



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

VILNIAUS UNIVERSITETO KAUNO HUMANITARINIO  
FAKULTETO

***VERSLO INFORMATIKOS STUDIJŲ PROGRAMOS  
(612I20002)***

**VERTINIMO IŠVADOS**

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**EVALUATION REPORT  
OF *BUSINESS INFORMATICS (612I20002)*  
STUDY PROGRAMME  
AT VILNIUS UNIVERSITY KAUNAS FACULTY OF  
HUMANITIES**

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Išvados parengtos anglų kalba  
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## DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	<i>Verslo informatika</i>
Valstybinis kodas	612I20002
Studijų sritis	Fiziniai mokslai
Studijų kryptis	Informacijos sistemos
Studijų programos rūšis	Universitetinės studijos
Studijų pakopa	Pirmoji
Studijų forma (trukmė metais)	Nuolatinė (4 m.)
Studijų programos apimtis kreditais	240 ECTS
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Informacijos sistemų bakalauras
Studijų programos įregistravimo data	Lietuvos Respublikos švietimo ir mokslo ministro 1997 m. gegužės 19 d. įsakymu Nr. 565

## INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	<i>Business Informatics</i>
State code	612I20002
Study area	Physical Sciences
Study field	Information Systems
Kind 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 Information Systems
Date of registration of the study programme	19 of May 1997, under the order of the Minister of the Ministry of Education and Science of the Republic of Lithuania No. 565

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## **I. INTRODUCTION**

The procedures of the external evaluation of the Vilnius University Kaunas Faculty of Humanities (hereafter, VU KFH) *Business Informatics* bachelor study programme were initiated by the Centre for Quality Assessment in Higher Education of Lithuania nominating the external evaluation peer group formed by the head, Professor Roland Ibbett (Emeritus Professor of Computer Science, University of Edinburgh, Scotland and Chair of the Accreditation Committee of the European Quality Assurance Network for Informatics Education (EQANIE)), Professor Jürgen Dorn (Vienna University of Technology, Vienna, Austria), Professor Philippos Pouyioutas (University of Nicosia, Cyprus), Aleksej Kovaliov (Head of the Centre of Software Development, TEO LT, TellaSonera Group, Lithuania), employer representative and Justinas Petravičius (Vilnius Gediminas Technical University, Lithuania), student representative.

For the evaluation the following documents have been considered:

1. Law on Higher Education and Research of Republic of Lithuania;
2. Procedure of the External Evaluation and Accreditation of Study Programmes;
3. Methodology for Evaluation of Higher Education Study Programmes;
4. General Requirements of the First Degree and Integrated Study Programmes.

The basis for the evaluation of the study programme is the Self-Evaluation Report (hereafter, SER), prepared in 2013, its annexes and the site visit of the expert group to VU KFH on 25 October 2013. The visit incorporated all required meetings with different groups: the administrative staff of the VU KFH, staff in the Department of Informatics responsible for preparing the self-evaluation documents, teaching staff, students of all years of study, graduates and employers. The expert group evaluated various support services (classrooms, laboratories, library, computer facilities), examined students' final works, and various other materials. After the expert group discussions and additional preparations of conclusions and remarks, introductory general conclusions of the visit were presented. After the visit, the group met to discuss and agree the content of the report, which represents the expert team consensual views.

Vilnius University, founded in 1579, is one of the oldest universities in Eastern and Central Europe. For a long time it was the only school of higher education in Lithuania and has always played a significant role in the cultural life of Lithuania and neighbouring countries. The University still preserves its cultural and scientific traditions. It is organised as 12 faculties

together with a number of separate institutes and study centres. The Kaunas Faculty of Humanities, established in 1964, has 7 Departments. The Informatics Department is responsible for the *Business Informatics* bachelor study programme. The origins of this programme can be traced back to 1990, but it has been given in its present form since 2001. The programme aims to produce graduates with a good knowledge of both business and informatics who will be able to analyse business processes and to design, install and develop information systems to support those processes.

A *Finance Informatics* specialism was developed in 2009. Additional specialisms were established in 2012 but have not yet been started because of reduced student numbers. Student numbers dropped dramatically between 2009 and 2010 (from 49 to 20) and dropped even further in 2012, to 8. Part of the reason for this decline is the requirement that students enrolling to study informatics at University must have studied informatics at school. Informatics as taught in schools does not necessarily provide a good basis for the study of informatics at University, however, as is becoming apparent in many countries.

## II. PROGRAMME ANALYSIS

### *1. Programme aims and learning outcomes*

The aim of the programme is to produce graduates who become information system specialists with a deep theoretical understanding and able to do interdisciplinary research. A certain focus is on specialists for Lithuanian financial organizations. Academic freedom and the integration of science and studies is demanded. The panel believes that the aims of the programme are entirely appropriate but still there is room for improvement in the presentation of the aims and the intended learning outcomes.

The aims of the programme shall be achieved by problem solving competence, learning competence and six intended learning outcomes (as stated in SER – subject specific competences). The intended learning outcomes are further divided. The description of these eight competences is not uniform. Intended learning outcomes are described differently from other competences. One learning outcome is described by actions such as Erasmus exchange, which is not an intended learning outcome. The Department is advised to use Dublin Descriptors to give a clearer structure of the intended learning outcomes. A further improvement of the presentation may be achieved by using the e-Competences framework of the EU as a prototype, although the domain here is broader than that of the e-Competence framework.

