjects or topics that are obviously repeated. The students are also given chances to select elective courses during their studies (e.g. Internet Technologies, Cloud Computing, Big Data Mining, JAVA Programming Methods). The content of the subjects corresponds to the type and cycle of studies. The Panel were of the opinion that the Study Programme provides enough opportunities for practical work. This was confirmed by the students themselves. However, the Panel got an impression that the curriculum described in the SER is not entirely taught at the moment and not all curriculum changes have yet been implemented.

Studijų kokybės vertinimo centras

The scope of the programme and the majority of the courses in the curriculum are relevant, suitable and sufficient to achieve the learning outcomes. However, some of the courses have literature, which is more than 10 years old and therefore does not reflect that the content of the programme corresponds to the latest academic, artistic or technological achievements. For example, Software Engineering, the main literature dates back to 1996 and 1998 (A. Čaplinskas. Programų sistemų inžinerijos pagrindai I. Matematikos ir informatikos institutas. 1996; A. Čaplinskas. Programų sistemų inžinerijos pagrindai II. Matematikos ir informatikos institutas. 1998) and Internet Technologies, the main literature dates back to 2007 and 2011 (Whitehead, Paul HTML vaizdžiai :[vaizdinė priemonė, padėsianti išmokti kurti savas svetaines panaudojant HTML, pakopinius stilius ir XHTML], 2007; MacCaw A. JavaScript Web Applications JAV: O'Reilly Media, Inc 2011; Boudreaux T. PHP 5 vaizdžiai, Kaunas: Smaltija, 2007). It would be highly desirable to expect most recent and up-to-date literature in such a rapidly developing technological field.

According to the SER (Table 1), the students develop the research skills in a number of courses and projects (e.g. Mathematical Models and Algorithm, Complexity Theory, Artificial Intelligence, Statistical Data Processing, Scientific Research Methods, Big Data Mining, Master's Thesis Project, Scientific-Research Practice, Master's Thesis). Intended learning outcome 2.1 describes: "A graduate has the ability to plan and carry out scientific research work analysing, synthesising and assessing research data necessary for studies, scientific and professional activity and innovation development, choosing appropriate research methods and tools" [see SER, Table 1]. The same learning outcome appears also in the descriptions of study subjects [see SER, Annex 1]. However, the quality of Master Theses presented to the Panel Team was not very high. The contents of these example Theses were often descriptive and failed to show an evidence of higher-order competencies such as analysis, integration of principles, critical comparisons, synthesis etc. At the same time the grades of these theses were relatively high, mostly 9, 10 and some 8 (see Annex 4). Therefore, the Panel Team suggests that the Faculty should revise the curriculum to ensure that students are well trained and supported in the use of scientific research strategies and methods and that research skills development in different subjects is well integrated and coherent.

The students and alumni present at the meetings were very positive regarding the quality of teaching and its efficacy (teaching methods, learning activities, assessments, support from teachers and supervisors). The Panel Team appreciates the fact that teachers use interactive rather than purely transferable methods in their teaching process and that group work is encouraged. Therefore on the basis of interviews the Panel Team believes that study methods were appropriate and enable to achieve the intended learning outcomes. However, the Panel Team got an impression that the

Studijų kokybės vertinimo centras

responsibility of the curriculum design and the study process lies on the Study Programme Committee (SPC) and the academic staff is not entirely involved in this process. All teachers involved 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.

In summary, the name of the Study Programme, its intended programme and courses learning outcomes, content, and qualifications offered are altogether compatible with each other. The evidence from the students, alumni and staff meetings together with the internal self-assessment report indicates that the degree objectives are achieved. The meetings with students revealed the positive value of the curriculum updates introduced. The suggestions of the previous accreditation in 2013 have been implemented as appropriate.

