

VILNIUS UNIVERSITY

**INFORMACIJOS SISTEMŲ (I200) STUDIJŲ KRYPTIES**

**SECOND CYCLE STUDY PROGRAM**

**BUSINESS INFORMATICS**

**CODE 621I20001**

**SELF-ASSESMENT SUMMARY**

Vilnius university pro-rector for studies ………………….. doc. dr. Nijolė Radavičienė

(parašas)

Head of self-assesment group …………………….. doc. dr. Vytautas Rudžionis

(parašas)

Vilnius

2015

**Main information about the program**

|  |  |
| --- | --- |
| **The name of study program** | Business informatics |
| **State code** | 621I20001 |
| **Study area** | Physical sciences |
| **Study field** | Information systems |
| **Level of qualification** | University |
| **The language of tutoring** | Lithuanian |
| **Study level** | Second |
| **Form of studies and duration** | 2 years |
| **Program volume in credits** | 120 |
| **Given qualification** | Master of information systems |
| **The date of program registration and decree Nr.** | 2003-05-29, Nr. 763 |

Abreviations used in self-assesment:

AVL – audiovisual laboratory

BIM – business information master programme

CW – computerized workplace

IT – information technologies

ITTC – information technologies and communications centre

SPK – study programme commitee

**Self-assesment report preparation group\* and members responsibilities**

|  |  |  |
| --- | --- | --- |
| **First name, surname, contacts** | **Position** | **Scope of work and responsibilities** |
| dr. Vytautas Rudžionis, [vytautas.rudzionis@khf.vu.lt](mailto:vytautas.rudzionis@khf.vu.lt)  head of self-assesment group | assoc. professor | aims of study program, learning outcomes, general work coordination |
| dr. Audrius Lopata, [audrius.lopata@khf.vu.lt](mailto:audrius.lopata@khf.vu.lt) | professor | programos sandara |
| dr. Gintautas Garšva, [gintautas.garsva@khf.vu.lt](mailto:gintautas.garsva@khf.vu.lt) | professor | studijų eiga ir jos vertinimas |
| dr. Dalia Krikščiūnienė, [dalia.kriksciuniene@khf.vu.lt](mailto:dalia.kriksciuniene@khf.vu.lt) | professor | program management |
| dr. Saulius Masteika, [saulius.masteika@khf.vu.lt](mailto:saulius.masteika@khf.vu.lt) | assoc. professor | student accession |
| dr. Vera Moskaliova, [vera.moskaliova@khf.vu.lt](mailto:vera.moskaliova@khf.vu.lt) | lecturer | material resources |
| Ilona Veitaitė, [ilona.veitaite@khf.vu.lt](mailto:ilona.veitaite@khf.vu.lt) | administrator | personal |
| Povilas Raškauskas, [povilas.raskauskas@stud.khf.vu.lt](mailto:povilas.raskauskas@stud.khf.vu.lt) | student | accession, social support of students |

\*approved by the decree of Dean of Kaunas Faculty of Humanities on October 9, 2015, decree Nr. 20

**Work schedule of self-assesment report preparation group**

|  |  |
| --- | --- |
| **Activity** | **Date** |
| collection of information necessary for self-assesment | 2015-09-15 |
| preparation of primary text of self-assesement report | 2015-10-01 |
| discussion of prmary self-assesment report:consideration of three evalauted areas (aims and learning outcomes, program structure and staff) | 2015-10-15 |
| discussion of prmary self-assesment report:consideration of three evalauted areas (material resources study process and its evaluation and program management) | 2015-11-01 |
| Spresentation of self-assesemnt report to program lecturers and social partners, discussion avianalizės suvestinės pristatymas programos dėstytojams ir socialiniams partneriams, pastabų aptarimas | 2015-11-15 |
| preparation of final text of self-assesment report | 2015-11-25 |

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# INTRODUCTION

Vilnius University (further on – the University) was established in 1579 and is the oldest and largest university in Lithuania. The structure of the University’s government is determined by the *Statute of Vilnius University* (Approved in 06-05-2014, by the Law of the Republic of Lithuania no. XII-862), which specifies that the self-government of the University community is carried out by *the* *Senate, the Board and the Rector.*

According to the data of 01-11-2015, 3.670 persons has been working (out of whom 1.348 as pedagogic staff, 451 scientific researchers) and 21.006 persons study at the University. The University comprises 23 academic subdivisions (12 faculties, 7 institutes (2 of which may be viewed as faculties for their status), 4 centres for studies and science and 7 non-academic subdivisions.

The University carries out studies of all 3 cycles in humanities, social, physical, technological sciences and biomedicine: more than 70 Bachelor and 100 Master study programmes. PhD students may choose from almost 30 areas of science, while residents may find more than 50 study programmes. Kaunas Faculty of Humanities (further on – KHF) was established in 1964 and is the only subunit of Vilnius University residing in another city. KHF works according to the Statute of Vilnius University. KHF is administered by the Faculty’s Board and the Dean. At the moment, the Faculty comprises 7 Departments [Informatics, Philosophy and Cultural Studies, Finance and Accounting, German Philology, Lithuanian Philology, Foreign Languages, Business Economics and Management] and 1 centre [Centre for Socio-cultural Research], which accordingly carry out research and studies. Moreover, Audiovisual laboratory and Creative Incubator has also been established.

The main directions for scientific research are social, physical, technological sciences and humanities; 4 long-term VU scientific research and experimental programmes are carried out (Modelling and management of Lithuania’s social and economic development; Poetics, rhetoric and linguistics, namely, fundamental and applied research of artistic and non-artistic texts; Informatics: recognition of processes, data analytics and visualization, optimization, artificial intelligence, the modelling of processes and systems, mathematical logic and discrete structures, innovative teaching methods; Technological sciences: image and signal processing technologies, parallel computations, system engineering, experiment evaluation, applications of information technologies).

The Faculty publishes scientific journals “Respectus Philologicus” (see <http://www.rephi.khf.vu.lt/lt/>) and “Transformations in Business and Economics” (see <http://www.transformations.khf.vu.lt/>).

The lecturers of “Business Informatics” study programme contribute to the publishing of the journal “Transformations in Business and Economics“. Seeking to ensure the spread of scientific research, national and international conferences are organized in the Faculty, e.g. an international conference “Business Information Systems”, a seminar “Applications of Knowledge-Based Technologies in Business” (organized since 2009, see <http://bis.kie.ue.poznan.pl/bis2015/workshops/aktb-2015/>).

KHF carries out 10 study programmes of the 1st cycle [English and Russian Languages, Audiovisual Translation; Economics; Economics and Management; Business Informatics (with separate specialization Finance Informatics); Applied Systems of Finance and Accounting; Cultural Management; Lithuanian Philology and Advertising; Business Management] and 10 study programmes of the 2nd cycle [English Linguistics, Accounting, Finance and Banking; Lithuanian Linguistics; Lithuanian Literature; Marketing and Management of Trade; Management of Art; International Business Management; Business Administration, Business Information Systems, Business Informatics].

KHF pursues PhD studies in the fields of economics, management, philology, informatics and informatics engineering. Studies in informatics and informatics engineering are carried out in cooperation with VU Institute of Mathematics and Informatics.

Currently, the Faculty comprises 124 pedagogues, researchers and administration workers (17 professors and principal researchers, 38 associate professors and senior researchers, 28 lecturers, 1 assistant, 40 administration workers), and 850 students.

The study programme *Business Informatics* is carried out by the Department of Informatics. The programme has been opened in 2001 after having reorganized the previous programme *Information Business* (the programme was updated and the title was changed in 24-10-2001 (in the Faculty’s Board, 31-10-2002, No. 4 (in VU Senate) and by the order of the Minister of Education and Science of the Republic of Lithuania no.763, in 29-05-2003. The programme’s external assessment took place in 2009. The programme was evaluated positively and accredited for 6 years. The changes which occurred as a result of the experts’ remarks or initiated by the study programme committee, have all been discussed in corresponding chapters of this report.

# ANALYSIS OF THE STUDY PROGRAMME

## Goal(s) and learning outcomes of the study programme.

### 1.1 Goal(s) and learning outcomes of the study programme.

***The aim of the study programme*** is to prepare specialists of high quality who have knowledge of theories and methods of informatics and application of informatics into business, are able to renew and apply knowledge of informatics and its application into business by analysing, evaluating critically the processes, tendencies and development occurring in economics and information technologies; who are able to make suitable decisions based on all this knowledge; who have strong abilities to pursue scientific research.

In order to attain the above indicated aim, SPK have formulated learning outcomes of the study programme, which are related to certain competences developed in the study programme. The outcomes are in correspondence with the approved Description of Study Cycles and recommendations of Eqanet network. The competences of the study programme and the corresponding outcomes are presented in table 1.

**Table 1.** **Generic and subject-specific competences of the study programme and learning outcomes**

|  |  |  |  |
| --- | --- | --- | --- |
| **Generic competences of the study programme** | | **Learning outcomes** | |
| **1.** | Ability to think critically, constructively and creatively | **1.1** | Able to think systematically, analytically and critically. |
| **1.2** | Able to make decisions by applying methods used in different fields of science. |
| **2.** | Communicational abilities | **2.1** | Communicate effectively with technology and business stakeholders. |
| **2.2** | Able to choose a suitable style and form when presenting information to non-specialists. |
| **3.** | Ability to carry out scientific research | **3.1** | Able to apply methods of scientific research, able to carry out scientific research, present conclusions and evaluation of scientific research, analysis and practical activity solutions. |
| **3.2** | Able to define tasks and suggest solutions. |
| **Subject-specific competences of the study programme** | | **Learning outcomes of the study programme** | |
| **4.** | Ability to use the most advanced methods of information technologies | **4.1** | Able to define and set up information streams in a company, to determine critical channels of information for the success of business. |
| **4.2** | Able to evaluate efficiency of technological alternatives of information systems. |
| **4.3** | Able to define requirements for information systems. |
| **4.4** | Able to develop and to use IT innovations. |
| **5.** | Knowledge and abilities in economics and management | **5.1** | Able to evaluate business environment, to forecast trends of business development, to apply skills of business management. |
| **6.** | Ability to integrate knowledge of the sciences of informatics and economics | **6.1** | Able to evaluate data to create business intelligence and data modeling that drive strategic decision-making. |
| **6.2** | Able to integrate technology solutions in alignment with strategic business goals. |
| **6.3** | Able to reduce the risks for business when developing information systems in companies. |
| **7.** | Knowledge and abilities to create complex and undefined information models | **7.1** | Able to develop complex information systems for enterprises and organizations. |
| **7.2** | Able to integrate IT solutions and coordinate them with strategic business aims |
| **8.** | Knowledge of trends, perspectives and limitations of information technologies | **8.1** | Able to evaluate trends in IT development and choose more perspective solutions for business development. |
| **9.** | Ability to initiate an IT project and to lead it | **9.1** | Able to apply innovative and transformative management skills to leading the IT organization. |
| **9.2** | Able to manage risk mitigation for an enterprise IT system. |
| **9.3** | Able to manage an IT project (determine needs for business, to form a project team, a budget, control project activities). |

Detailed correspondences of the programme’s competences with the outcomes, as well as the course units, where certain competences and outcomes are developed, are presented in a subchapter 2.1.

During the analysed period, the learning outcomes and the competences developed have been updated twice. The first update was initiated in 2012, seeking to make it in accordance to the requirements listed in a new editorship of the Law of Science and Studies, article 95 par. 2. Actually, it was a new formulation of study outcomes and competences by applying the methodology, prepared according to a project: “Preparation of a national conception of European Credits and Accumulation System (ECTS): harmonization of credits and preparation of the methodology of study achievements based study programmes (No. VP1-2.2-ŠMM-08-V-01-001)”. The second updating of the programme’s aims and outcomes took place in 2015.

When working on the programme’s outcomes and competences developed, some of the competences were redefined in a more accurate way:

* ability to integrate knowledge from the areas of informatics and economics, as well as management was distinguished, since a decent knowledge in informatics, economics and management is the main distinctive feature of the programme “Business Informatics” among other programmes in the directions of informatics and information systems. As a result, the programmes outcomes related to this competence were also specified;
* a new outcome of the ability to effectively evaluate technological alternatives of information systems was formulated, since the number of technological alternatives has increased immensely in recent years, especially those of mobile systems, and this, unavoidably, had to be included into the contents of the courses taught;
* separately was stressed the importance of the competence to understand the development trends, perspectives and limitations of information technologies, as well as the outcome of the ability to evaluate tendencies in IT development and to choose solutions which are more perspective to business development, since the life cycle of information system solutions is becoming shorter in many areas of applications and specialists of business informatics must possess the competences and abilities to evaluate the perspectives of implemented solutions not only in short but also in midterm view;
* an outcome of the ability to create and set up IT innovations was included, since the importance of innovative decisions in IT is constantly growing;
* outcomes of the ability to initiate an IT project and manage it were specified more clearly by highlighting abilities to evaluate the financial risks of an IT project and taking into account the development of methodologies and means of IT project management;
* the importance of the ability to create precisely undefined information models was highlighted by distinguishing a new competence and specifying the programme’s outcomes accordingly;

Having finished the 2nd cycle study programme “Business Informatics”, the graduates may work in public sector companies, state organizations, business and (or) e-business IT companies, banks, investment companies, stock companies, departments of finance management, consultation companies and other. According to activity profile, the graduates may work as business IT system analysts, designers and creators of IT systems for business companies, IT system administrators, IT project managers, initiate IT system integration and lead processes of integration.