In the SER a table is presented that tries to show in which courses which intended learning outcomes are addressed. However, here only the six abstract intended learning outcomes are listed and in many courses it is claimed that all six are supported (*e.g.* it is claimed that the foreign language courses support all competences). This makes the table not very meaningful. It is doubtful that intended learning outcome A1 “To have knowledge and skills that are necessary for the analysis, design and creation of Information system...” is obtained in a foreign language course or in a course on linear algebra.

Many competences are typical for a business informatics study programme. Since the curriculum allows a specialization in finance, competences in finance should be provided as a conditional intended learning outcome. Perhaps this focus should also be mentioned in the name of the programme. Further, as also announced during the visit, additional specializations in e-business and data analysis are planned (not mentioned in the SER) and thus, correspondingly, should be mentioned as possible intended learning outcomes. Present students, alumni and social partners

confirmed during the visit that the intended learning outcomes are achieved by the study programme.

The study programme is published on the Web in different languages. However, the English version is only a short version.

## ***2. Curriculum design***

The programme is designed to run over 8 semesters, *i.e.* 4 years, and consists of 240 ECTS. This is the maximum allowed by Lithuanian law. The minimum ECTS according to Lithuanian law would be 210 ECTS. This would also satisfy the Bologna minimum requirements.

A specialization on financial aspects in business informatics is offered besides the default programme. There is definitively a good reason for offering this specialization, but the description should be improved and perhaps also other specializations (minors) depending on the staff's competences could be offered additionally (*e.g.* e-business and data analysis).

Courses are scheduled for pre-defined semesters and 60 ECTS of courses are assigned to each academic year. There are few optional courses. The panel is a bit concerned that the number of ECTS credit points assigned to courses is non-uniform. This can restrict students' flexibility in choosing elective courses.

The mixture between informatics and business management courses seems to be appropriate, however, though perhaps there are too many general courses, and only very few courses that integrate informatics and business management are offered, *e.g.* Data Mining Technologies, e-Banking Technologies, Project Management.

The curriculum is well-designed at the course level and is consistent with the type of studies and the aims of the programme. The overall sequence of the courses is logical, starting from introductory and theoretical informatics courses, later moving towards advanced and specialized topics during years 3-4. The programme positively differentiates by dedicated courses on management, financial management and business analysis. Students' final theses and alumni feedback confirm that the studies prepare professional system analysts, designers and project managers. So the scope of the programme is sufficient to ensure the achievement of intended learning outcomes.

The review panel noticed, that there are also some drawbacks in the curriculum providing space for improvement. The curriculum covers the very basics of programming during the 1<sup>st</sup> year of

studies, subsequent dedicated courses on software development are provided during the 3<sup>rd</sup> and 4<sup>th</sup> years only (“Information publishing on the web”, “Information systems and DB”, “JAVA programming”). Students need to study practical programming languages on their own during the 2<sup>nd</sup> year for the fulfilment of the practical tasks, which is happening unsystematically and without quality assurance of their programming knowledge. The panel recommends that the Department considers rearranging the courses related to the programming of the instantly visible and practically applicable software (“Information publishing on the Web”, “Information systems and DB”, “JAVA programming”), to the 1<sup>st</sup> and 2<sup>nd</sup> years of studies in order to improve students’ confidence and interest in software development.

There are three courses covering the basics of programming, algorithms and data structures (“Basics of Java programming”, “Data structures and algorithms”, “Theory of Algorithms”), which are considered as partially repetitive and redundantly focused on basic theory topics. The panel recommends the Department to consider combining the materials taught during these three courses into one or two courses, thus freeing space in the curriculum for more practical courses more relevant to the aim of the programme.

The content of the programme generally reflects the latest achievements of the study area in the scope of managerial, business analysis and economics courses, although some modernization is required for the courses related to programming and IT technologies. For example, there are very few jobs that offer the opportunity to apply C++ and VBA programming languages; similarly, Microsoft Access database reflects neither client-server nor cloud computing aspects. The panel recommends the Department to introduce courses on market demanded technologies such as web and mobile applications development, cloud computing, modern SQL and No-SQL database systems. The panel also recommends the Department to consider introducing an Agile and LEAN project management methods overview into the course on project management, because these methodologies are relevant to IT business and are demanded in the market.

The programme aims to prepare interdisciplinary specialists with a wide scope of theoretical knowledge and practical skills. However, disciplines such as software quality assurance and IT operations management are not presented in the curriculum. The panel recommends the Department to consider the introduction of formal education on software quality assurance and IT operations management methodologies.



### 3. Staff

The study programme is delivered by 6 professors, 14 associate professors, 8 lecturers and 2 assistants, 30 in total. 24 of these staff have scientific (doctoral) degrees, *i.e.* 80%, thus well exceeding the statutory minimum of 50%. There are some minor discrepancies in job titles between those reported in the SER, those contained in the CVs of individual staff and those listed on the Faculty Academic Staff webpage. However, the copyright date on all the Faculty webpages is 2010. During the visit the departmental administrator assured the panel that this was now a priority and that a new person had recently been employed for this purpose.

Nearly half the teaching staff are in the age range 35-44, around one third are older than this, so only about 15% are below 35. Whilst this means that the majority of staff have more than adequate pedagogical experience, there is a need to attract more younger staff.