2.3. Teaching staff

According to Annex 2 to the SER, the teaching staff of the programme consists of 14 teachers. This was revised by the University during our site visit, and now the number is said to be 13. Six of the teachers are full-time employees of Lithuanian Educational University and seven works part-time.
Again according to Annex 2, and according to additional information the Review Panel received during the site visit, with one exception all of the teachers of the programme under assessment hold PhD degrees, so the statutory condition that "more than half of the teaching staff of a university must be scientists" is easily / obviously satisfied, at least in the formal sense. While six part-time teachers hold PhD degrees in informatics (and one in mathematics), there is only one with a PhD in informatics among the full-time staff (two in mathematics and two in social sciences). This appears low in order to offer a research oriented high quality master level Informatics degree.

According to Annex 3 to the SER the teaching staff turnover is low – vast majority of staff has been working for LEU for at least a decade.

The average age of the teachers is about 46, which seems to be close to the Lithuanian academic system average, but is much compared to the international standards. The average age of the full-time staff is 52 years, and this is becoming to be an issue. For example, the teacher who is supposed to teach the new course JAVA Programming Methods in 2018 will be 70 years old at that time.

As there are only 7 students all together studying at the Study Programme, the students/teachers ratio is below 1.

Studijų kokybės vertinimo centras

Concerning the research activity of the staff, there is only one person among the full-time staff who can be classified as active, yet only publishes in local venues that are invisible to the international research community. This is understandable since, as were told, the teaching load of the full-time staff is very high. In fact, the teaching load is so high that the Review Panel concludes that the assessment criterion that the University "creates conditions for the professional development of the staff" is not satisfied.

Comparatively, the part-time staff is more active and some of them have papers published in quality international venues (ranked by CORE as "B"). Taking this all into account the Review Panel conclude that the criterion that "the teaching staff of the programme is involved in research directly related to the study programme" is satisfied, but that this can only be attributed to the part-time staff. Since the full-time staff appears unqualified to teach a master level curriculum in informatics, and since it is hard to determine how much time the part-time staff is able to devote to the programme, it is challenging for the Review Panel to assess whether the criterion that "the qualifications of the teaching staff are adequate to ensure learning outcomes" is satisfied or not. For example, it is a matter of concern that the important subject Scientific-Research Practice is taught by a full-time teacher who has never practiced as an active researcher, and has no PhD degree in informatics.

2.4. Facilities and learning resources

Not much room is needed to teach a programme with seven students enrolled, and clearly the classrooms and other premises the HEI has at its disposal are sufficient. The same can be said about the multimedia and computer equipment.

The library is preparing for relocation and at the time of the visit was very limited. Access to numerous global e-libraries is available for the students. But unfortunately not all books needed for a study programme in Informatics are available in the library. The Review Team randomly selected some books recommended in the curriculum subject descriptions and not all of them could be found in the library catalogue. Moreover, some really basic computer science books, by authors like Lamport, Kernighan, Cormen, were also missing.

The arrangements of the students' practical and laboratory equipment (computers, software tools) are generally adequate for the programme aims, though it is worth mentioning that the software list does not reflect latest IT technology trends towards Platform as a Service (PaaS) or Software as a Service (SaaS) utilization. The Review Panel also believe that the Department could consider

providing students with software licenses for basic use on personal computers, as of now neither the students nor staff are provided with academic licenses. Also expanding wireless infrastructure making internet more widely accessible in the premises would be welcome.

2.5. Study process and students' performance assessment

Admission rules and procedures are well defined and published on the University website. They are in compliance with the requirements of the University and of the latest resolutions of the Government and the Rectors' Conference. However, the number of state-funded places is decreasing. This is attributed by the University to the government policy: educational sciences and teacher training are not a government priority area. Due to a small number of state-funded places, Bachelors with very high admission points enter the Informatics Master Programme according to the SER [see Table 6, paragraph 49]. Entrants to the programme are mostly Bachelor graduates of the same University. In order to address the declining numbers of students (currently seven students in total) the Review Panel would recommend structured plans with key interventions should be put in place.