Graduates of the programme may also pursue PhD studies in VU doctoral study programmes of informatics and informatics engineering. Also, they may enter PhD studies in any other Lithuanian or foreign university in the areas of informatics and Informatics engineering. If entry conditions allow, the graduates of “Business Informatics” study programme may pursue PhD studies in the directions of economics or management in any Lithuanian or foreign university.

The qualification obtained in the 2nd cycle study programme “Business Informatics” corresponds to the qualification of VIIth level qualification in Lithuanian Qualification Framework.

### 1.2 Sources where the programme’s aims and outcomes are published

The aim(s) of the programme, learning outcomes, contents of the study programme and entry requirements are published on the internet. They are accessible to future students, academic community or society. The information is published in:

* the official VU website (catalogue of study programmes)[[1]](#footnote-1);
* the official website of the Faculty http://www.khf.vu.lt/studijos/magistranturos-studijos/studiju-programos/verslo-informatika;
* the official VU website designed for entrants[[2]](#footnote-2);
* the official website of AIKOS <http://www.aikos.smm.lt/paieska/_layouts/15/Asw.Aikos.RegisterSearch/ObjectFormResult.aspx?o=PROG&f=Prog&key=4382&pt=of&ctx_sbfr=sbfr>;

Each year, VU publishes a special journal to promote 1st and 2nd cycle studies and to inform the society: “*Kviečia Vilniaus universitetas. Antroji pakopa” (*[*http://www.vu.lt/kviecia/images/Leidiniai/KVIECIA\_VU\_2015\_II\_pakopa.pdf*](http://www.vu.lt/kviecia/images/Leidiniai/KVIECIA_VU_2015_II_pakopa.pdf)*)*. This journal is distributed in various events, schools where special teachers consult on choosing a study programme, on the internet and to those who are interested in studies.

Each year the programme, its aims, learning outcomes are presented in these events:

* Open doors days in VU, during which, KHF administration, lecturers and students give consultations on studies;
* Study fair in LITEXPO *Mokymasis, studijos, karjera,* during which, KHF administration, lecturers and students give consultations on studies;
* VU visits to Lithuanian gymnasiums, during which pupils are presented with programmes of different cycles;
* Some of the modules are available to school children during a VU event called *A Student for One Day.* Here, participants go to actual lectures together with students[[3]](#footnote-3) ;
* The study programme is also presented in a national competition of young mathematicians “Žiburys”, organized by Prienai Gymnasium.

### 1.3 Information on the learning outcomes revision and social partners involvement

Quality controls of the study programme is carried out by the study programme comittee (SPK). SPK meetings are called no less than two times a year before the semester. If needed, the SPK meetings may take place more often. Jovita Nenortaitė, a programme manager of CSCBaltic and a social partner of the study programme, is a permanent member of the SPK. Other social partners are also consulted on various ocassions. The SPK has not determined the regularity of updating the outcomes of study programme: they are done when necessary. During the analyzed period outcomes were updated twice.

### 1.4 Correspondence of learning outcomes to international documents and legal documents of the Republic of Lithuania

SPK formulates the competences developed and the learning outcomes by considering the needs of the social partners, legal documents of the Republic of Lithuania, experience of foreign universities who carry out analogous programmes, and other international documents, e.g. ACM and IEEE Computer Scince Curriculum. Competences were formulated according the recommendations of Quality Assurance Network for Informatics Education (Eqanie). The learning outcomes of the study programme are in accordance with the Description of General Requirements for Master Study Programmes, approved by the order of the Minister of Education and Science of the Republic of Lithuania (3-6-2010, No. V-826), which highlights that a student of the 2nd cycle study programme should be able to carry out research, apply knowledge and employ personal, special and social abilities. Despite the fact that the programme belong to the Information Systems branch, the competences and outcomes of the studies in principle corresponds to the recommendations of the Description of Informatics Study Direction (article 21)

When formulating the outcomes of the study programme, the outcomes of some foreign universities with analogue study programmes were considered: “Viadrina” University in Frankfurt, Helsinki “Metropolia” University of Applied Sciences, University of Pisa, Utrecht University, Vienna Technical University, University of Manheim, Riga Technical University, University of Canberra, Nanyang Technological University in Singapore, Davenport University, a joint programme of University of Lyon and Kharkiv National University of Economics.

### 1.5 The analyzed programme in the context of other study programmes in VU and other universities

In Lithuania, Mykolas Riomeris University carries out the same study programme of “Business Informatics”. In MRU programme the emphasis is placed on the abilities of creating connections between software and consumers, as well as exploatation of software. **In VU programme, the emphasis is placed on the abilities to analyze information flows, analyze and manage IT projects and evaluate business environment.**

A similar programme is carried out in VU and is titled “Business Information Systems”. The main difference between “Business Informatics” and “Business Information Systems” is that the purpose of “Business Information Systems” is to prepare managers working in the field of IT (a Master degree in management is granted), whereas **“Business Informatics” prepares informatics who posses deep knowledge in economics and management**.

### 1.6 Strengths and weaknesses

Summing up the analysis of the aims and outcomes of the study programme, the following strengths and weaknesses might be distinguished:

Strenghts:

* A unique structure of the programme, which integrates development of knowledge and abilities in IS technologies, economics and management allows to prepare specialists who are able to flexibly adjust to fastly changing information technologies.
* A concord between competences developed and the programme’s outcomes is atractive to social partners and business representatives.
* The aims and outcomes of the programme suggest interdisciplinarity and correspond to the contemporary trends of specialist training in the world.

Weaknesses:

* Rapidly changing business environment, the change in demand of specialists with certain qualifications and other developmental factors form the risk of losing the contact with actualities of specialist training.

Actions for improvement:

* More frequent revew of the aims and outcomes of the programme considering the tendences which occur in the market;
* A constant and intensive contact with social partners and other business representatives when evaluating the level and quality of the preparation of specialist
* Strenghtening contacts with the graduates of the programme seeking to evaluate the course of their career and factors which contribute to or disturb the career and rise from the obtained competences.

## Structure of the Programme

### 2.1 Study plan, compliance of the programme structure to legal requirements

*Business Informatics* study programme is interdisciplinary. It is designed and implemented in compliance with *General Requirements for Degree Study Programme of the Second Study Cycle*, approved by the Head of the Ministry of Education and Science of the Republic of Lithuania on June 3, 2010, Order No. V-826, and *Vilnius University Study Programme Regulation*, approved by the Senate Committee of Vilnius University on 21/06/2012, Resolution No. SK-2012-12-4. The compliance with the requirements and actual situation is shown in table 2.

**Table 2**. **Compliance of the Business Informatics study programme to general requirements of the second study cycle**

|  |  |
| --- | --- |
| **Requirements** | **Programme** |
| The scope of a second cycle university study programme, which provides Master degree for the graduates, should be no less than 90 and no more than 120 (study credits). | Meets the requirement  120 credits |
| During each semester no more than 5 course units can be studied. | Meets the requirement  Does not exceed 5 courses per semester |
| Student’s self-study time should comprise no less than 30 % of the scope of each course. | Programme comprises 770 contact hours and 2430 self-study hours for students  Meets the requirement  Self-study time comprises 60%–­75% of the courses |
| No less than 60 study credits should be allocated to subjects of the studied direction;  No course units should be repeated from the first cycle study programme of the same direction. | Meets the requirement  100 credits  All courses are of higher level than Bachelor |
| No more than 30 credits should be allocated for courses of deeper specialization, both determined by the university and chosen by the student. | Meets the requirement.  10 credits |
| The scope of the final thesis project should be no less than 30 credits. | Meets the requirement |

### 2.2 Principles and logic of the composition of the programme

The scope of Business Informatics study programme is 120 credits (2 years). The programme is oriented both to theoretic studies and self-studies of the students. Practical lectures are designated for field inspections of the discussed models and methods, presentation of group and individual works, their defence and critical analysis. Course descriptions (Annex 1) provide individual and group works and projects, which should be prepared on a self-study basis under the supervision of the lecturers. Each student can consult with the lecturer individually according to their needs and abilities. The majority of individual works are defended in a group by using demo equipment and visual presentations (theses, schemes, graphic material).

**In terms of the study field, all course units may be grouped into research, management and information systems course units.**

**The unit of economic and management studies** consists of the following course units: *Financial Risk Management, Intellectual Systems in Financial Markets, Management Accounting Information Systems, Information Systems Project Management and Statistical analysis of Business Environment.* These courses are of economic–managerial content; however, the methods of information systems direction are applied.

**The unit of information systems studies** consists of the following courses units: *Enterprise Information Architecture, Control of Dynamic Objects in Internet, Neural Networks and Neurocomputations, CASE and Information System‘s Engineering, Data Modeling and Retrieval Methods, Multimedia Technologies, Knowledge Bases And Expert Systems, Knowledge Based System Engineering, Intranet Technologies, Groupware Information Technologies and Infrastructure, IT Strategies in Knowledge Society*

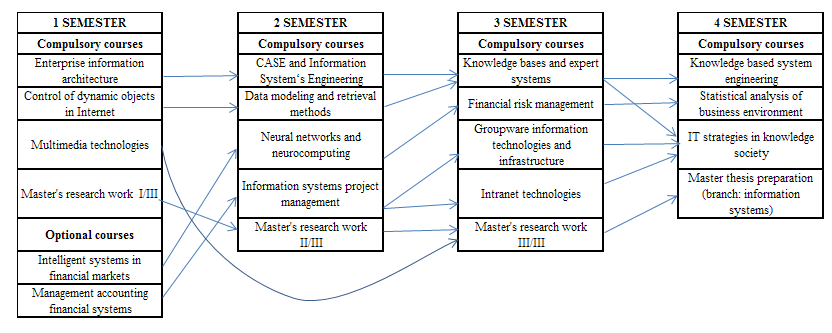
**Plan of *Business Informatics* study programme (Mode of studies: full-time)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(RELATION OF COURSE UNITS**  **(MODULES) WITH COMPETENCES**  **AND LEARNING OUTCOMES DALYKŲ (MODULIŲ) SĄSAJOS SU KOMPETENCIJOMIS IR STUDIJŲ SIEKINIAIS)Kodas** | **Course units (modules)**  **according to groups** | **Credits** | **Total student’s workload** | **Contact hours** | **Self-study hours** | **Study programme competences** | | | | | | | | | | | | | | | | | | | |
| **General competences** | | | | | | **Subject-Specific Competences** | | | | | | | | | | | | | |
| **1.** | | **2.** | | **3.** | | **4.** | | | | **5.** | **6.** | | | **7.** | | **8.** | **9.** | | |
| **Learning outcomes** | | | | | | | | | | | | | | | | | | | |
| **1.1** | **1.2** | **2.1** | **2.2** | **3.1** | **3.2** | **4.1** | **4.2** | **4.3** | **4.4** | **5.1** | **6.1** | **6.2** | **6.3** | **7.1** | **7.2** | **8.1** | **9.1** | **9.2** | **9.3** |
| **1st COURSE** | | **60** | **1600** | **408** | **1192** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **1st SEMESTER** | | **30** | **800** | **208** | **592** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Compulsory courses (modules)** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Enterprise Information Architecture | 5 | 134 | 48 | 86 | x |  | x | x |  |  | x | x |  |  |  |  |  |  |  |  | x | x |  |  |
|  | Control of Dynamic Objects in Internet | 5 | 133 | 48 | 85 | x |  |  |  |  |  | x |  | x | x |  |  |  |  | x |  | x |  |  |  |
|  | Multimedia Technologies | 5 | 133 | 48 | 85 |  |  |  | x |  |  |  | x |  |  |  |  |  |  |  | x | x | x |  |  |
|  | Master’s Research Work I/III | 10 | 267 | 16 | 251 | x | x | x |  | x | x | x |  | x |  |  |  |  |  | x | x | x |  | x |  |
| **Optional courses (modules)** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Intelligent Systems in Financial Markets | 5 | 133 | 48 | 85 | x |  |  |  | x |  |  |  |  |  | x | x | x | x |  |  |  | x |  |  |
|  | Management Accounting Information Systems | 5 | 133 | 48 | 85 |  |  | x | x |  |  |  |  |  |  | x |  |  | x |  |  |  | x | x |  |
| **2nd SEMESTER** | | **30** | **800** | **200** | **600** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Compulsory courses (modules)** | |  |  |  |  | x | x | x | x | x | x | x | x | x | x | x |  | x | x | x | x | x | x | x | x |
|  | Neural Networks and Neurocomputations | 4 | 107 | 48 | 59 | x |  |  | x |  | x |  |  |  | x |  |  | x |  |  |  | x |  |  |  |
|  | Data Modeling and Retrieval Methods | 5 | 133 | 48 | 85 |  | x |  |  | x |  |  |  | x |  | x |  |  |  | x |  | x |  |  |  |
|  | CASE and Information System‘s Engineering | 5 | 133 | 48 | 85 | x |  | x |  |  |  | x | x |  |  |  |  |  |  | x | x | x |  |  |  |
|  | Information Systems Project Management | 4 | 107 | 48 | 59 | x |  |  | x |  |  | x |  |  |  | x |  | x | x |  |  |  | x | x | x |
|  | Master’s Research Work II/III | 12 | 320 | 8 | 312 | x | x | x |  | x | x | x |  | x |  |  |  |  |  | x | x | x |  | x |  |
| **2nd COURSE** | | **60** | **1600** | **344** | **1256** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **3rd SEMESTER** | | **30** | **800** | **200** | **600** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Compulsory courses (modules)** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Knowledge Bases And Expert Systems | 5 | 133 | 48 | 85 | x |  |  | x |  | x |  |  |  | x |  |  | x |  |  |  | x |  |  |  |
|  | Financial Risk Management | 5 | 133 | 48 | 85 |  | x | x |  |  |  | x |  |  |  | x | x | x | x |  |  |  |  | x | x |
|  | Groupware IT and Infrastructure | 6 | 160 | 48 | 112 | x |  | x | x |  |  |  | x |  |  |  |  |  |  | x | x |  |  |  | x |
|  | Intranet Technologies | 6 | 160 | 48 | 112 |  |  |  | x |  |  |  | x |  |  |  |  |  |  |  | x | x | x |  |  |
|  | Master’s Research Work III/III. | 8 | 214 | 8 | 206 | x | x | x |  | x | x | x |  | x |  |  |  |  |  | x | x | x |  | x |  |
| **4th SEMESTER** | | **30** | **800** | **144** | **656** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Compulsory courses (modules))** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Statistical analysis of Business Environment | 5 | 133 | 36 | 97 |  | x |  | x | x | x |  |  |  |  | x | x | x | x |  |  |  | x | x |  |
|  | Knowledge Based System Engineering | 5 | 133 | 48 | 85 |  |  | x |  |  |  | x | x |  | x |  |  |  | x |  |  | x | x |  |  |
|  | IT Strategies in Knowledge Society | 5 | 133 | 48 | 85 | x | x |  |  | x |  |  | x | x |  |  |  |  |  | x | x | x |  |  |  |
|  | Final Master Thesis (: information systems) | 15 | 401 | 12 | 389 | x | x | x |  | x | x | x |  | x |  |  |  | x | x | x | x | x |  | x |  |