It is quite difficult to determine the overall student/staff ratio from the figures given in the SER. Assuming that the number of students enrolled in 2012/3 is the sum of those admitted in years 2008-2012 (*i.e.* zero drop-out rate) and taking the number of staff to be the 30 involved in the *Business Informatics* programme, the current student staff/ratio is 3.1:1. Even if admission numbers had remained at their 2009 level, the "worst case" ratio would have been 5.5:1 which is still very generous by international standards. If admission levels remain at their 2012 level, the sustainability of the programme has to be questioned. During the visit the panel was told that informatics staff contribute to other programmes in the Faculty, so the problem is less acute than these numbers would indicate. As in a number of other universities, the requirement that students must take informatics at school in order to be eligible for State funding for informatics study at University is having a deleterious effect. During the visit the panel was told that the Department is developing plans to attract students from a number of Russian speaking countries, possibly by delivering some of its courses in Russian.

The programme is made up of 240 ECTS credits, of which Training Practice and Final Thesis make up 30 ECTS credits, 4 mathematics courses contribute 20 ECTS credits, 17 computing courses contribute 95 ECTS credits and 28 (mainly business and language) courses contribute 104 ECTS credits (including electives). The 17 computing courses are delivered by 8 lecturers with computing qualifications, *i.e.* an average of approximately 2 courses per lecturer, while the 28 remaining courses are delivered by 22 lecturers from other Departments. However, the latter also teach courses in their own Departments, and during the visit the panel was assured that there are no issues regarding workload balance across the Faculty.

There is a small number of PhD students and many of these have in the past remained in the Department and become staff members. Appointments are made according to the relevant regulations and existing staff are re-certified every 5 years. There is minimal change in teaching staff, however, a situation which offers stability but which can also lead to stagnation. Staff engage in continuing professional development and are well supported by the Department. This includes visits to overseas institutions, providing opportunities to become aware of new ideas.

Most of the staff have reasonable publication records in subjects related to the areas in which they teach, with almost half of the publications being in international journals and conferences. A number of staff are involved in research projects, mainly within Lithuania, but with some being international. The numbers vary considerable from year to year but seem to be reducing.

#### ***4. Facilities and learning resources***

The premises and learning equipment meet only the established minimum requirements and need improvement. The classroom facilities are distributed between a number of historical buildings and are not convenient for access or for moving from one location to another due to numerous corridors, outdoor passages and stairways, conditioned by the legacy architecture of the University campus, although it is admitted both by the students and teaching staff that the historical location and the very architecture of the premises provide a unique motivating atmosphere. Office facilities are not accessible for the people with disabilities. There is also limited availability of the toilets and areas for recreation or student group work. Classrooms and corridors lack power supply sockets for students' personal computer equipment. Most of the computer classrooms are used only during lectures and are not actively used by students to work on their own or in groups. Computer classroom No.1 (20 working places) is accessible for students' individual work, as well as other computer rooms when not in use for lectures, but students need to take the keys for the classrooms and they are generally not satisfied with the equipment and facilities. Students prefer to use their own computer equipment since computer classrooms are not convenient and computer equipment there is, they say, mostly outdated. However it should be highlighted that computer equipment upgrading is an ongoing process; for example, computer classrooms No.1, No.4 and Audio Visual Laboratory equipment are on average up to 2 years old, classroom No.2 contains upgraded hardware internally, and further upgrades are scheduled for completion during the first quarter of next year.

The panel recommends that the Department should upgrade the facilities to make them suitable and accessible for people with disabilities and install extra power sockets for personal computer

equipment. Also to consider the opportunities to move out to a modern building, especially in case of limited possibilities to reconstruct the listed historical buildings.

As noted above, computer equipment is being continuously upgraded and improved – modern classes equipped with leading edge workstations and tools already in place, although the utilization and management of the computer equipment requires significant improvement. Currently, most of the infrastructure is not standardized in terms of the hardware and platforms and around 1/3 of the computer equipment is outdated and insufficient in terms of computing power for the tools used and students' assignments. Students are complaining about the performance of the classroom computer equipment and general environment inconveniences for their personal and group projects due to furniture and classroom arrangement. As mentioned above, students prefer to use their personal devices so computer classrooms are not fully utilized. The panel recommends the Department to finish the upgrade and standardization process and take some actions to improve the utilization of the computer equipment, for example by decreasing the total number of units, by rearranging the classrooms to make them available for personal and group work, by installing more power supply sockets and wireless access points for students' personal devices.

Workstations and environment are installed physically, based on the teaching staff requests, no predefined virtual machines or images are being used. This leads to higher costs and effort of maintenance. The panel recommends the Department to consider the virtualization of the typical environments for lectures and practical assignment environments to make it easier to re-boot and clean up after usage.

Internet and wireless access is sufficient, secured and generally available in all classrooms and premises. Security of the computer network and workstations is also ensured by Active Directory domain and personal accounts with limited permissions, although classroom workstations have external IP addresses, which raises the risk of computer network vulnerability arranged both externally and internally by logging in locally. The panel recommends that the Department resolves this vulnerability issue by making workstations inaccessible externally, also to consider virtualization of the workstations environment, as proposed above, for easier clean up and protection against malicious software installed locally in physical workstations.

The Library and global e-libraries are not actively used by the students, since they believe they are fully provided with learning materials related to the lectures and are used to finding all the necessary information in public internet sources. The panel recommends the Department to

consider additional communication about the valuable library and global e-library materials by mapping them to particular courses or practical projects and thus increasing students' awareness.