According to the opinions the Review Panel heard from the students, the study process and examinations are organized reasonably well. Lectures are scheduled in a convenient way for Master's students, taking into account that the majority of them are working. All lectures at LEU start from 5.40 pm. According to the SER [Table 3, paragraphs 51, 52] lectures form 20%, seminars, practical work and consultations 15% and independent work 65% of the study programme. The interviewed students felt that generally adequate share of the programme is dedicated for both theoretical and practical studies. The study process is facilitated by regular consultations of teachers and the virtual learning environment Moodle, where students may find not only learning materials, but also do tests for self-control and get consultations from teachers. The individual work of students is sufficiently mentored and the academic staff is always available for consultations according to the students' interviews. The very small number of students currently in the study programme (there are just total of 7 students right now) making it easy to maintain a very close contact between students and teachers, who are able to provide almost individualized feedback. The students and alumni that were present at the meetings were very positive regarding the quality of teaching and its efficacy (teaching methods, learning activities, assessments, support from teachers and supervisors). The Review Panel appreciates the fact that teachers use interactive rather than purely transferable methods in their teaching process and that group work is encouraged. However, the Review Panel got an impression that the responsibility of the curriculum design and the study process lies on the Study Programme Committee (SPC) and the academic staff is not entirely

Studijų kokybės vertinimo centras

involved in this process. All teachers involved 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, including a change management process to ensure all staff understand the need for improvement. 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. However, the teachers' working load is 15-20 hours per week that is quite high if the study programme intends to be truly research-based. Care will then have to be taken to maintain a good balance between teaching and research priorities among the teaching staff. Students also claim to know what is expected from them for each course, for each assessment, for the whole programme. Students have the possibility to retake exams in the case of failure or non-attendance. Students confirmed that their opinions are taken into account in the development of the programme. The Review Panel was told about the friendly and supportive atmosphere and good teachers-students relations. They reported good relations with the faculty for getting professional and academic advice also after graduation. Students told the Review Panel that their total workload is reasonable. **The Review Panel was shown several examples of Master's theses. The contents of these examples were often descriptive and failed to show an evidence of higher-order competencies such as analysis, integration of principles, critical comparisons, synthesis etc. At the same time the grades of these thesis are relatively high - mostly 9, 10 and some 8 (annex 4). The Review Panel also questions if the organization of the master thesis in the study programme (semester 2 and 4) is reasonable.**

But, despite all the positives elements mentioned, there is also one very serious flaw in the study process, namely that there are only 7 students. Contrary to what one could think this is not only an economical issue. The University is about meeting other people, about teaching each other, learning from each other and inspiring each other. These are opportunities that students of this programme are missing. The principles of socio-cultural learning and study environment should be well-known to an education University. There are also implications for the learning outcomes of the programme, which include social skills, such as "the ability to communicate summarized clear and reasoned information on various issues related to informatics and information technologies orally (...) to colleagues (...)" and the ability "to assume responsibility working individually or in a team, distributing assignments and responsibilities". All these outcomes are very challenging to achieve with a study programme with only seven students.

Unfortunately, there are a number of inconsistencies between the SER and information obtained during the site visit. For example, the Review Panel was told that the spring semesters only last

twelve weeks instead of being sixteen weeks long as stated in the SER. Moreover, the Review Panel was unable to visit any classes in order to get a better view of the teaching and learning process.

LEU has a range of mobility opportunities (ERASMUS). Regrettably, the Master students of Informatics do not participate in mobility activities. After meeting with the students the Review Panel members noted that the students were not well-informed about the student mobility programmes. The Review Panel would therefore recommend that programme teams promote the mobility opportunities more widely and take steps to encourage greater participation in mobility activities. This 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. For example, individual study plans are provided for students [see SER, paragraph 62]. 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, sent individually by e-mail and via social media (Facebook). Students and alumni were very satisfied with the friendly academic atmosphere and teacher-student relations in the university and mentioned the professional links that lasted well after the graduation of the university. The students' academic and social activities were supported by the Library, Publishing House, Language Centre, Culture Centre and Careers Centre. For example, the Culture Centre of the University cooperates with other institutions and organizes concerts, exhibitions and other important cultural events on national and international levels. Students from various faculties make up choirs and ensembles of various genres: Mixed choir "Ave vita"; Song and dance ensemble "Šviesa"; Chamber ensemble "Credo"; Folklore ensemble "Poringė"; Drama studio, etc.