**Research activities** begin with the studies of research work. During the first semester Master students choose their scientific advisor and formulate research topic, collect the scientific material for work. Each semester they defend their work before a commission formed by VU KHF Department of Informatics. Master students must prepare a summary and publish their research in at least one scientific conference publication. At the end of the studies a Master’s thesis is to be defended. Requirements for research work are provided in *Guidelines for VU KHF Final Thesis Preparation Procedure* (I. Šarkiūnaitė, D. Krikščiūnienė, R. Simutis. Magistro baigiamojo darbo rengimo tvarka: metodiniai nurodymai. Kaunas: Vilniaus universiteto leidykla, 2007. ISBN: 9789955330110. 42 pp.).

The balance between theoretical courses and scientific research work within entire study period enables students to prepare for independent scientific research work. There are two scientific research work forms. Second, students prepare individual or group projects for different courses, where they apply theoretical knowledge for collection of specific data, analysis and solution of problems. Each project is presented and defended during the seminars in the presence of the lecturer and colleague students, who can also submit questions.

Study programme committee and VU KHF Department of Informatics discuss the issues of the contents of study programme course units and the quality of studies during the meetings. 2 meetings were held in 2015 in order to discuss the issues of the second cycle Business Informatics study programme, which provides Master degree for the graduates. In 06/03/2015 (Department of Informatics, Business Informatics Study Programme Committee protocol No. 1), a discussion regarding the reviews of students (AY 2013-2014, autumn and spring semesters) about the study programme was carried out. Taking the students’ reviews into consideration, the study programme receives positive evaluations; however, there is no bigger number of reviews about separate courses and the lecturers (only 1-2 reviews about a course). It was a proposal to modify the content of *Multimedia Technologies* and *Enterprise Information Architecture* courses.



**Figure 1. Relation of course units of Business Informatics study programme**

During the meeting on 15/04/2015 it was discussed whether course units of the first and second semesters should be transferred to the fourth semester in order to balance the students’ workload. Also, the transfer of *Knowledge Based System Engineering* course from the first semester and *IT Strategies in Knowledge Society course* from the second semesterto the fourth semester was discussed. During the previous experts’ visit a remark was made that team and group work competences are not developed sufficiently. Remarks were taken into account by modifying *Groupware Information Technologies and Infrastructure* and *Information Systems Project Management.*

### 2.3 Study methods, ratio of contact work to individual work

*Business Informatics* study programme applies various teaching methods: traditional lectures, seminars and discussions, individual and group projects, guest business representatives’ lectures (representatives from such companies as CSC Baltic, DevBridge, etc.), research papers writing, presentations at the conferences, business situations modelling. Students have opportunities to study abroad under Erasmus exchange programme.

It might be claimed on the basis of the study programme structure and relation matrix of study outcomes that every result of this study programme is to be achieved by applying complex study methods with regard to both practical and theoretical aspects. Applied methods, their nature and the content of specific course outcomes (results) is enough to achieve the study programme results.

Taking into account descriptions of the study programme provided in Annex No. 1, it might be claimed that the content of the studies enable acquisition of skills indicated by programme outcomes.

Results of specific courses, their achievement methods and evaluation methods of students’ achievements are provided into greater detail in every course description of the programme (see Annex No. 1 of this report). Consultations are provided under the student’s initiative during the lecturers contact hours at the department (at least 2 hours).

**Table 3. Ratio of contact hours to individual work hours**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Compulsory courses (modules)** | | | **Optional courses (modules)** | | |
| **Semester** | **Contact study hours** | **Individual work hours** | **Total** | **Contact study hours** | **Individual work hours** | **Total** |
| **1** | 160 | 507 | 667 | 48 | 85 | 133 |
| **2** | 200 | 600 | 800 | - | - | - |
| **3** | 200 | 600 | 800 | - | - | - |
| **4** | 144 | 656 | 800 | - | - | - |
| **Overall** | 704 | 2363 | 3067 | 48 | 85 | 133 |

### 2.4. Requirements for students’ final theses

Programme graduate’s knowledge, skills and competences, which are indicated in the programme description, are examined and evaluated publicly during the defence of the final thesis. The public defence of the final thesis aims at enabling students to prove that they have achieved the goals of the studies, acquired the intended knowledge and skills, and thus determine whether s/he is worthy of the academic MA qualification in the field of information systems, area of physical sciences.

Final theses are prepared according to the *Description of the Procedure for Preparation, Defence and Storage of Vilnius University Students’ Final Theses* (approved by the order No. R-446 of Vilnius University vice-rector for studies on 17 November 2015). These documents as well as any other information in connection with final theses and research papers are published at VU KHF intranet website <ftp://ftp.vukhf.lt/AulaY/_Informatikos_kat/_Studentams/>. Assessment criteria for final thesis, aim, tasks and scope of thesis are indicated in methodological requirements[[4]](#footnote-4). This publication provides the essential guidelines for working up a thesis according to the general methodology for research, students learn to carry out scientific research, think critically, constructively and creatively.

In the thesis, the student must demonstrate theoretical and practical knowledge in the fields of informatics, mathematics, optimisation methods, information systems, business process analysis, abilities to analyse information flows, determine information flow channels that are critical to the business success, evaluate technological alternatives of the systems, analyse data necessary to create business analytics, model the data necessary for adoption of strategic business solutions, integrate IT solutions and combine them with strategic business goals.

In order to receive an MA degree, students should reveal their abilities to set requirements for information systems, evaluate financial risks of IT project implementation, create and install complex information systems, demonstrate skills in carrying out and summarising research. The final thesis is defended during a public meeting of study directions qualification commission (the commission is approved according to the procedure indicated in paragraph 2.8. of the *Description of the Procedure for Preparation, Defence and Storage of Vilnius University Students’ Final Theses)*.

The topic for the master thesis is selected in the beginning of the 1st semester by the student from the list of possible topics for a thesis in the Department of Informatics; this list reflects the scientific advisers’ areas of research or a student can propose his/her own topic and arrange it with his/her scientific adviser. There areas of scientific research in VU KHF, Department of Informatics, are as follows:

* Research of the stages of knowledge based information systems engineering.
* Analysis of artificial intellect systems. Application of intellectual methods to financial market analysis. Financial risk research.
* Applied research of e-commerce, e-business, e-government and e-learning.
* Recognition of the Lithuanian spoken language.

### 2.5. Strengths and weaknesses

Strengths:

* The programme’s strength lies in its unique interdisciplinary structure encompassing both the disciplines of informatics and economics.
* Well-balanced arrangement of various fields courses within the entire study period;
* Evenly distributed workload, a sufficient amount of time intended for the preparation of the thesis.

Weaknesses:

* Interdisciplinary structure of the programme and limited number of credits defined by regulatory documents is a great challenge for programme creators as it is not easy to acquired skills both in information systems sciences and economic and management sciences.

Actions for improvement:

* Due to rapid development of hardware and software it is necessary to use modern software (or update the old one) in the study process as soon as possible. This would enable acquisition of the most advanced methods in the field of Business Informatics, learn about the latest scientific research findings, which will definitely be necessary for practical activities in the today’s job market.

## Staff

### 3.1. The composition of the staff and its compliance with the requirements of legislation

The subjects of second cycle Business Informatics programme (which provides Master degree) are taught by lecturers that meet the VU scholarly and pedagogical qualification requirements. During the analysed period, the favourable conditions needed to reach the aim and results of the study programme are provided by a minor turnover of the high qualification lecturers working in the programme. The Business Informatics study programme is administrated by 6 professors, 2 associate professors, 1 lecturer-doctor and 1 lecturer (Appendix x). The summarised data is provided in table 4:

**Table 4. The composition of the programme’s academic staff according to the academic title and scientific degree as well as their occupation in the Business Informatics study programme (according to the data of 2015/2016 study plan)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Academic title, scientific degree** | **No. of persons** | **The scope of teaching in programme\*** | |
| **In credits** | **In percent** |
| prof. dr. habil., prof. dr. | 6 | 55 | 68,75 |
| Assoc. Prof. dr. | 2 | 14 | 17,5 |
| Lecturer dr. | 1 | 6 | 7,5 |
| Lecturer | 1 | 5 | 6,25 |
| **Total:** | 10 | 80 | 100 |

The composition of the lecturers complies with the requirements of legislation (table 5).

**Table 5. Business Informatics programme lecturers’ compliance with the general requirements for second cycle and the regulation of VU study programmes**

|  |  |
| --- | --- |
| **Requirement** | **In programme** |
| No less than 80 % of all the lecturers of the programme should have scientific degree | Meets the requirement -90 % |
| All the lecturers who deliver lectures should have a scientific degree (the regulation of VU study programme) | Meets the requirement - 100,0% |
| No less than 60 % (or 40 % when study programme is oriented towards the practical activities) of lecturers’ direction of scholarly activities should comply with the subjects that they deliver. | Meets the requirement - 80,0% |
| No less than 20 % of the scope of study direction subjects should be delivered by the professors of Vilnius University (the regulation of VU study programme) | Meets the requirement - 62,5% |
| The final thesis is defended before the scientific board. The Chairperson of the commission should be a representative from different educational and study institution than the one that MA studies were executed. | Meets the requirement |

The Department of Informatics, which administers the physical science studies in the faculty, has constantly been strengthening its potential. The faculty employs 14 high qualification lecturers: 6 professors, 3 associate professors, 4 lecturers-doctors, 1 lecturer. Currently, the faculty has 10 Ph.D. students. Ph.D. dissertations defended in the faculty: on 2010 – 1, on 2011 – 1, on 2013 – 2, 2014 – 2. The structural turnover of programme lecturers according to their positions in 2010-2015 is provided in table 6:

**Table 6. The structure of Business Informatics study programme lecturers according to their positions in 2011–2015.**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Academic year**  **Position** | **2011** | | **2012** | | **2013** | | **2014** | | **2015** | |
| **people** | **%** | **people** | **%** | **people** | **%** | **people** | **%** | **people** | **%** |
| Professors | 6 | 54,55 | 6 | 54,55 | 7 | 63,64 | 6 | 60,0 | 6 | 60,0 |
| Assoc. prof. | 4 | 36,36 | 3 | 27,27 | 3 | 27,27 | 3 | 30,0 | 2 | 20,0 |
| Lecturers /  doctors | 1 | 9,09 | 2 | 18,18 | 1 | 9,09 | 1 | 10,0 | 1 | 10,0 |
| Lecturers | 0 | 0,0 | 0 | 0,0 | 0 | 0.0 | 0 | 0,0 | 1 | 10,0 |
| **Total:** | 11 | 100 | 11 | 100 | 11 | 100 | 10 | 100 | 10 | 100 |

The lecturers are selected for the courses to deliver according to their professional orientation, field of scholarly activity and publications. Their subject qualification, competence and orientation of scholarly interests (scientific degree, academic title, the publication of educational methodological material) are also taken into consideration. The employment of lecturers is performed according to the Vilnius University temporal regulations on pedagogical and research staff performance assessment and on the order of organizing open competitions**[[5]](#footnote-5).** The determined minimal requirements are sufficient and appropriate to occupy the position of professor, associate professor, and lecturer. In order to determine whether pedagogical and scholarly staff complies with the requirements of the position, the performance assessment is conducted every five years.