The e-learning system is not standardized and is not obligatory to use. Teaching staff use 2 different systems – FTP server and Moodle – the electronic learning materials publishing on their own decision. The panel recommends that the Department introduces unified rules for the teaching staff to make use of a single e-learning facility systematic and obligatory.

Students are provided with adequate arrangements for the practical work, although taking into account the aim of the programme, there is insufficient group work practice; students admit they perform most practical work stand-alone. The panel recommends the Department to introduce obligatory group work projects and practice starting in the early years of study in order to improve students' interpersonal professional communication, project management and soft skills.

Students are not fully aware of employment possibilities and career requirements. There is a high contrast between the alumni and current students' understanding of the programme's relevance to professional profiles. This misunderstanding may be a cause of student drop out during the early years of study and low level of employment among the 3-4 year students. The panel recommends that the Department provides careers advice and consistently articulates the relevance of the course for particular professions demanded in the market.

Students are also not aware of ongoing industrial events and activities of professional communities. The panel recommends the Department to consider additional communication about professional community events and activities, such as gatherings of IT professionals, conferences, project management associations, start-up accelerators and boot-camps.

##### ***5. Study process and student assessment***

The admission requirements are well-founded but numbers are dropping and the panel agrees with the Department that the obligatory State school informatics exam is an obstacle for pupils who would like to study business with informatics. As stated during the meetings, this study programme aims to produce business people with informatics knowledge and not *vice versa*. As well as engaging with the Ministry of Education and Science over this issue, the panel suggests that the Department should promote this study programme in schools by sending students or staff to make presentations.

The organisation of the study process doesn't fully ensure an adequate provision of the programme and the achievement of the intended learning outcomes. Firstly, students have very different views about what they think this programme teaches in comparison with the staff. Although the staff think that this programme should teach students to be business or project managers, the students seem to be unaware of this. The majority of students in the meeting had no view of what they are going to do once they graduate. Secondly, the Department and teachers are not using e-learning consistently, different e-learning systems are used, which the students say is inconvenient, so the panel recommends the use of e-learning consistently, with only one e-learning system.

Students do not seem to be encouraged to participate in research activities. More importantly students are not introduced with such activities, as it is not mentioned in SER and was not mentioned during meetings, which results in students not knowing that these activities exist at all. So the panel recommends at least introducing students to such activities, though it would be best if teachers would find suitable projects for the students and make them part of a course, this way encouraging students to participate.

Students have opportunities to participate in student mobility programmes but as SER numbers show, and confirmed during the meetings both with graduates and undergraduates, students of this study programme have very low participation in student mobility programmes because the majority of them have jobs. But this cannot be a pretext for Department not to encourage students to participate in such programmes. So the panel recommends promoting student mobility programmes and encouraging students to participate by talking about the benefits of these programmes, how they can help with students' careers and how can they improve their informatics skills by bringing back good practice from abroad.

There does not appear to be the same level of social support for students as is available at the University's Vilnius sites. In terms of academic support, it became clear after meeting with students that Department does not give any feedback to students about the changes that have been made to study programme, environment or material based on their responses to questionnaires. It was also apparent from the same meeting that students don't know where to address their issues, because no-one is listening to their opinion. Also they mentioned that the students' representative is inactive and does not seem to care about students' problems. The panel therefore suggests involving students in administrative processes, so as to ensure that students' opinion will be heard and considered. Students do not appear to know much about life outside the University. They said that the University doesn't provide such information, so the panel

suggests encouraging students to participate in external events related to this study programme. The panel was also concerned at the apparent lack of social skills among the students, so recommends developing students' social skills by organising social events, public coursework and other activities which develop social skills and eliminate fear of public speaking.

The assessment system of students' performance is clear, adequate and publicly available.

The Faculty is clear that graduates from several years ago now have very successful careers that fulfil its expectations but it is not clear that this is the case for more recent graduates.

## ***6. Programme management***

The programme is tended to be managed and reviewed according to standard and established methods and techniques of the VU study programme regulations approved by the Senate, that involve all stakeholders, namely, teaching staff, students, alumni and employers.

Furthermore, there is a very good documented hierarchical structure of committees and academic managers that oversee programme management at the University level. The main responsibility for the programme management and review is with the Study Programme Committee for Business Informatics, which includes all relevant stakeholders, namely, teachers, social partners/industry representatives and students; the committee is approved by the VU Senate Commission.

According to the in SER described review process, the programme is reviewed by all stakeholders with regards to curriculum, delivery and assessment methods, learning resources and teaching staff and any changes need the approval of the Council of the Faculty. As well it is stated that the VU Quality Management Centre surveys at regular intervals to solicit feedback from all stakeholders. Student surveys take place at the end of every examination period and the results are given to lecturers, Study Programme Committee, heads of Department and administration. Teacher surveys take place every two years to solicit feedback from teaching staff. While review panel noticed that a survey targeting alumni and informal discussions with social partners and industry representatives takes place at irregular intervals. Despite of the fact social partners provide some additional input to the programme through invited lectures, professional practice placements for students and thesis work and defence, the links with social partners do not seem to be very strong.

It seems however that the review process and all the aforementioned mechanisms are not thoroughly implemented, especially with regards to stakeholders' actual participation. Furthermore, students reported that they do not feel very comfortable in making requests or contacting high ranked academic administrators if their requests are rejected. They also reported that they do not get informed about decisions taken based on their feedback. Thus, there seems to exist a communication gap between academic administration and students.