During the visit, students confirmed that the assessment system of students' performance is clear and adequate. Students expressed no concerns regarding the fairness and accuracy of grading. Students were satisfied with the feedback they receive from teachers and supervisors about assessment. The assessment criteria are approved by the Senate and are described in the descriptions of study subjects [see SER, Annex 1] employing the principle of cumulative grade. 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 Faculty also organizes student feedback surveys. Students indicated that in addition to the formal feedback procedures, teachers ask for feedback and are responsive to the comments by the students. They have made several proposals for the curriculum change (e.g. Java programming).

Studijų kokybės vertinimo centras

The Review Panel believes that professional activities and competencies of the majority of programme graduates correspond to the expectations of programme operators and employers. Students are generally confident about their employment perspectives. The graduates find easily work in the job market; they are working both in the IT firms as well as educational institutions (e.g. five of the graduates of LEU Informatics master programme work as teachers in the Vilnius Business College). They are appreciated by the employers (according to the alumni and employers' representatives) and several of them continue their studies at PhD level. Students of the study programme also have jobs during their studies.

It is obvious that master studies in the field of Informatics in LEU are in a considerable demand. There is a high demand for highly qualified informatics specialists in the Lithuanian and global job market. Therefore, the Informatics study programme corresponds to the state economic, social and cultural and future development needs. Statistics referred to in the SER [paragraph 12] also demonstrate high employment rates among graduates. In addition the Informatics Study Programme also prepares informatics specialists that are employed as educators at various levels of educational system from primary school up to university.

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

2.6. Programme management

The quality of programme management was evaluated in view of the following criteria:

(a) responsibilities for decisions and monitoring of the implementation of the programme should be clearly allocated;

(b) data and other information regarding programme implementation should be collected and analysed periodically;

(c) the outcomes of internal and external evaluations of the programme should be used for the improvement of the programme;

(d) the evaluation and improvement processes should involve stakeholders;

(e) the internal quality assurance measures should be effective and efficient;

(f) the information about the study programme should be public, relevant and easily accessible.

(a) From the information provided in the SER (see Sections 73 to 79) one gets the impression that responsibilities for decisions and monitoring of the implementation of the programme are clearly distributed between university, faculty and department levels, many responsibilities being on the faculty dean. A complicated scheme is included in the SER, which seems to indicate what actors are being involved in the decision-making process and who reports to whom.

However, during the meeting with faculty administration (including the dean) the Review Panel realized that the dean office is not deeply involved in programme management, as the attendees were not able to mention at least one recent amendment to the study programme (either the curriculum or management) introduced or initiated by administration of the faculty and were hardly able to answer questions regarding the programme. This makes the Review Panel to assert that there are large discrepancies between the written description of the programme management and the actual programme management practices.

Another managerial issue is the low number of students on the Study Programme (there were 7 in total, at the moment of this evaluation). This situation is clearly unsustainable[1], but nobody out of the Review Panel had an opportunity to talk to anyone who is responsible for state affairs to enquire about finding a solution. **Consequently, the Review Panel concludes that the responsibility for this program is not clearly allocated**.

(b) The Review Panel has been presented no evidence that data and other information regarding programme implementation is collected and analysed periodically. In particular the SER Review Panel received contains not sufficient data, and the data it contains does not always reflect the reality (see Chapter 1.4 of this Report).

(c) As a result of the external assessment in 2013, the following recommendations were made:

"1. Programme aims and study outcomes should be made publicly accessible on the LEU website and on the intranet.

2. The title of subjects should better reflect subjects' content and must be different to subjects given on bachelor level.

3. More flexibility (real options) should be provided for students in the curriculum.

---

[1]After writing this Report the Review Panel was informed by LEU that 8 students have been enrolled to the study programme in the academic year 2017/18, which will probably increase the total number of students to 11 or 12 (as some of them must have graduated in 2017). As this happened already after Review Panel evaluation was made, this fact should be seen as irrelevant from the point of view of this Report. However, since the Review Panel was explicitly asked to comment on this information, Review Panel does not perceive having the total of 11 students is radically different than having a total of 7.