Curricula vitae, lists of scholarly publications, project activities and professional training (Appendices 3.1, 3.2, 3.3 and 3.4) of programme lecturers allows to successfully achieve the aim and objectives of study programme as well as grounds the lecturers’ capability to educate qualified specialists.

Each member of the department’s pedagogical staff, as well as Ph.D. students supervises approximately 2-4 BA and MA theses. The scientific advisors provide the topics according to their scholarly interests and it ensures the sufficient variety of topics.

### 3.2. Lecturers’ employment, assessment and turnover

*Regulations on the Performance Assessment of the Pedagogical and Research Staff and on the Procedure of Organizing Open Competitions at Vilnius University*, approved by the Senate Committee of Vilnius University on the 17th of December, 2013. Protocol No. S-2013-8-2 sets qualification requirements of the performance assessment and order of organizing competitions for the pedagogical and research staff. Scholarly staff of the university (excluding guest lecturers) are appointed to the primary position or promoted upon winning an open competition. Open competition for filling positions is called for by Order of the Rector. After winning the competition the work contract is signed with the lecturer and his/her employment period is five years. The member of the pedagogical or research staff, who occupies the primary position upon winning the competition, signs a non-terminated work contract for the second time in a row to occupy the same position.

In order to determine whether the qualification of research and pedagogical staff complies with the requirements of the occupied position, the performance assessment is conducted every five years. When conducting the performance assessment, the number of the published articles, participation in conferences, supervising of scholarly research, delivery of lectures, preparation of methodical material, participation in Ph.D. processes, supervising students’ scholarly work, expert, organizational and other scholarly activity are being evaluated. Moreover, students’ reviews about the work of the assessed lecturer are also taken into consideration. Satisfaction with the studies, subject (module) survey system, which is currently being developed, allows taking a more objective look at the students’ opinion. Special performance assessment of the lecturer or researcher can be declared by the grounded submission of the head of the branch. A special performance assessment can be declared no less than one year after the worker has occupied a certain position.

The turnover of lecturers in 2010 – 2015 is presented in table 7. The basis is formed by the permanent staff.

**Table 7. Turnover of lecturers in 2010-2015**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Academic title** | **Surname** | **Name** | **Subject** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** |
| Prof. | Butleris | Rimantas | Data Modeling and Retrieval Methods | + | + | + | + | + | + |
| Information Systems Project Management |  |  |  | + | + | + |
| Lecturer dr. | Dilijonas | Darius | Groupware Information Technologies and Infrastructure |  |  |  | + | + | + |
| Prof. | Garšva | Gintautas | Multimedia Technologies | + | + | + | + | + | + |
| Control of Dynamic Objects in Internet | + | + | + | + | + |  |
| Intranet Technologies | + | + | + | + | + | + |
| Prof. | Girdzijauskas | Stasys | Financial Risk Management | + | + | + | + |  |  |
| Prof. | Gudas | Saulius | Enterprise Information Architecture | + | + | + | + | + | + |
| Knowledge Based System Engineering |  | + | + | + | + | + |
| Prof.dr. | Krikščiūnienė | Dalia | Management Accounting Information Systems | + | + | + | + | + | + |
| Prof.dr. | Lopata | Audrius | Enterprise Information Architecture |  |  | + | + | + | + |
| CASE and Information System‘s Engineering | + | + | + | + | + | + |
| IT Strategies in Knowledge Society |  |  |  | + | + | + |
| Assoc. Prof. | Masteika | Saulius | Intellectual Systems in Financial Markets | + | + | + | + | + | + |
| Assoc. Prof. | Rudžionis | Vytautas | Neural Networks and Neurocomputations |  |  |  |  |  | + |
| Knowledge Bases and Expert Systems |  |  |  |  |  | + |
| Prof. | Sakalauskas | Virgilijus | Statistical analysis of Business Enviroment | + | + | + | + | + | + |
| Financial Risk Management |  |  |  |  | + | + |
| Prof. | Simutis | Rimvydas | Intellectual Systems in Financial Markets | + | + | + | + | + | + |
| Neural Networks and Neurocomputations | + | + | + | + | + | + |
| Knowledge Bases And Expert Systems | + | + | + | + | + | + |
| Assoc. Prof. | Telešius | Eugenijus | Information Systems Project Management | + | + | + |  |  |  |
| Groupware Information Technologies and Infrastructure | + | + | + |  |  |  |
| Lecturerr | Tribandis | Darius | Control of Dynamic Objects in Internet |  |  |  |  |  | + |

The majority of lecturers have more than 5 years of pedagogical experience. It is aimed to invite such guest lecturers for one-off lectures who have practical experience working in various business and public sector organizations.

During the last expert visit the attention was drawn to the fact that the students of Business Informatics have too many lectures that are being delivered by the lecturers, whose main workplace is not KHF and it was recommended to employ more lecturers, whose main workplace would be KHF, thus inviting promising Ph.D. students that are going to defend their Ph.D. dissertations.

It needs to be emphasized that the number of lecturers, whose main workplace is not KHF, dropped significantly in 2010 – 2015. Due to various circumstances the visiting lecturer prof. Rimvydas Simutis and assoc. prof. Eugenijus Telešius are no longer delivering the lectures. The courses that have been delivered by them are now appointed to the workers of the department. The programme has employed former Ph.D. students of the department assoc. prof. Saulius Masteika and lecturer dr. Darius Dilijonas. Currently, there are only three lecturers in the programme, whose main workplace is not VU KHF. The courses delivered by them constitute 15 credits.

The average age of lecturers that participate in the Business Informatics programme is 50 years. The distribution of lecturers according to the age groups is presented in Table 8:

**Table 8. The distribution of lecturers according to their age in 2015**

|  |  |
| --- | --- |
| **Age group** | **Structure of the academic staff according to their age groups, %** |
| 25­-34 | 10,00% |
| 35-44 | 30,00% |
| 45-54 | 10,00% |
| 55-64 | 50,00% |
| **Total:** | **100%** |

Concluding it needs to be stated that during the analysed period the lecturer’s staff was balanced from the age perspective: the core of the programme was composed of experienced, mature lecturers, who collaborate with a great number of younger lecturers. However, in perspective one can make an assumption that in next five years the majority of lecturers will reach the retirement age, thus the younger specialists have to be prepared. The main potential is seven Ph.D. students of the department. At least five of the Ph.D. students have chosen a topic of their thesis, which is related to the courses taught in Business Informatics study programme. It is presumptive that within the period of three years, at least 2 Ph.D. students and within the period of five years at least 3 Ph.D. students will be prepared to deliver the lectures in the Business Informatics study programme. It is aimed to invite lecturers, who have practical knowledge. An example of such a person is lecturer Darius Tribandis, who spent a lot of years in business, managing a company of information services and started working in the university in 2015.

### 3.3. Workload of lecurers

A detailed list of lecturers, subjects and auditoria hours in Business Informatics programme is provided in table 9. It ought to be emphasized that the majority of lecturers also deliver lectures in Business Informatics BA programme.

**Table 9. Summary of lecturers’ workload**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Surname** | **Name** | **Subject lectured** | **Workload in the study programme in question (Auditiorial)** | **Workload in other study programmes (Auditorial)** | **Overall working hours (Auditorial)** |
| Butleris | Rimantas | Data Modeling and Retrieval Methods, Information Systems Project Management | 96 | 64 | 160 |
| Dilijonas | Darius | Groupware Information Technologies and Infrastructure | 48 | 288 | 336 |
| Garšva | Gintautas | Multimedia Technologies, Intranet Technologies | 96 | 208 | 304 |
| Gudas | Saulius | Enterprise Information Architecture, Knowledge Based System Engineering | 64 | 128 | 192 |
| Krikščiūnienė | Dalia | Management Accounting Information Systems | 48 | 304 | 352 |
| Lopata | Audrius | Enterprise Information Architecture, CASE and Information System‘s Engineering, IT Strategies in Knowledge Society | 128 | 412 | 540 |
| Masteika | Saulius | Intellectual Systems in Financial Markets | 48 | 240 | 288 |
| Rudžionis | Vytautas | Neural Networks and Neurocomputations, Knowledge Bases and Expert Systems | 96 | 320 | 416 |
| Sakalauskas | Virgilijus | Financial Risk Management,  Statistical analysis of Business Enviroment | 84 | 272 | 356 |
| Tribandis | Darius | Control of Dynamic Objects in Internet | 48 | 64 | 112 |

### 3.4. Staff Competency and their Professional Improvement

All the lecturers who deliver courses in the programme are qualified specialists. All of them have been engaged in the selected scholarly field of information systems for more than a year. All the lecturers (especially professors, associate professors, Ph.Ds.) are actively involved in research (Appendix 3). The area of their interests is closely related to the topic of master thesis they supervise and courses they deliver. The summary of research publications that were published by the staff of the programme within the 5 last years is presented in table 10.

**Table 10. Summary of lecturers’ scholarly researches in 2010-2015**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pedagogic and (or) scientific degree** | **In the publications from the main list of Institute for Scientific Information (ISI)** | **In other publications referred to in data bases of Institute for Scientific Information (ISI) [Proceedings etc.]** | **In publication referred to in International data bases** | **In the material of Conference reports** | **Other periodical publications, one-off collections of articles etc.** | **Monographs** | **Book (chapters)/ coursebooks, other methodical material** | **Other** |
| **Professors** | 47 | 95 | 21 | 39 | 20 | 3 | 9 | 18 |
| **Associate professors** | 18 | 14 | 1 | 5 | 2 | - | 1 | 2 |
| **Lecturers Ph.D.** | 1 | - | - | - | 2 | - | - | - |
| **Total:** | 66 | 109 | 22 | 44 | 24 | 3 | 10 | 20 |

The summary of lecturers’ project activity (the number of undertaken projects) is presented in table 11.

The Department of Informatics works in close collaboration with their social partners. This collaboration allows improving the quality of studies. The number of social partners is constantly growing. Their contacts, which allow students to consult about career possibilities, are provided on [www.khf.vu.lt](http://www.khf.vu.lt) website. Especially strong ties of collaboration are with UAB “Blue Solutions”, “Optimus CRM”, UAB “Alnos biuro sistemos’, UAB “Proringas”, UAB “NoMagic”, CSC Baltic, UAB “Internovus”, UAB “Inida”, UAB “Bitė GSM”. The managers and employees of these companies are invited to participate in department meetings, especially when the list of themes of final theses is discussed, internship positions are offered for students of undergraduate study programmes. The representatives of social partners deliver reports (seminars), lectures, receive invitations to defences of final thesis, are included into the scientific boards, which allows to improve the integrity of business and science as well as improve the general quality of studies.

**Table 11.**  **The summary of lecturers’ project activity in 2010-2015 (the number of projects, which were undertaken during the abovementioned period)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pedagogic and (or) scientific degree** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** |
| **Professors** | 1 | 2 | 2 | 2 |  | 1 |
| **Associate professors** |  | 1 |  | 2 |  |  |
| **Ph.D.** | 1 | 4 |  | 2 |  | 1 |
| **Total:** | 2 | 7 | 2 | 6 | 0 | 2 |

Vilnius University approved regulations of the employees’ qualification improvement (2008), which state that the annual scope of workers’ qualification regulation is no less than 5 days. In this way the lecturers have to systematically and consistently plan their qualification development and improvement every year. The report of qualification improvement during the employment period is provided to the Committee of Faculty’s Performance Assessment that evaluates whether the qualification improvement is sufficient. The scope of qualification improvement is one of the factors, which influence whether the lecturers’ employment period is extended.

The faculty organizes seminars and courses of pedagogical qualification improvement that can be attended by the lecturers from Business Informatics programme. The attendance is free for faculty lecturers, since the faculty covers all the necessary expenses. The faculty organizes inter-university conference of MA and Ph.D. students, called “Information Technologies Mag&Dok”. It is an annual conference, which was organized for the 20th time in 2014. It is organized by Vilnius University Kaunas Faculty of Humanities, Kaunas University of Technology and Vytautas Magnus University at the rotational basis.

### 3.5. Academic Exchange Visits of the Staff

Qualification is improved in various ways: during theoretical and practical seminars, language courses, trainings, traineeships in Lithuania and abroad. During the analyzed period, the majority of academic exchanges and traineeships were conducted via Erasmus exchange programme. The summary of academic exchange and traineeships of lecturers is presented in table 12.