In general, and concluding from previous comments, the interaction between the Department and all stakeholders is weak. It seems that the process of engaging the stakeholders in an active and enthusiastic exchange of ideas fails. Similarly, the process for receiving and analyzing feedback and formally recording any actions taken, and reporting back to the stakeholders also fails, especially since from the very beginning of the process there is lack of active participation.

### III. RECOMMENDATIONS

1. The panel notes the Department's concern over the low number of students entering the programme and encourages the Department to continue to press for dialogue with the Ministry of Education and Science regarding the entry requirements for the degree. The panel also suggests using current students as ambassadors who could visit schools throughout Lithuania to tell pupils about the degree programme.
2. The panel has a number of recommendations concerning the curriculum. Firstly, that the Department should consider rearranging the order of presentation of its programming courses, so that web-based courses (e.g. “Information publishing on the Web”, “Information systems and DB”, “JAVA programming”) are delivered in 1<sup>st</sup> and 2<sup>nd</sup> year, in order to improve students’ confidence and interest in software development.
3. Secondly, courses covering the basics of programming, algorithms and data structures could be compacted to make space in the curriculum for courses more relevant to the aim of the programme, such as web and mobile applications development, cloud computing, modern SQL and No-SQL database systems.
4. Thirdly, the panel recommends that the Department considers introducing Agile and LEAN project management methods into the course on project management and considers the introduction of formal education on software quality assurance and IT operations management methodologies.
5. Fourthly, the Department is recommended to consider regularising the number of ECTS credit points assigned to courses in order to enable greater flexibility for students in choosing elective courses.
6. The panel notes that being accommodated in listed historical buildings is a constraint on the Department's facilities and believes that moving to a modern building would be helpful. Nevertheless the panel believes that a number of improvements could and should be made to existing premises. Firstly, the panel recommends that the premises should be made accessible to people with disabilities. Secondly the Department should re-arrange the classrooms to make them available for personal and group work, by installing more power supply sockets and wireless access points for students’ personal computers.



7. The Department is recommended to make a number of changes and improvements to its computing infrastructure by completing the current upgrading and standardization process and by taking actions to improve the utilization of its computer equipment and to resolve some vulnerability issues, especially by the use of virtualization of the environments used for lectures and practical assignments.
8. The panel recommends that the Department considers additional communication to students about the valuable library and global e-library materials by mapping them to particular courses or practical projects and thus increasing students' awareness thereof.
9. The panel recommends that the Department introduces unified rules for the teaching staff to make use of a single e-learning facility systematic and obligatory.
10. The panel was concerned at the apparent lack of social skills among the students and recommends the introduction of obligatory group work projects and practice starting in the early years of study in order to improve students' interpersonal professional communication, project management and soft skills. This could be further supported through organised social events, public coursework presentations, etc. and by encouraging students to take part in Departmental, Faculty and University activities.
11. The panel recommends that the Department provides careers advice and consistently articulates the relevance of the course for particular professions demanded in the market. This should be supported by additional communication about professional community events and activities, such as gatherings of IT professionals, conferences, project management associations, start-up accelerators and boot-camps.
12. The panel recommends greater encouragement to students to participate both internally in research projects and externally in student mobility programmes.
13. The Department is recommended to build stronger and formal links with alumni and social partners and to take a more systematic approach to obtaining feedback from its students, alumni and social partners and in providing feedback to each of those groups on any responses to their input.

#### **IV. SUMMARY**

The *Business Informatics* programme aims to produce information systems specialists, able to analyse business processes and to design, develop and install information systems that support these processes. These aims are to be achieved by problem solving competence, learning competence and six intended learning outcomes (subject specific competences) which are further divided. Many of these competences are typical for a business informatics study programme, but since the curriculum also allows a specialization in finance, competences in finance could usefully be included. The panel was pleased to hear that further specialisations in e-business and data analysis are planned.

The curriculum includes an appropriate mix of informatics and business management courses, though there are only a few courses that integrate informatics and business management. The panel believes that there is scope for improvement both in content and in the style of teaching and learning. In particular, the students would benefit from more practical programming work, spread throughout the 4 years and using languages in the early years that are currently taught in later years. The report contains a number of detailed recommendations regarding the introduction of material on modern informatics technologies and management methods that would be more appropriate than some of the existing material.

There are adequate staff to deliver the programme and the staff are suitably qualified. Most have reasonable publication records in subjects related to the areas in which they teach. There are relatively few younger staff and staff turnover is quite low. The reducing number of students enrolling on the programme is a cause for concern and the currently very low student/staff ratio raises questions about the sustainability of the programme. Because staff have other teaching commitments, however, the situation is serious but not yet critical. The Department presented a number of ideas that are being developed to increase enrolment.

The premises and learning equipment meet only the established minimum requirements and need improvement. The classroom facilities are distributed between a number of historical buildings and are not very convenient. Although the historical location and the architecture of the premises provide a unique motivating atmosphere, being housed in a modern building would be much more appropriate. Until such a move becomes possible, however, there are numerous improvements that can be made to create a better environment for students, both in terms of the physical environment and the computing facilities. This is particularly important if the

Department is to introduce more group work, as recommended by the panel. The panel also identified some vulnerability issues with the current computing environment and these should be addressed as a matter of urgency.