Studijų kokybės vertinimo centras

4. The number of teachers coming from other institutions should be decreased in order to have more stability in the Programme.

5. Computer classes should be equipped with more advanced software and a provision concerning licenses should be made, so that students can use the recommended or needed software at home as well.

5. Computer classes should be equipped with more advanced software and a provision concerning licenses should be made, so that students can use the recommended or needed software at home as well.

6. Subject descriptions should include more electronic books and contemporary books in English language in the main subject reference lists.

7. Programme management process should be revised, separating executive management and monitoring activities.

8. Explicit procedures for programme quality assessment, involving students, social partners and alumni, should be formulated."

As it was described in Chapter 1.4., while programme aims and study outcomes are publicly accessible (recommendation 1), some important information about the basic structure of the study programme is withheld from the public. Concerning recommendation 3, there is no genuine electability of subjects (and the Review Panel does not think it is a feasible option for a study programme with 7 students). Concerning recommendation 4, the full-time staff employed by LEU in unqualified (facts was mention in Chapter 2.3.) to teach a master level curriculum in informatics, and the teaching relies on people from other institutions. Not only this recommendation was not implemented, but LEU does not express any concerns about the current situation in this regard (see SER Sections 26 and 27). The Review Panel did not receive any evidence from HEI on implementation of recommendation 7. This means that only **the recommendations which were very easy to implement were actually implemented** (like adding new books to the subject's descriptions and buying software**).**

(d) The SER Section 73 mentions stakeholders' participation in study programme management, but none of the stakeholders who attended the meeting with the Review Panel were able to recall the last amendment to the study programme proposed or discussed with Study Programme Committee. Also worth mentioning is that all programme social partners which Review Panel met (there were only two) were from academic institutions, while the introductory statement in SER states that the programme 'undergoes changes to respond to the needs of the labour market' (see Section 1). Unfortunately the Review Panel did not have opportunity to witness the stated collaboration. It

Studijų kokybės vertinimo centras

19

seems that the University does not engage actively with local IT businesses and companies, which is common and expected in the field of Informatics. This **lack of involvement of social partners** in the improvement process deprives HEI from business insights which in turn could lead to a risk of providing irrelevant study programme content and not being attractive for potential students of the programme.

(e) As it was already elaborated in Chapter 1.4., the Review Panel has found, during the site visit, several alarming discrepancies between the SER and reality, in particular:

- irrelevant CVs attached to the SER and individuals included in to the list of teaching staff (at least one case was found);

- study plans do not reflect the reality which was present throughout academic years 2013-2016;

- self-styled international collaboration was presented in the SER.

The Review Panel believes that the University's inability to produce the SER which would correctly reflect the current order of things constitutes an **evidence of study programme quality assurance measures being ineffective and inefficient**.

(f) As it was already described in Chapter 1.4., **important information about the basic structure of study programme is withheld from the public**, so that students only "learn it by word of mouth". Criterion (f) is about the institution's culture of openness and transparency, and – Review Panel regret to say – there is no evidence of such culture being present in the HEI institution under assessment.

As none of the evaluation criteria were fully satisfied and (in some cases) the shortcomings are quite severe, the Review Panel concludes that the management of the study programme is unacceptable.

III. RECOMMENDATIONS

1. As explained in the Report, the management of this programme is unacceptably inefficient, to the point where the University is not able to produce a usable SER, important information about the programme is withheld from the public and nobody feels responsible for the fact that there are just total of 7 students enrolled. If the University intends to save the programme, a small group of people should be identified who would have the will to fight for it and tools to manage it. It would be preferable if they were full-time employees of the University.

2. The University should adopt the culture of openness and transparency. Important information about the programme must be publicly available. It is unacceptable that the interested public, including the students, can only learn about important decisions concerning the organization of studies by word-of-mouth.

2. The programme should not be continued unless a way is found to attract a critical mass of students, so that they could fully benefit from a university-like environment.