**Table 12. The summary of lecturers’ academic exchange in 2010-2015 (the number of academic visits or traineeships is presented by year)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pedagogical and (or) scientific degree** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** |
| **Professors** | 6 | 2 | 7 | 5 | 4 | 5 |
| **Associate professors** | 1 | 3 | 4 |  | 2 | 1 |
| **Ph.D.** | 2 |  | 2 | 2 |  |  |
| **Total:** | 9 | 5 | 13 | 7 | 6 | 6 |

The lecturers submit their applications to VU International Programme and Communication department and participate in Erasmus programme competitions. The candidates for traineeships are selected by a general order. The traineeships are funded by the faculty’s resources, which are allocated to secondments or by the resources from university fund for Erasmus exchange.

The ground for lecturers’ improvement is an individual initiative of scholars, which is related to purposeful traineeships, seminars, etc. that correspond to their scholarly interests. Material and infrastructure conditions required for its development are created as well. They include the provision of information on traineeships and scholarships offered by various programmes, conferences, seminars and, when it is possible, it’s funding. Lecturers also have a possibility to use an additional financial support, i.e., Research Council of Lithuania together with Contemporary Art Centre constantly announce various projects and competitions, which can be attended by the lecturers. For instance, professor V. Sakalauskas, prof. D. Krikščiūnienė and prof. A. Lopata have attended some international conferences using the funds of Research Council of Lithuania.

This information is provided to the VU KHF lecturers by the vice-dean of research. The department staffs are also participating in the Academic Institution Networking and the work of international academic organizations. For instance, prof. V. Sakalauskas is a member of Machine Intelligence Research Labs organisation, prof. D. Krikščiūnienė is a chief editor of *the International Journal of Marketing Principles and Practices* and associate editor of *International Journal of Computer Information Systems*, prof. R. Butleris is a representative of ERCIS – European Research Center for Information Systems organization, doc. V. Rudžionis is an expert of ELSNET (European Network of Excellence in Human Language Technologies), prof. G. Garšva is an expert of ECDL. This enables the lecturers to embrace all the opportunities offered by these institutions to improve their professional training.

During the analyzed period, foreign guest lecturers weren’t specifically invited to deliver lecturers to Business Informatics students, however, each year 2-3 foreign lecturers come to VU KHF Department of Informatics via the Erasmus exchange programme and deliver lectures. Business Informatics MA students are always welcome at these lectures.

### 3.6. Ratio of programme lecturers to studying students

The number of programme lecturers remained stable during the analysed period. The number of students decreased in 2012 and remained relatively stable in the subsequent years. The number of lecturers to the number of admitted students ratio according to the year of admission (table 13) is respectively as follows: 2010 – 1,10, 2011 – 0,65, 2012 – 1,00, 2013 – 1,00, 2014 – 0,63 and 2015 – 0,91. The number of lecturers to the number of admitted students ratio average is 0,88 over the analysed period.

**Table 13. Number of lecturers to the number of graduates’ ratio according to the year of admission**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Admission year** | **Number of lecturers** | **Plan** | | | **Number of lecturers/ plan’s ratio** | **Number of applications** | | | **Number of lecturers/ plan’s ratio** | **Admitted** | | | **Number of lecturers/ plan’s ratio** |
| **Funded** | **Non-funded** | **Total** | **Funded** | **Non-funded** | **Total** | **Funded** | **Non-funded** | **Total** |
| 2010 | 11 | 13 | 2 | 15 | 0,73 | 15 | 0 | 15 | 0,73 | 10 | 0 | 10 | 1,10 |
| 2011 | 11 | 17 | 2 | 19 | 0,58 | 19 | 0 | 19 | 0,58 | 17 | 0 | 17 | 0,65 |
| 2012 | 11 | 15 | 1 | 16 | 0,69 | 11 | 0 | 11 | 1,00 | 11 | 0 | 11 | 1,00 |
| 2013 | 11 | 11 | 1 | 12 | 0,92 | 17 | 0 | 17 | 0,65 | 11 | 0 | 11 | 1,00 |
| 2014 | 10 | 11 | 1 | 12 | 0,83 | 19 | 0 | 19 | 0,53 | 16 | 0 | 16 | 0,63 |
| 2015 | 10 | 11 | 2 | 13 | 0,77 | 12 | 0 | 12 | 0,83 | 11 | 0 | 11 | 0,91 |
| Average: | | | | | 0,75 | Average: | | | 0,72 | Average: | | | 0,88 |

The number of lecturers to the number of graduates ratio according to the year of graduation is respectively as follows: in 2010 – 1,38, 2011 – 1,1, 2012 – 1,57, 2013 – 1,0, 2014 – 1,25. The average of the ratio is 1,26 over the five-year period.

To sum up, it might be stated that the number of lecturers and students is quite satisfying: each programme professor or associate professor supervises 1-2 MA students and delivers 1-2 different courses. However, if the number of MA students will decrease, this ratio may become unsatisfactory.

### 3.7. Strengths and weaknesses

Strengths:

* The programme has a very qualified staff: the competence of lecturers significantly exceeds minimal requirements for the MA programme. This enables successful implementation of the programme goals and objectives.
* While carrying out BA and MA Business Informatics study programme, a proper ratio of the number of programme lecturers to the number of students was maintained during the various forms of activities. Rational ratio of students preparing final theses to their scientific advisors is the following: each lecturer of the department supervises an average of 2-4 final theses. It ensures a sufficient variety of topics and allows lecturers to devote enough time for final theses.
* The majority of lecturers are permanent staff, which positively affects the study process.
* All lecturers are actively engaged in a scientific field. Their research work topics are closely related with the topics of final theses and their delivered courses. Participation in projects raises lecturers’ qualification.
* Lecturers carry out organisational and educational activities at university and public institutions both in Lithuania and abroad. Activity results are usually discussed with students during the study time. Lecturers have a great experience in international cooperation in the field of science and studies.
* All lecturers and students may ask the help from the technical staff.
* Each year at least one Ph.D. student is admitted.

Weaknesses:

* The majority of programme lecturers are of senior age, which may have negative consequences in the future.
* There is a risk that without carrying out the BA study programme difficulties in maintaining proper lecturers/students ratio may be caused.

Actions for improvement:

* To include more Ph.D. students into the carrying out of the Business Informatics study programme (e.g., laboratory classes), thus putting more efforts into relating the topics of Ph.D. thesis with the topics of Business informatics MA final theses.
* Study programme committee must try to create a system, which would encourage the lecturers to intensify the preparation of methodological measures for the programme, teaching books and other literature.

## Material Resources

### [4.1. Premises and the number of workplaces](#_Toc329713669)

BIM study programme is usually carried out in classrooms no. 8, 2, 10, J. Jablonskis auditorium, AVL1, computer classes no. 4, 3, 2, 1. These premises contain sufficient number of workplaces for the implementation of the study programme. All of the mentioned classrooms are equipped with multimedia or requisites for demonstration. Detailed list of the premises is presented in the table below.

**Table 14. Classrooms used most often for lectures**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Classroom no. (or title)** | **Address** | **Area, m2** | **Number of workplaces** | **Equipment** |
| Auditorium no. 2 | Muitinės st. 8 | 42,71 | 45 | Multimedia, computer, audio software |
| Auditorium no. 8 | Naugardo st. 2 | 45,36 | 24 | Multimedia, computer, audio software |
| Auditorium no. 10 | Muitinės st. 14 | 65,54 | 36 | Multimedia, computer |
| J. Jablonskis auditorium | Muitinės st. 14 | 80,24 | 84 | Multimedia, computer |
| AVL-1 (laboratory) | Muitinės st. 6A | 51,26 | 24 | Multimedia, a monitor, equipment for recording and editing audiovisual material, 24 computerized workplaces. Cabins for simultaneous translation. Distant video broadcasting equipment. Interactive board. Air conditioning. |
| 1st computer classroom | Naugardo st. 2 | 43,39 | 20 | Equipment for demonstration, 20 computerized work places. |
| 2nd computer classroom | Naugardo st. 2 | 60,30 | 30 | Equipment for demonstration, 30 computerized workplaces, air conditioning. |
| 3rd computer classroom | Naugardo st. 2 | 48,33 | 20 | Interactive screen, 20 computerized workplaces, head-phones, loudspeakers, air conditioning. |
| 4th computer classroom | Naugardo st. 2 | 29,62 | 15 | Equipment for demonstration, 15 computerized wok-places, air conditioning. |

* The number of workplaces for lecturers where they can prepare for lectures and consult students is sufficient. 88 per cent of the lecturing staff in BIM study programme has the workplaces where they can prepare for lectures and consult students. Other lecturers welcome and consult students in any available auditorium at that time. In table 17 it is mentioned that AVL-1 in this case is used as an auditorium with computerized workplaces. Some changes in the Faculty’s material resources are not directly connected with the study programme *Business Information*, though these changes do influence the overall improvement of the programme’s execution: the implemented project “Renovation of Vilnius University Kaunas Faculty of Humanities Premise in Muitinės st. 8” (VP3-3.4-ŪM-03-V-02-015). Energetic renovation of premises in Muitinės st. 6, 6A and 8 was carried out for 2.318.697,00 Lt. The works were funded based on 2007-2013 strategy for EU structural funding utilisation and Cohesion Promoting Actions Programme. This premise contains 6 additional auditoriums.
* In the Autumn of 2014 the Faculty’s library has been moved to newly equipped modern premises (Muitinės st. 18).
* In 2014 computer class no. 3 was completely renovated. 20 new computerized work places were prepared, in 2015 new interactive board was added to the class.
* In 2015, a new Audiovisual lab (AVL-2) was opened containing 25 computerized work places.

### 4.2. Equipment for studies

At the moment the Faculty contains 150 computers for students. All the computer classrooms are connected to a unified Faculty’s network. Computer classrooms are open Monday to Friday 8:00 a.m. – 8:15 p.m., Saturday 9:00 a.m. – 6:00 p.m. Each student has a unique login and a password for accessing the Faculty’s computer network. If the classroom is available (according to the official schedule), this time is devoted to the students’ individual work. Throughout the semester, 53 academic hours are devoted to the students’ individual work in the computerized classrooms on their spare time, throughout the week – 3,3 academic hours for each student.

The Faculty possesses an FTP server, WWW server and AX Dynamics server. The latter is devoted to management accounting IS software. Prof. Dr. D. Krikščiūnienė is a partner for this product in Microsoft. Also, this server contains material for distant learning. Students and lecturers utilize a unified VU e-mail system, E. identity system, VU Information system. If needed, students can connect to VU KFH software remotely (e.g. from home) via VPN.

The Faculty’s network server maintains the whole computer network of the Faculty. FTP server (<ftp://ftp.khf.vu.lt/>) is used to store lecturers’ teaching material and to provide it to students via Internet. WWW server is mainly used to tresent lectures schedule. The Faculty uses ITTC data centre service for the Faculty web page, scientific journals and conferences (Lith: <http://www.khf.vu.lt/> and En: <http://www.khf.vu.lt/en/>). It provides scientific and academic information about the Faculty and all the activities. Internet is also accessible from all VU KFH premises via wireless Internet connection (Wi-Fi). Wireless network hotspots for connection of personal equipment to the VU KFH network cover 70% of the faculty rooms and other spaces (the connection is not available in certain spots, the quality of the connection suffers due to the specific architecture of the buildings, i.e. thick walls of the premises).

VU is a member of MSDN Academic Alliance (MSDNAA). This allows the members to legally use all newest Microsoft software releases in the study process.

In the study process of *Business Informatics* Master study programme, a specific legal software is used: *MagicDraw UML Enterprise Edition Version 18*; *powerSIM Studio Base*; *Metatrader4* and *Metatrader5*; *CLIPS*; *CORVID*; *ES Builder*; *MatLab R2014b su DFALL, FLALL, NNALL, STALL* with additional tools; *Fuzzy Toolbox*; *Viscovery SOMine6*; *OANDA* *trading platform*; *DNB Trade platform*; *NNSYSID toolbox*; *Statistica 12.6*; *ADOBE Creative Suite 5 Master Collection*; *MathCad12*; *Marketing plan Pro*; *Microsoft Dynamic Ax*; *Microsoft Expression Web*; *Net beans*; Online software: *Market Watch Virtual Stock Exchange*; *Cesim*; *Sugar CRM*; *Comindwork*; *MS Virtual Academy* (online teaching material). Open software *QGIS*.

During the years 2011–2014, the Faculty allocated ~43421 EUR to software, ~15380 EUR to computer technical equipment, communication tools and copiers. The Faculty spent ~2232 Eur to software and licencing. In total, during the years 2011-2014, the Faculty spent 61033 EUR for computer equipment.

### 4.3. Methodical resources

Library resources are constantly supplemented by new releases necessary for the implementation of the study programmes. They are purchased using the Faculty’s funds. During the years 2010-2015, The Faculty spent 56214 EUR for new books and subscription of periodical journals. This is by 1,46 times more than during the previous assessment period (during the years 2006-2009, the sum was 38574 EUR).

These expences depend on the number of books ordered by lecturers. The table 15 presents distribution of expences for new purchases, journal subscriptions according to years. The allocated funds increase (except 2013).