The Library and global e-libraries are not actively used by the students, since they believe they are fully provided with learning materials related to the lectures and are used to finding all the necessary information in public internet sources. Students need to be encouraged to make more use of these facilities and the use of a single e-learning facility needs to be made systematic and obligatory.

There seems to be a mis-match between staff and student expectations concerning career prospects. The staff believe that graduates of this programme will become business or project managers, and certainly graduates from several years ago now have very successful business careers. However, current students seem not to be very aware of employment possibilities or career requirements, and those who are appear to think in terms of IT support roles in business. There is a general lack contact with the world outside of the Faculty, either locally in terms of attending relevant professional community events and activities, or more widely in terms of international exchange programmes. This correlates with the lack of social skills apparent among the students and this could also be related to there not being the same level of social support for students as is available at the University's Vilnius sites.

In terms of academic support, although the students were very positive about their contacts with individual staff members, they were concerned that Department does not give any feedback to students about the changes that have been made to the study programme, environment or facilities based on their responses to questionnaires. As a consequence, students feel that no-one listens to their opinions or concerns.

The programme is tended to be managed and reviewed according to standard and established methods and techniques of the University that involve all stakeholders: teaching staff, students, alumni and employers. There is a very good documented hierarchical structure of committees and academic managers. Although in reality the interaction with alumni and social partners could be strengthened. Students in particular need to be encouraged to become more involved and made aware that their inputs are valued and do have influence.

## V. GENERAL ASSESSMENT

The study programme *Business Informatics* (state code – 612I20002) at Vilnius University Kaunas Faculty of Humanities is given **positive** evaluation.

*Study programme assessment in points by evaluation areas.*

No.	Evaluation Area	Evaluation Area in Points*
1.	Programme aims and learning outcomes	3
2.	Curriculum design	3
3.	Staff	3
4.	Material resources	2
5.	Study process and assessment (student admission, study process student support, achievement assessment)	2
6.	Programme management (programme administration, internal quality assurance)	2
	<b>Total:</b>	<b>15</b>

\*1 (unsatisfactory) - there are essential shortcomings that must be eliminated;

2 (satisfactory) - meets the established minimum requirements, needs improvement;

3 (good) - the field develops systematically, has distinctive features;

4 (very good) - the field is exceptionally good.

Grupės vadovas:

Team leader:

Prof. Roland N. Ibbett

Grupės nariai:

Team members:

Prof. Philippos Pouyioutas

Prof. Jürgen Dorn

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**VILNIAUS UNIVERSITETO KAUNO HUMANITARINIO FAKULTETO PIRMOSIOS  
PAKOPOS STUDIJŲ PROGRAMOS *VERSLO INFORMATIKA* (VALSTYBINIS KODAS  
– 612I20002) 2013-12-16 EKSPERTINIO VERTINIMO IŠVADŲ NR. SV4-560 IŠRAŠAS**

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## V. APIBENDRINAMASIS ĮVERTINIMAS

Vilniaus universiteto Kauno humanitarinio fakulteto studijų programa *Verslo informatika* (valstybinis kodas – 612I20002) vertinama **teigiamai**.

Eil. Nr.	Vertinimo sritis	Srities įvertinimas, balais*
1.	Programos tikslai ir numatomi studijų rezultatai	3
2.	Programos sandara	3
3.	Personalas	3
4.	Materialieji ištekliai	2
5.	Studijų eiga ir jos vertinimas	2
6.	Programos vadyba	2
	<b>Iš viso:</b>	<b>15</b>

\* 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

*Verslo informatikos* studijų programos tikslas – rengti informacinių sistemų specialistus, gebančius analizuoti verslo procesus bei projektuoti, kurti ir diegti šiuos procesus palaikančias informacines sistemas. Minėtojo tikslo siekiama pasitelkiant problemų sprendimo kompetencijos, mokymosi kompetencijos ugdymą bei šešis numatomus studijų rezultatus (specialiosios dalykinės kompetencijos), kurie skirstomi į dar smulkesnius. Daugelis šių kompetencijų yra tipinės verslo informatikos studijų programai. Vis dėlto kadangi studijų programoje yra numatyta galimybė rinktis Finansų informatikos specializaciją, į kompetencijų sąrašą būtų tikslinga įtraukti ir kompetencijas finansų srityje. Ekspertų grupė palaiko studijų programos vykdytojų sprendimą ateityje teikti E. verslo bei Duomenų analizės specializacijas.

Studijų sandara pasižymi tinkamu informatikos ir verslo vadybos studijų dalykų santykiu, tačiau tik keliuose iš studijų dalykų informatika ir vadyba yra dėstoma tarpdalykiškai. Ekspertų grupės įsitikinimu, studijų programoje esama pakankamai erdvės tobulėjimui turinio, dėstymo metodų ir mokymosi būdų atžvilgiais. Studentams būtų ypatingai naudinga per 4 studijų metus įgyti daugiau programavimo praktikos. Jau pirmaisiais studijų metais galėtų būti supažindinama su programavimo kalbomis, kurios bus dėstomos vėlesniuose kursuose. Pažymėtina, kad vertinimo išvadose pateikiama nemažai rekomendacijų dėl medžiagos apie šiuolaikines informatikos technologijas ir vadybos metodus naudojimo, siekiant akcentuoti, kad ši medžiaga būtų tinkamesnė nei ta, kuria remiantis yra dėstoma šiuo metu.