3. The University should decide what the purpose of this study programme is. Is it a general computer science masters' programme, preparing specialists in informatics that are able to work with all phases or the software lifecycle, or is the main purpose to train teachers of informatics-related study subjects? If the first is the case then the teaching-related courses should be optional.

4. The learning outcomes of the programme should be much less generic, and should be stated in a way allowing students, employers, other HEIs and other stakeholders to get a clear understanding of what the Study Programme entails.

5. If the University intends to save the programme, the organization of the master thesis in the study programme (semester 2 and 4), being a consequence of a design decision driven by purely economic motivations (i.e. teaching the same subjects to both 1st year and 2nd year students at the same time) should be abolished.

6. If the University intends to teach a Masters' programme in CS/Informatics then social partners, need to be found, representing relevant industry, who would be able to formulate opinions and advice on the programme.

7. If the University intends to teach a Masters' programme in CS/Informatics then basic handbooks in the field should be available in the library.

Studijų kokybės vertinimo centras

IV. SUMMARY

While there is a high demand for informatics specialists in the Lithuanian job market as well as in the global job market, the Masters' study programme in Informatics offered by Lithuanian University of Educational Sciences fails to attract enough candidates. There are currently total of seven students enrolled.

This failure may be partially due to the fact that the **goals of the programme**/ learning outcomes are not always clear enough. On one hand, the goal is to train general specialists in informatics that are able to work with all phases or the software lifecycle, but on the other hand, "to train … teachers of informatics-related study subjects", and even within the University different groups of people, interviewed by the Review Panel, have opposite opinions concerning the importance of this educational component.

The very low number of students has serious consequences for the **study process**. Not only the students cannot fully benefit from a university-like environment, which means meeting other people, teaching, inspiring and learning from each other, but there also implications for the organization of studies: for economic reasons the same subjects are taught to 1st year and 2nd year students at the same time (so that every other year this two- years programme begins from the second year, and the first year comes afterwards).

The **management of this programme is unacceptably inefficient**. Not only the university is not able to attract students for a Masters' programme in Informatics, but cannot even a produce a usable Self-Evaluation Report. As a consequence, the Review Panel had no real basis for a sound evaluation of the programme.

The scope of the programme and the majority of the courses in **the curriculum**, as presented to the Review Panel, are relevant, suitable and sufficient to achieve the learning outcomes. However, the Review Panel found evidence that the curriculum described in the SER is not entirely taught at the moment and not all curriculum changes mentioned in the SER have yet been implemented.

Concerning the **teaching staff** of the programme, about half of the teachers are full-time employees of Lithuanian University of Educational Sciences while second half are part-time employees. While most of the part-time teachers have degrees in Informatics, and some of them are active researchers, there is only one person with a PhD in Informatics among the full-time staff (and two with PhD in mathematics). Since the full-time staff appears unqualified to teach a master level curriculum in Informatics, and since it is impossible for the Review Panel to determine how much time the part-

time staff is able to devote to the programme, it is challenging for the Review Panel to assess whether the criterion that "the qualifications of the teaching staff are adequate to ensure learning outcomes" is satisfied. For example, it is a matter of concern that the important subject Scientific-Research Practice is taught by a full-time teacher who has never practiced as an active researcher, and has no PhD degree in Informatics.

Since not much room is needed to teach a programme with seven students, clearly the classrooms and other **facilities** of the HEI has at its disposal are sufficient. The same can be said about the multimedia and computer equipment. But unfortunately, many handbooks that are universally seen as canonical for Informatics are not available in the University library.

V. GENERAL ASSESSMENT

The study programme *Informatics* (state code – 621I10004) at Lithuanian University of Educational Sciences is given **negative** evaluation.

Study programme assessment in points by evaluation areas.

No.	Evaluation Area	Evaluation of an area in points*
1.	Programme aims and learning outcomes	2
2.	Curriculum design	3
3.	Teaching staff	2
4.	Facilities and learning resources	2
5.	Study process and students' performance assessment	2
6.	Programme management	1
	Total:	**12**

*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

Studijų kokybės vertinimo centras