**Table 15. Funds for methodical resources, EUR**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **2010** | **2011** | **2012** | **2013** | **2014** |
| 44567 | 2477,98 | 4482,45 | - | 8688 |

Lecturers constantly follow the latest information on specific publications from all over the world, discuss the most relevant publications for the studies and order educational and methodical literature via the library. The library presents the departments with catalogues of newly published books and lists of newly received books. There are other means employed to solve the problem of special literature:

The department have accumulated own specialised library that is being constantly supplemented (books from foreign countries, given by lecturers).

Under the agreement with Kaunas University of Technology (KTU), the students of VU KFH have access to the KTU library resources. Moreover, the students use the resources of Kaunas County Public Library;

During the individual work activities, students can use the national e-library services from all workstations in computer classrooms, library reading room and remote places (e.g. home) via VPN service. Students of BIM study programme may find a lot of useful information in the library of VU database. Studies-related information can be found in the following databases subscribed by VU: Academic Search Complete (EBSCO); ACM Digital Library; Annual Reviews; Business Source Complete (EBSCO); Central & Eastern European Academic Source (EBSCO); Cochrane Library; Computers & Applied Sciences Complete (EBSCO); eBook Collection (EBSCOhost); Ebrary Academic Complete; EconLit with Full Text (EBSCO); EDP Sciences; Emerald Management eJournals Collection; IEEE/IEL; Infolex: Legislation; JSTOR; Kaunas University of Technology (KTU); Vytautas Magnus University (VDU) e-books; Library, Information Science & Technology Abstracts (EBSCO); Oxford Reference Online; Oxford University Press Journals Collection; Regional Business News (EBSCO); Sage Publications: Sage Journals Online; Science Online; SIAM journals; Springer LINK; Taylor&Francis; Vilnius Gediminas Technical University (VGTU) e- book; Web of Science; Wiley Online Library and other. The complete list of scientific databases subscribed by VU may be found here: <http://www.mb.vu.lt/prenumeruojamos-mokslo-duomenu-bazes>.

• Department of Informatics possesses an e-library located at the FTP server

In order to ensure for students better conditions to acquire knowledge, study modules are under process of movement to the platform of online teaching (*Moodle)*. Currently, lecturers for the BIM study programme have already prepared 8 distant study modules in the open code system *Moodle* (*CASE and IS re-engineering, Data Protection, Intellectual systems in Finance Markets, Methodology of Scientific Research, Information Architecture of Organizations* (in English), *IS of Management Accounting* (in English), *Statistical Analysis of Business Environment and Knowledge-based System Engineering*).

### 4.4. Changes in Material resources throughout 2010-2015 related to “Business Informatics” study programme

Having considered the remarks made by the international experts in 2010, the following improvements in material conditions for students of the Department of Informatics (as well as students of other specialties) throughout the years 2010-2015 took place:

* During the years 2010 – 2014, 6 new auditoriums were established.
* In 2014, the Faculty established places for students’ informal communication/leisure/individual work (funded by sponsors), “Creative Incubator” for the development of students’ creativity. In 2015, an auditorium for group work was established.
* The number of auditoriums with multimedia increased: earlier: 15, now: 23.
* In order to ensure study quality, the Faculty allocated 61033 EUR for creating and updating computer equipment.
* For the latest literature and periodicals, the Faculty devoted 56214 EUR, which is 1.46 times more than in the previous assessment period (in 2006-2009, the sum was 38574 EUR)
* A new Faculty’s library was established
* Working area for the Department’s lecturers has expanded. The expansion is in part related to the decreased number of the Department’s lecturers. Moreover, some lecturers (who do not give lectures in this programme) were granted with their own cabinets.

### 4.5. Strenghts and weaknesses

Strenghts:

* The number of auditoriums and computer classes fully equipped with multimedia and all the necessary software is sufficient;
* All the material for lectures and studies is stored at KHF server or Moodle distance learning system. It is accessible to students in auditoriums and via internet from any place.
* The latest information related to studies is available in the databases subscribed by VU.

Weaknesses:

* Not all the latest releases of text books and scientific publications are available at necessary amounts.

Actions for improvement:

* To properly motivate lecturers to promote their more active preparation of methodical means.
* To increase the number of scientific literature available to students via internet.

## The Course of the Studies and its Assessment

### 5.1. Admission requirements, entry statistics and tendencies

The admission to the programme carried out in accordance with the *Regulations for Admission to Vilnius University Second Cycle Study Programmes*, approved by VU Senate. These regulations are published on VU website[[6]](#footnote-6).

1st cycle university graduates of Informatics (major and minor studies), Information Systems (major and minor studies), Informatics Engineering (major and minor studies), Mathematics (major and minor studies), fields of Electronics and Electric Engineering and some other specialties where studies of Informatics play one of the central roles (e.g. Computer Linguistics, Business Information Management), as well as the field of Economics (major and minor studies), the field of Business and Management (major and minor studies) may be admitted to “Business Informatics” MA study programme. Moreover, students who finished studies in the area of Physical Sciences in a college of higher education as well as bridging courses of Business Informatics in Vilnius University may be admitted to the study programme too.

The admission rank to Business Informatics MA study programme is composed according to the established score, where the mark for the final thesis/the average of the marks of the final exams and the average of the marks in the supplement of the diploma are cumulated. The formula for admission rank is presented in the entrance rules and depends on the field of the 1st cycle studies. For those who have finished studies in Informatics and Informatics Engineering, the admission rank is formed of the average of the marks in the supplement of the diploma and the mark for the final thesis: VS+D+P. For those who have graduated from the study programmes of Economics and Business Management, the admission rank if formed of the average of the marks in the supplement of the diploma and the mark for entry exam: (VS + E + P). For those who have finished studies of Informatics in a college of higher education or bridging courses in Vilnius University, the admission rank is formed of the average of the marks in the supplement of the diploma, the average of the marks in the bridging courses and the mark for the final thesis: (VS+M1)/2+D+P.

During the analysed period, the entry requirements have changed: entry possibility for those who have finished minor studies was added. Table 16 presents the highest and the lowest admission ranks, as well as the average of the marks during analysed period.

**Table 16. Admission marks of those admitted to “Business Informatics” study programme**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Year** | **State-funded (Sf) / non-funded (Snf)** | **Admission mark for those admitted to the study programme** | | |
| **Highest admission mark** | **Lowest admission mark** | **Average** |
| 2015 | Sf | 18.89 | 12.85 | 15.07 |
| Snf | - | - | - |
| 2014 | Sf | 19.2 | 12.8 | 15.3 |
| Snf | - | - | - |
| 2013 | Sf | 17.66 | 11.82 | 14.46 |
| Snf | - | - | - |
| 2012 | Sf | 18.0 | 12.4 | 15.06 |
| Snf | - | - | - |
| 2011 | Sf | 18.2 | 12.1 | 14.21 |
| Snf | - | - | - |

When evaluating the marks of the candidates, we see that the highest mark as well as the lowest mark and the average was quite stable throughout the analyzed period (the fluctuation within 1 mark). On the other hand, the difference between the highest and the lowest marks is not very drastic (about 6 marks). This shows that each year the programme welcomes students of similar level. Since the majority of the entrants to the second cycle study programme throughout the analyzed period were the graduates of the first cycle study programme “Business Informatics” in VU KHF, this also shows that the preparation level of students in first cycle studies has not changed throughout the years. Moreover, the results suggest that only state-funded applicants enter the study programme and that the programme is not popular among students who choose non-funded places. However, this tendency is applicable to all the study programmes in the field of information systems throughout Lithuanian universities and business informatics study programme does not stand out alone in this case. Table 17 presents data on entry to the second cycle study programme *Business Informatics* throughout the years.

The results suggest that despite the deteriorating demographic situation in Lithuania and decreasing number of 1st cycle graduates, this Master programme remains popular and the admission remained stable during the analyzed period. For the sake of objectivity it is necessary to admit that the larger admission to the programme was influenced by the fact that in from the year 2013, the plan for admission to the programme was reduced. However, even if the plan hadn’t been reduced, the admission would have still been performed and the plan would have been implemented. The only exception is the year 2012, when, despite the fact that the admission to the programme was conducted and the number of entrants was quite high, only 75 per cent of entrants signed the agreement and started studies. Since the majority of the entrants simply did not came to sign the study agreement, the true reasons for that remain unknown. Moreover, it needs to be highlighted that in 2014, the admission plan was carried out by 145 per cent. This special situation occured due to the fact that some VU programmes in the field of Informatics wasn’t able to carry out the admission. This allowed us to admit more students to the programme than planned.

Despite the fact that the admission to the programme was conducted and the admission plan was implemented in 2015, the decreased number of applicants raised our concern. This is, firstly, due to the overall decreased number of 1st cycle graduates. Having considered all these negative tendences, SPK seeks to increase the popularity of the programme among graduates of other specialities in the fields of Informatics and Management both in Vilnius University and other Lithuanian universities. A considerable “threat” to the popularity of the study programme (as well as other programmes of information systems) is a huge shortage of this kind of specialists on the market and a huge demand at the same time. For this very reason a significant part of the 1st cycle graduates choose to enter job market and agree with a higher

**Table 17. Data on the entry results to the 2nd cycle study programme *Business Informatics***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Year** | **State-funded (Sf) / non funded places (Snf)** | **Planned number of places** | **Number of Applications** | | **Simple competition\*** | **Number of admitted applicants** | **Execution of admission plan (%)** |
| **1st priority** | **Applications in total** |
| 2015 | Sf | 11 | 12 | 16 | 1.45 | 11 | 100 |
| Snf | 2 | 0 | 1 | 0.5 | 0 | 0 |
| **In total** | **13** | **12** | **17** | **1.31** | **11** | **85** |
| 2014 | Sf | 11 | 19 | 37 | 3.36 | 16 | 145 |
| Snf | 1 | 0 | 3 | 3.00 | 0 | 0 |
| **In total** | **12** | **19** | **40** | **3.33** | **16** | **133** |
| 2013 | Sf | 11 | 17 | 30 | 2.73 | 11 | 100 |
| Snf | 1 | 0 | 1 | 1 | 0 | 0 |
| **In total** | **12** | **17** | **31** | **2.58** | **11** | **92** |
| 2012 | Sf | 15 | 11 | 20 | 1.33 | 11 | 73 |
| Snf | 1 | 0 | 0 | 0.0 | 0 | 0 |
| **In total** | **16** | **11** | **20** | **1.25** | **11** | **69** |
| 2011 | Sf | 17 | 19 | 31 | 1.82 | 17 | 100 |
| Snf | 2 | 0 | 1 | 0.5 | 0 | 0 |
| **In total** | **19** | **19** | **32** | **1.68** | **17** | **89** |

*\** Simple competition shows the number of all applications to study in programme (the number of applicants to one place).

working load (as well as higher salary) in business companies and postpone their 2nd cycle studies. Seeking to retain contact with promising graduates who chose professional career first, SPK regularly sends reminders about the possibilities to study in the 2nd cycle programme. Consultations with social partners are carried out in order to make the studies more attractive to those who already work. Possibilities to organize lectures in English are discussed, so that students from abroad could enter studies.

### 5.2. Changes in the number of students: “drop-out” and its reasons

2nd cycle study programme *Business Informatics* does not seem to be suffering from students drop-out if compared with other programmes of the same field in Lithuania. Yet, the number of students who did not finish studies is quite high: during the analyzed period, in total 24 students did not finish their studies due to numerous reasons (out of 71 students who had started their studies during the analyzed period). Yet,the number of those who did not finish their studies is very uneven when comparing different years. Table 18 presents data on the number of students who dropped their studies or were dropped

**Table 18. Data on students “drop-out” in Master study programme “Business Informatics”**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Year of admission** | **Number of admitted students** | **Drop-out in numbers** | | | | **“Drop-out” (%)** | |
| **1 study years** | **2 study years** | **Year of graduation** | **In total during the execution of the programme** | | **In total during the execution of the programme** |
| 2014 | Sf: 16 | 5 | 0 | 2016 | 5 | | 18.7 |
| Snf: 0 | 0 | 0 | 0 | | 0 |
| In total | Sf + Sfn: 12 | 5 | 0 | 5 | | 18.7 |
| 2013 | Sf 12 | 3 | 4 | 2015 | 7 | | 58 |
| Snf 0 | 0 | 0 | 0 | | 0 |
| In total | Sf + Sfn 12 | 3 | 4 | 7 | | 58 |
| 2012 | Sf : 11 | 2 | 0 | 2014 | 0 | | 18.2 |
| Snf : 0 | 0 | 0 | 0 | | 0 |
| In total | Sf + Sfn: 11 | 2 | 0 | 2 | | 18.2 |
| 2011 | Sf : 17 | 4 | 2 | 2013 | 6 | | 35.2 |
| Snf : 0 | 0 | 0 | 0 | | 0 |
| In total | Sf + Sfn: 0 | 4 | 2 | 6 | | 35.2 |
| 2010 | Sf : 15 | 3 | 1 | 2012 | 4 | | 26.7 |
| Snf : 0 | 0 | 0 | 0 | | 0 |
| In total | Sf + Sfn: 15 | 3 | 1 | 4 | | 26.7 |
| **In total during the period** | **Sf: 71** | **17** | **7** |  | **24** | | **33.8** |
| **Snf: 0** | **0** | **0** |  | **0** | | **0** |
| **Sf + Sfn**  **71** | **17** | **7** |  | **24** | | **33.8** |

To sum it all up, one third of all the students who started Master study programme did not finish them, yet such generalization conceals huge differences of those who did not finish studies when considering different years: they vary from 18 per cent in 2012 and 58 per cent of those who were admitted in 2013.It is necessary to mention that 58 per cent of drop-outs in 2013 is extremely high and should normally be viewed as unacceptable, yet one should regard it as an exception, not a rule. It is essential to consider the reasons for drop-out. Table 19 presents data on the mani reasons for students drop-out.