Studijų programoje dėstančio personalo skaičius ir kvalifikacija yra pakankama. Daugelis dėstytojų yra publikavę aukštos kokybės mokslinių darbų, susijusių su dėstomais studijų dalykais. Jaunesnių dėstytojų studijų programoje yra santykinai nedaug, personalui nebūdinga didelė kaita. Ekspertai pastebėjo susirūpinimą keliančią problemą – mažėjantį stojančiųjų skaičių, atitinkamai nepalankų studento/dėstytojo santykį, keliančius grėsmę tolesniam studijų programos vykdymui. Kadangi akademinis personalas dėsto ir kitose studijų programose, tai sušvelnina esamą situaciją. Susitikimo metu programos vykdytojai pateikė pakankamai informacijos apie priemones, kurias įgyvendino siekdami padidinti stojančiųjų skaičių.

Studijų programos materialieji ištekliai atitinka tik minimaliuosius reikalavimus. Jiems reikalingas atnaujinimas / patobulinimas. Auditorijos yra išdėstytos keliuose istoriniuose pastatuose, kurie nėra itin patogūs studijoms. Nors senamiestis ir istorinė patalpų architektūra kuria ypatingą atmosferą, įsikurti visus reikalavimus atitinkančiame šiuolaikiniame pastate būtų kur kas patogiau. Iki persikėlimo į kitas patalpas, esamose patalpose reikėtų atlikti būtinus atnaujimus/patobulinius tiek patalpų, tiek kompiuterinės įrangos atžvilgiais, siekiant sukurti studijoms palankią terpę. Tai ypatingai svarbu, jeigu katedra, atsižvelgdama į ekspertų grupės rekomendacijas, ketina studijų metu organizuoti daugiau grupinio darbo užsiėmimų. Ekspertų grupė taip pat nurodė kelias šiuo metu egzistuojančias kompiuterinės aplinkos pažeidžiamumo problemas, kurios turėtų būti sprendžiamos kuo skubiau.

Studentų naudojimasis vietine biblioteka, taip pat ir pasaulinėmis e. bibliotekomis yra nepakankamas. Šio reiškinių priežastis yra įsitikinimas, kad jiems visiškai pakanka per paskaitas išdėstomos medžiagos, o visą reikiamą informaciją galima rasti viešai prieinamuose interneto šaltiniuose. Studentus reikėtų skatinti aktyviau naudotis minėtais informacijos šaltiniais, o naudojimasis bendromis e. mokymosi priemonėmis turėtų tapti sisteminiu ir privalomu.

Kalbant apie karjeros perspektyvas, buvo pastebėtas dėstytojų ir studentų lūkesčių nesuderinamumas. Dėstytojai yra įsitikinę, kad baigusieji šią studijų programą taps verslo arba projektų vadybininkais. Atkreiptinas dėmesys, kad kelerių pastarųjų metų absolventų karjera privačiame sektoriuje yra sėkminga. Vis dėlto žvelgiant iš dabartinių studentų perspektyvos, panašu, kad jie nelabai žino apie įsidarbinimo galimybes arba profesinius reikalavimus darbo rinkoje, o žinantieji būsimą darbą suvokia kaip informacinių technologijų priežiūrą įmonėse. Pažymėtina, kad fakultetas stokoja išorinių kontaktų: vietiniu požiūriu, reikėtų aktyviau dalyvauti specialistų bendruomeniniuose renginiuose bei jų vykdomoje veikloje, žvelgiant plačiau – tarptautinėse mainų programose. Ši situacija yra susijusi su akivaizdžiai pastebima studentų socialinių įgūdžių stoka, kurią galimai sąlygoja ne tokio pat lygio socialinė parama teikiama universiteto padaliniuose Vilniuje.

Nors, vertinant akademinės paramos teikimą, studentai teigiamai atsiliepė apie individualų santykį su dėstytojais, susirūpinimą kelia tai, kad katedra nepateikia studentams jokio grįžtamojo ryšio, kaip, atsižvelgiant į klausimynuose pateiktus studentų atsakymus, buvo keičiama studijų programa, studijų aplinka arba infrastruktūra. Dėl to studentams atrodo, kad jų nuomonė arba rūpesčiai niekam neįdomūs.

Programą stengiamasi vykdyti ir atnaujinti laikantis universiteto lygmeniu nustatytų standartų ir metodų, įtraukiančių visas suinteresuotas šalis: dėstytojus, studentus, absolventus ir socialinius partnerius. Hierarchinė komitetų ir akademinio vadovimo struktūra yra tinkamai dokumentuota, nors realybėje sąveika su absolventais ir socialiniais partneriais galėtų būti glaudesnė. Atkreiptinas dėmesys, kad į studijų kokybės užtikrinimą reikėtų labiau įtraukti studentus, siekiant, kad jie žinotų apie jų indėlio vertę ir svarumą.

### **III. REKOMENDACIJOS**

1. Ekspertų grupė atkreipė dėmesį į katedros susirūpinimą dėl mažo šioje studijų programoje studentų skaičiaus ir ragina katedrą siekti dialogo su Lietuvos Respublikos švietimo ir mokslo ministerija dėl reikalavimų stojantiesiems pakeitimo. Taip pat, ekspertų grupė siūlo suvokti šiuo metu studijuojančius studentus kaip ambasadorius, kurie galėtų lankytis Lietuvos mokyklose ir teikti moksleiviams informaciją apie studijų programą.
2. Ekspertų grupė pateikė nemažai rekomendacijų dėl studijų programos sandaros. Pirma, katedra turėtų apsvarstyti su programavimu susijusių studijų dalykų išdėstymo seką,

siekiant, kad su žiniatinklio technologijomis susiję studijų dalykai (pvz., „Informacijos pateikimo žiniatinklyje technologijos“, „Informacijos sistemos ir duomenų bazės“, „JAVA programavimas“) būtų dėstomi pirmaisiais ir antraisiais studijų metais. Tokiu būdu studentai įgytų daugiau pasitikėjimo savo jėgomis ir padidėtų jų suinteresuotumas programinės įrangos kūrimu.

3. Antra, studijų dalykų, susijusių su programavimu, algoritmais ir duomenų struktūromis apimtis galėtų būti sumažinta tam, kad studijų programoje rastųsi daugiau vietos programos tikslą labiau atitinkantiems studijų dalykams, tokiems kaip, žiniatinklio ir mobiliųjų aplinkacijų kūrimas, debesų kompiuterija, šiuolaikinė SQL ir No-SQL duomenų bazių sistemos.
4. Trečia, ekspertų grupė rekomenduoja katedrai apvarstyti galimybę į Projektų vadybos studijų dalyką įtraukti Agile ir LEAN projektų valdymo metodus, o į formalųjį mokymą – programinės įrangos kokybės užtikrinimo ir informacinių technologijų operacijų valdymo metodologijas.
5. Ketvirta, katedrai rekomenduojama peržiūrėti studijų dalykams skirtų ECTS kreditų skaičių, siekiant suteikti studentams galimybės lanksčiau rinktis laisvai pasirenkamus studijų dalykus.
6. Ekspertų grupė atkreipė dėmesį, kad saugomi istoriniai pastatai, kuriuose vykdoma studijų programa, yra nepakankamai patogūs, ir laikosi nuomonės, jog būtų naudinga persikelti į modernesnę pastatą. Kalbant apie esamas patalpas, ekspertų grupės įsitikinimu, jas būtų galima ir reikėtų patobulinti. Pirmiausia ekspertų grupė rekomenduoja pritaikyti patalpas neįgaliųjų reikmėms. Antra, auditorijose turėtų būti įrengta daugiau elektros lizdų ir užtikrinama belaidė prieiga prie interneto, siekiant, kad studentai galėtų laisvai dirbti su savo asmeniniais kompiuteriais, taip pat, kad būtų sukuriamos sąlygos individualiam ir grupiniam darbui.
7. Katedrai rekomenduojama tobulinti kompiuterinę infrastruktūrą: užbaigti šiuo metu vykdomą atnaujinimo ir standartizacijos procesą, imtis veiksmų, orientuotų į turimos kompiuterinės įrangos tikslingo panaudojimo užtikrinimą, spręsti tam tikrus pažeidžiamumo klausimus, išskylančius dėl paskaitų ir seminarų metu naudojamos virtualios aplinkos priemonių.



8. Ekspertų grupė rekomenduoja katedrai užtikrinti papildomos informacijos teikimą apie turimos bibliotekos bei pasaulinės e. bibliotekos medžiagos vertę, – tam galėtų pasitarnauti konkretūs studijų dalykai ar praktiniai projektai.
9. Ekspertų grupė rekomenduoja katedrai nusistatyti vienodas taisykles, pagal kurias dėstytojai privalomai ir sistemingai turėtų naudotis viena e. mokymo priemone.
10. Ekspertų grupei susirūpinimą kelia studentų socialinių įgūdžių stoka, todėl rekomenduotina pirmaisiais studijų metais įvesti privalomus darbo grupėmis projektus ir praktiką – šios priemonės leistų pagerinti studentų profesinį bendravimą tarpusavyje, projektų vadybos ir asmeninius įgūdžius. Prie to galėtų prisidėti ir organizuojami visuomeniniai renginiai, vieši kursinių darbų pristatymai ir pan., skatinantys studentus dalyvauti katedros, fakulteto ir universiteto organizuojamose veiklose.
11. Ekspertų grupė rekomenduoja katedrai konsultuoti studentus karjeros klausimais ir aiškiai apibrėžti, kaip dėstomas studijų dalykas yra susijęs su konkrečia profesija darbo rinkoje. Šiuo tikslu reikėtų teikti papildomą informaciją apie profesinių bendruomenių renginius ir veiklą, pvz., informacinių technologijų specialistų susirinkimus, konferencijas, projektų vadybos asociacijas, naujokų mokymo stovyklas.
12. Ekspertų grupė rekomenduoja skatinti studentus aktyviau dalyvauti tiek universiteto vykdomuose mokslinių tyrimų projektuose, tiek studentų judumo programose.
13. Katedrai rekomenduojama palaikyti glaudesnius ir aiškiau reglamentuotus ryšius su absolventais ir socialiniais partneriais, vadovautis sistemiškesniu požiūriu į studentų, absolventų ir socialinių partnerių teikiamą grįžtamąjį ryšį, taip pat kiekvieną iš suinteresuotų grupių informuoti apie reakciją į jų išsakytas pastabas.

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Paslaugos teikėjas patvirtina, jog yra susipažinęs su Lietuvos Respublikos baudžiamojo kodekso<sup>1</sup> 235 straipsnio, numatančio atsakomybę už melagingą ar žinomai neteisingai atliktą vertimą, reikalavimais.

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<sup>1</sup> Žin., 2002, Nr.37-1341.