**Table 19. Main reasons for students “drop-out” 2010-2015**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Course** | **Admission year** | | | | | **In total** |
| **2014** | **2013** | **2012** | **2011** | **2010** |
| Due to a breach of financial obligations | 1 | 0 | 0 | 0 | 0 | 0 | **0** |
| 2 | 0 | 0 | 0 | 0 | 0 | **0** |
| Due to low performance level | 1 | 0 | 1 | 1 | 0 | 1 | **3** |
| 2 | 0 | 4 | 0 | 1 | 1 | **6** |
| Due to unfair actions during study results assessment | 1 | 0 | 0 | 0 | 0 | 0 | **0** |
| 2 | 0 | 0 | 0 | 0 | 0 | **0** |
| Due to family reasons | 1 | 1 | 0 | 1 | 2 | 1 | **5** |
| 2 | 0 | 0 | 0 | 0 | 0 | **0** |
| Having not registered after academic leave of absence | 1 | 0 | 0 | 0 | 0 | 0 | **0** |
| 2 | 0 | 0 | 0 | 0 | 0 | **0** |
| At the request of the student | 1 | 4 | 1 | 1 | 2 | 0 | **8** |
| 2 | 0 | 0 | 1 | 0 | 1 | **2** |
| When changing universities | 1 | 0 | 0 | 0 | 0 | 0 | **0** |
| 2 | 0 | 0 | 0 | 0 | 0 | **0** |

The results presented in the table show that the main reasons for drop-out are family reasons and at the request of the student himself/herself, i.e. incapacity to properly work out the balance between work, studies and family duties or unrealistic optimism regarding work load which emerges with the start of 2nd cycle studies. On the other hand, some students dropped studies due to departure from Lithuania to live abroad.

The third reason for drop-out is unsatisfactory results in studies. Due to this reason 9 students did not finish studies, which make up one third of all drop-outs during the analyzed period. The majority of these students were dropped from the university during their second year of studies, however it is not a valid conclusion to state that students’ discipline or motivation decreases in secomd year. It is more possible that the academic failures happen during the first year and the second year only serves as a period of formal withdrawal from studies due to acccumulated failures. It raises worries, though, that in the year 2015, the number of unsatisfactory students who were dropped from studies has increased.

Seeking to decrease the number of insuficiently motivated students, it was decided to perform a short interview during the examination to enter studies and to explain all the requirements to the applicants which will be compulsory when studying. This should help to find out the real motivation of applicants. Since the Government has decided to introduce financial sanctions for 2nd cycle students who dropp their studies from 2015, it is believed that the number of such drop-outs will be reduced. This is backed by the data analysis of students who entered studies in 2015, since none of them has dropped the studies yet. On the other hand, it might be one of the reasons as to why the number of applications has also dereased in 2015 (see sub-chapter 5.1).

### 5.3. Organization of the study process and academic support for students

Study process is organized so that the programme would be implemented properly and the aims as well as learning outcomes would be achieved.

General strategy of the studies in the Master study programme Business Informatics is related to study programme aims. Study system for Master students must guarantee a consistent student work and to develop specific knowledge and skills which were introduced during the Bachelor studies.

Studies aims at developing not only specific knowledge but also creative thinking, skill in solving analysis of streams of information in organizations, issues of IT project analysis as well as business environment assessment. The main workload is targeted at students’ individual learning. Out of the total 3200 academic hours (120 ECTS) of academic load, 752 hours are devoted to class work (lectures, seminars, exercises), while the other 2448 hours comprises all individual work done by students, out of which 389 acad. hours (15 ECTS) are devoted to the preparation of Master thesis in the fourth semester.

Such division of time between class and individual work aims at properly distributing studies and scientific work throughout the whole period of Master studies. This gives favourable conditions for the application of problem-oriented methods developing creative and scientific-analytic thinking (preparation of scientific papers, research works, reports, etc.). During the final semester, students concentrate upon the preparation of the Master thesis. Students’ individual work is regularly checked during seminars and exercises.

Information on the studies is provided on several levels: from the Studies Department and KHF Dean’s Office, SPK, to the programme’s lecturers and students-curators appointed by the Students’ Representation. Direct contact questions system on a website [www.klausk.vu.lt](http://www.klausk.vu.lt) established by Studies Department, allow students to ask questions and receive answers from Studies Department or the Faculty representatives. It is convenient, since consultations are provided quite fast and students do not need to address them during fixed hours.

All information on the study process (study calendar, lecture and exam timetables, optional subjects, order of results evaluation, re-taking of failed exams), part-time studies abroad, study fees, sholarships, study funding is provided by the Faculty studies coordidators, vice-dean for academic affairs and the head of programme committee. Information is constantly published on the Faculty’s website (<http://www.khf.vu.lt/>). Information on the study process is also provided via VUSIS: he/she sees all personal details, study plan, exam session timetable, exam session results, etc., participates in the study process: registers for common university subjects and optional subjects and other.

The programme’s committee as well as the lecturers on a set time consults students about learning outcomes of the programme, contents of the course units and career possibilities. Students may ask for consultation, as well as in between (after) lectures or by e-mail. Students are consulted on career possibilities not only during lectures, special meeting with alumni, potential employers are organized.

VU Students’ Representation decide upon various students problems, defend their interests, take care of students’ academic as well as social well-being, organize cultural recreational activities, foster student traditions, help first-year students to join the University community. Student’s Representation usually appoints a senior student-curator for the needs of the first-year students.

### 5.4. Social support for students: scholarships, loans, dormitories

The following types of financial assistance for students could be emphasized: promotion scholarship, social scholarship, one-time social scholarship, a one-time purposive scholarship. A different expression of social support is State-aid loans for students (administered by State Study Fund) and financial support for students with disabilities. Students may access all the regulations for these types of support on VU web page[[7]](#footnote-7). Students of BIM study programme are introduced during the introductory lectures of the first semester. Financial support grants for the students of the programme are presented in table 20.

**Table 20. Scholarships granted by the Faculty**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Type of grant** | **2011/12** | **2012/13** | **2013/14** | **2014/15** |
| Promotion scholarship | 2 | 6 | 4 | 8 |
| UAB CSC Baltic scholarship |  |  | 1 | 1 |
| Erasmus practice mobility scholarship |  |  | 1 | 1 |
| Social scholarship |  |  |  | 1 |
| Grant for living expences |  |  | 1 | 1 |

Accommodation in dormitories for students from other cities than Kaunas can be seen as the form of social support too.

The mostly gifted students (having best marks and participating in scientific research work) may claim special VU scholarships according to study and scientific directions. For more details about such type of scholarships see VU website[[8]](#footnote-8). Since 2014, social partner of the Department of Informatics - UAB CSC Baltic - have established a special scholarship for the best Master student. It has already been presented to 2 students of Business Informatics study programme (Vilda Stanišauskaitė and Neringa Žemaitytė).

### 5.5. Scientific and artistic activities of students

Seeking to develop the Master students’ skills in writing scientific publications, KHF Department of Informatics recommends students to publish an article and present a report at a research conference when preparing for a final thesis.

Since 1996, the Department has organized conferences for Master students and PhD students “Information Technologies in Business Management” (together with the Faculties of Informatics in KTU and VMU). What is more, Master students present reports in other scientific conferences, both, locally and abroad.

Master students

Having presented a report in a conference and having published it in a conference material, students gain extra points for a final thesis defence. Students are informed on that during the very first semester. Approx. 80 per cent of students make use of this opportunity

Students’ scientific research is advised by the Department’s professors or associate professors. Students under their guidance develop their skills in scientific research work.

The Faculty gives opportunity for students to join various artistic projects, activities, such as folklore ensemble “Uosinta” , mixed choir “Veni Gaudere”, “Literary Club”, Creative Incubator, philologist club “Aš pats“, KHF theatre. Many interesting projects are organized by students themselves. During the last year, the Faculty students have initiated and carried out two massive projects “SiluetasLT” and “Promoting Youth Initiatives in Desolate Places of Kaunas Old Town” (Lith: „Jaunimo iniciatyvų skatinimas apleistose Kauno senamiesčio zonose“), have initiated a continuous competition of video commercials and series of seminars “Startuok”, have organized a photo exhibition and a seminar “Kaunas a Place where I Live” (Lith: „Kaunas – vieta, kurioje gyvenu“).

### 5.6. Students’ participation in mobility programmes

The processes of studies abroad and international cooperation are administered by VU Department of International Programmes and Relations. Vice-dean for International Relations in KHF is responsible for international cooperation and studies abroad.

The Faculty’s students are able to leave for one semester or the whole year via Erasmus Mundus programmes or bilateral cooperation agreements. The Faculty has 81 Erasmus agreements with foreign universities and 5 bilateral cooperation agreements (for the complete list see <http://www.khf.vu.lt/tarptautiniai-rysiai/tarptautiniai-partneriai>).

The majority of BIM students have already studied abroad during their Bachelor study years and since almost 90 per cent of BIM students are employed in Lithuania, it becomes hard for them to make use of Erasmus studies during master studies. Although the lecturers of the Department of Informatics promote Erasmus programmes, during the years 2011-2015 only one student has taken this opportunity. In 2013-14, he studied in Libera Universita di Bolzano, Italy.

Since 2013, the number of Erasmus students in the Faculty has increased immensely. They eagerly sign in the course units taught by the Department’s lecturers. In 2013-14, the Department of Informatics had 1 Master student from Spain and 2 from Turkey. In 2014-15, there was 1 master student from Italy.

Since the last visit of experts, possibilities for participating in international mobility programmes have been expanded. The number of foreign students who come to the Faculty via Erasmus exchange programme has increased considerably. The study programme’s lecturers go on Erasmus internships more often than earlier. Master students of Business Informatics also have wider possibilities to participate in an exchange programmes.

### 5.7. Evaluation of students’ achievements

VU *Studies Regulations*, *Order of evaluating study achievements*, regulations of Vilnius University academic unit study achievements evaluation appeal commission define the order of evaluation of study achievements, liquidation of academic debts and evaluation and appeal against evaluation[[9]](#footnote-9)

Relevant information on evaluation of study results, exam session, academic depts., liquidation of debts and other is published on VU website[[10]](#footnote-10).

Lecturers present the programme of a course unit (aim, learning outcomes, content, methods of studying and evaluation and assessment strategy) during the first lecture when explaining requirements for examination.

Assessment strategy of a course unit is also pointed out in the description of a course unit. For each aspect in a description the scope of students’ individual work and deadlines are provided, for each individual assignment coefficients deciding upon the final mark are presented.

Students’ knowledge and abilities in VU are examined in a written form or orally. Examination is done during intermediate and final exams. Intermediate assessment comprises control works, home works and colloquiums; final assessment is done during exam session. Consistent examination of student knowledge and abilities happens throughout the semester and motivates them to work during the whole semester, not just before the exams. When evaluating students’ knowledge and abilities, criteria assessment system (based on criteria) as well as relative assessment system (based on norms) is applied. Results of an exam session are analysed by programme committee. The results are also discussed in the Informatics Department. The final mark of an exam is usually composed of the marks for written papers, participation in seminars, individual or group project, final written or oral exam.

A Master thesis is evaluated by the Defence Board, working on the criteria for the final thesis evaluation set by the Department. The Board members evaluate the final work, its presenttion, author’s answers to questions posed by a reviewer or the board, take into consideration remarks made by a reviewer and an advisor. If opinions of the Board members are equally divided, the head of the Board has the right to decide upon the final mark.

* The following requirements are set for the Master thesis in the Department of Informatics:
* The degree of realization of a chosen topic;
* Originality and novelty;
* Methodological ground;
* Relevance of a topic;
* Correspondence between the title and the contents;
* Validity of conclusions;
* Quality of mounting and presentation.

During the first semester, the following requirements for Master students’ scientific research work are set: preliminary formulation of a topic for the final thesis, studying of scientific literature and review of a current situation, formulation of a problem, setting possible solutions and hypotheses, formulation of an object, aim and tasks, preparation of a preliminary plan of a Master thesis and its implementation programme. At the end of the semester, students present an account of their work to the board of experts (pass-fail).

The main requirements for the scientific research work in the second semester are as follows: preparation of theoretical material for problem solution; a comprehensive comparative analysis of solutions for current models, methods, algorithms; new models, methods, conceptual, programme or structural solutions proposed by a student; preliminary preparation of a theoretical section of the final thesis. At the end of the semester, students present and defend an account of their work to the board of experts (pass-fail).

The main requirements for the scientific research work in the third semester are: preparation of experimental research methodology; formation of experimental environment for the realization of proposed models, methods, algorithms, schemes; collecting, processing and evaluating data or other material necessary for the experimental research; planning and implementing supplementary experiments; preliminary evaluation of experimental research; planning and implementing supplementary experiments; formulation of preliminary conclusions. At the end of the semester, students present and defend part of their scientific research work to the board of experts (examination).

The main requirements for the scientific research work in the final fourth semester are: supplementing theoretical part of a thesis based on most recent experiments and literary sources; collecting additional experimental material and carrying out supplementary research as well as providing general conclusion of the results; preparation of conclusions on the practical application of the received results; preparation of general conclusions and proposals; preparation of an introduction (final editing), summary (in English), a list of references; the final arrangement of the thesis; preparation for the public defence; handing in the thesis to the scientific advisor and the reviewer and; a defence of a thesis.

Studies in Business Informatics Master Programme are finished with a defence of the final thesis. The final thesis defended publicly at the defence board. During the defence a special interest in placed on students’ participation in scientific conferences.

The grades of the final theses of Business Informatics Master Programme (2011-2015) are provided in picture 2. The list with names of final theses is presented in Appendix 4.

**Figure 2. Evaluation of BI programme master’s theses 2011-2015**

Vilnius University applies various means to ensure an honest process of studying. VU lecturers and must follow *Academic Ethics Code of Vilnius University*[[11]](#footnote-11), which defines general ethical norms for academic, lecturing, studying and scientific research work. The Code also describes cases of cheating, plagiarism, counterfeiting and bribery.

### 5.8. Professional activities of the programme’s graduates

It is impossible either for the study committee or the faculty to find out exact professional activity areas of all graduate students. Voluntary research on graduates’ professional activities is performed by interrogating graduate students on their employment and professional activity areas and hoping for sincere answers.

It is necessary to say that each year no less than one (some years 2 or 3, as in 2015) of the programme’s graduates pursue PhD studies. A wide area of the graduates’ professional activities is IS analysts: it is known that no less than 10 graduates pursue career in companies like CSC Baltic, Columbus Lietuva, Blue Solutions Group and other. A considerable part of the graduates work as IT project managers or designers in companies like No Magic Europe, DevBridge Group, Telesoftas, UAB “Du Trys” and other. Summing it all up, it is fair to say that the majority of the programme’s alumni work at the field of their studies.

### 5.9. Strenghts and weaknesses

Strenghts:

* VUKHF Department of Informatics, Faculty Administration and Studies Department takes care of the organization of Master studies and academic support for students;
* Great oportunities for Master students’ scientific and cultural activities;
* Wide social support for studies;
* Wide possibilities to participate in Erasmus programmes;
* High level of employment according to speciality: more than 80 per cent of the graduates work as specialists in the field.

Weaknesses:

* Low interest in Erasmus studies, priority is placed on working experience in Lithuania.
* Interdisciplinary composition of the programme and different study directions of Bachelor students who enter Master programme Business Informatics condition different level of readiness for Master studies.
* No constant connection with the programme’s alumni.

Actions for improvement:

* To expand links with the programme’s graduates by organizing a group on Facebook;
* To develop intensively 4 bridging courses for persons who lack knowledge in Informatics;
* To attract most gifted students, especially those who were granted with great job offers, by organizing more flexible consitions for fulfilling practical assignments.

## Programme management

### 6.1. Levels of study programme management and regulations

Fostering quality culture is a strategic goal of Vilnius University. Quality culture is cherished based on values presented in VU mission as well as Regulations of Quality Assurance in European Higher Education[[12]](#footnote-12). VU study programmes as well as their implementation are administered by VU Studies Department, which takes care of quality assurance in different activity areas of VU and its sectors[[13]](#footnote-13). The main documents dealing with internal study quality assurance are: *Policy of Vilnius University Study Quality and Strategy for Quality Improvement (2013-2015 )* and *Vilnius University*. *Quality Manual*[[14]](#footnote-14). These documents were prepared when VU Quality Management Centre (later reorganized passing all its functions to Studies Department) was implementing a project *Establishment and Implementation of Vilnius University Internal Study Quality Management System* (2011-2013). The main goal of the project was to ensure systematic and constant improvement of quality of university studies as well as activities influencing them and consolidate, coordinate community efforts. Project results are published at VU website.[[15]](#footnote-15) On a strategic level, study quality assurance policy as well as quality improvement strategy (it corresponds to the aims presented in VU strategy): 1) to be an open and attractive University to promising and motivated potential students and lecturers as well as scientists of highest quality; 2) to create and cherish motivating environment for studying based on scientific research results. Strategic goals are in accordance with study quality requirements, which are implemented according to Regulations on European higher education quality improvement, LR Law on Science and Studies (Valstybės žinios, 12-05-2009, No. 54-2140) and VU regulations: Vilnius University policy of study quality assurance and strategy for quality improvement (2013-2015), Vilnius University. Quality Manual and

Establishment and Implementation of Vilnius University internal study quality management system (2011–2013).

The Faculty’s Board and administration are responsible for the implementation of administration level functions. It ensures organization of study process (responsible person is Vice Dean for Academic Affairs), maintenance of material resources (responsible person is Vice Dean for Infrastructure), employment, training and certification of pedagogic staff (certification committee), international cooperation and Erasmus study process, organization of staff visits (International Relations Department).

Dispute Investigation Commission approved by the Faculty Board is appointed to analyze applications for disputes related with scientific and studying activities and involving students as well as other community members.

The head of the Department of Informatics and the administrator are responsible for dealing with questions on study programme administration, concerning aid for students with their study courses or process of organizing their final theses, communication with lecturers, organizing feedback from students and alumni.

On an academic level, study programme management is ensured and performed by the study programme committee, which is regulated by Study programme committee rules approved by VU Senate Commission and other related VU documents: Vilnius University Statute, VU Study Programme Regulations and a description of a corresponding study direction. Main tasks of the committee are also mentioned in VU Regulations for Studies. SPK communicates with the lecturers, students, social partners and determine areas of responsibility and solutions.

### 6.2. Responsibilities for the implementation and supervision of the programme

The composition of BIM Master study programme committee was approved in 10-01-2013 by VU Senate in a meeting (protocol No. SK-2013-1, resolution No. SK-2012-1-2), changes in the committee composition are approved by the Council meeting protocol No. 14, 2015 09 28.

Business Informatics study programme committee is comprised of Assoc. Prof. Dr. Vytautas Rudžionis (the head), Prof. Dr. Audrius Lopata, Prof. (HP) dr. Saulius Gudas, Prof. Dr. Gintautas Garšva, Lect. Dr. Darius Dilijonas, Dr. Jovita Nenortaitė (social partner, CSC Baltic), Povilas Raškauskas (students’ representative). Three professors are among the committee members (07T and 09P directions). Members of the programme committee are qualified enough for the position, they are authors of numerous publications, monographs, course books, have participated in scientific internships and Erasmus visits, regularly participate as well as organize scientific conferences and collaborate with foreign scientists of other academic institutions.

The head of the committee is responsible for a constant supervision of the programme, expansion and preservance of its interdisciplinary relations. Committee member A. Lopata, the head of the Department, is responsible for motivating the 1st cycle students to study in Master study programme Business Informatics. He is also responsible for the programmes’ structure and contents to be in accordance with the general requirements for Master study programmes, renewal of the programme and taking care of all the necessary documents for such process, drawing up conditions for Master students to head for Erasmus studies and the correspondence of ECTS. Lect. Dr. D. Dilijonas is responsible for project work integration to the study process as well as ensuring feedback from students and lecturers. Prof. Dr. S. Gudas is responsible for ensuring the level of methodology for scientific research work. Prof. Dr. G. Garšva is responsible for collaboration with the programme’s alumni, social partners inviting them to pay visits to the Faculty and give lectures, go to Erasmus visits and introducing them to business environment requirements for the qualification of specialists. All the members of the committee are responsible for monitoring of interdisciplinary modules, integration of contemporary and relevant to business market software solutions to the study process, their selection.

### 6.3. Means for internal quality assurance

The aim of the study programme committee is to ensure the fulfillment of SP results by cooperating with SP internal and external partners. The committee’s meetings are held at least once per semester. The committee annually revises descriptions of SP and course units, organizes discussions of the academic staff, who carry out the programmes, on the fulfillment and improvement of the programmes, gives recommendations to the academic staff for improvement. The committee may recommend changes in the contents of a course unit, analysis of interdisciplinary relations (to avoid overlapping of topics or to strenghten implementation of learning outcomes and the quality of study results).

Students may express their opinion on the contents, balance of theory and practice, division of work load. Students’ opinions on the instruction of a specific course and the assessment of study results, balance between class work and home work are analysed. In spring semester, meeting with 4th year student representatives are organized (the last one took place on 19 03 2015). Lecturers periodically receive accounts of VU Student Representation student surveys on their courses. Based on the results of student sturveys where the contents of a course and lecturer’s methodological readiness is evaluated, the programme committee may recommed means for lecturers’ training or initiate extraordinary certification of lecturers.

The correspondence of pedagogic work of the academic staff to the requirements of SP is supervised, guest lectures by company specialists (CSC Baltic) and foreign lecurers (Erasmus visits) are initated. Since 2013, 16 lectures by CSC Baltic specialists and 7 Erasmus visits took place.

Lecturers’ the material for studies is stored in ftp or on a platform for online teaching (Moodle). Results of intermediate assessment are stored in ftp without violating privacy.

Descriptions of course units are updated before each new semestre. The changes in the descriptions are influenced by a new topic to be inderted, an old one which has lost its relevance and should be deleted, new literary sources or regulations. Any major alterations concerning the contents of a course, assessment systems, the scope of a course, are discussed with the committee.

To ensure the self-control of the Department’s lecturers, “competence portfolios” of the academic staff are stored in the Department. Competence portfolios comprise information on lecturer’s scientific qualification, pedagogic competence as well as other professional information (timetables, schedules for examinations, topics of advised final theses, results, etc.). Competence portfolios allow the SPK to constantly follow the results of lecturers’ working and learning activities. Part of the lecturers have created and regularly update their professional website stored in VU B server (Prof. Dr. S.Gudas, Prof. Dr. D. Krikščiūnienė, Prof. Dr. V. Sakalauskas).

### 6.4. Information base for programme management: Information system of Vilnius University studies

The Faculty administration and lecturers use VU information system (VUSIS) which encompassess different programmes. One of them is administration of a study programme which is available to those who have access (the vice dean for academic affairs, studies administrator and other), allows its users to create, review and edit study programme plans.

A programme for student administration allows its users to see and administer students’ personal details, assessment, registration to otpional courses, topics for final theses, to give reference forms, to register courses completed in other universities, to present to students the results of their requests, marks and other. Moreover, supplements of diplomas are also prepared and later printed out from this system. VU Student Representation stores data on admission (applications, a number of admitted students according to priorities), statistics about students and studies on various paratemers. Lecturers have electronic work places where they may insert exam results, descriptions of course units, see the list of students who take their course. VU Student Representation facilitates information management and carrying out of studies.

For the process of studies, information and functions available in VU Student Representation as well as ftp server are used, accessable only to registered members (lecturers, students, staff, Erasmus students).

All information on Business Informatics Master study programme, its structure and descriptions of course units is available in an electronic form on the Faculty’s server. Here all the information necessary for the fulfillment of the programme is stored: the data on admitted students and graduates, student progress and lists of final theses.

### 6.5.Feedback: students and graduates’ opinion on the programme and its implementation

The organization and implementation of VU feedback is regulated by *Order for organizing feedback of study process participants*.[[16]](#footnote-16)

VU organizes centralized surveys two times a year after each semestre for the students of the 1st and 2nd cycle studies ( surveys are carried out by using VU electronic survey system):

1. A survey about concrete courses. When carrying out such surveys, a recommendatory common university form is used.
2. A survey about general satisfaction with the studies of a particular semestre. Detailed results of surveys according to Departments and study programmes are announced in VU website, section “Feedback” (Lith: “Grįžtamasis ryšys).

Considering small number of BIM students and the compactness of the Faculty, priority is placed on direct communication with students, seeking to find out their opinion.The Each year, the faculty’s board initiates discussion about VUSIS student surveys and presentation of study committees’ opinion. In the February of 2015, a discussion about VU survey of 2013-2014 was organized. In total 32,8 per cent of students participated (65 out of 198). 7/19 BIM students showed up which makes 36,8 per cent (only the first course). A group of questions dealing with satisfaction of studies, contents of courses and quality of lecturing has revealed that BIM students are more satisfied with the quality of studies than the general indicator in the Faculty: the average of the Faculty students’ satisfaction with the quality of studies, contents, lecturing was 70,5 per cent, while for BIM students the result was 85,7 per cent. The opinion on reccomending BIM studies for others is a central one: a positive answer to the question “If your relatives, friends, acquiaintances considered the possibility of studying the same programme as you are, and asked for your advice, would you recommend it?” chose 76,1 per cent of the students, while speaking of BIM programme, 86,7 per cent of BIM student chose the positive answer “Yes/more like yes”.

Meetings with a group of students are organized annually. During a SPK meeting of with BIM students (1st course) in 19 03 2015, the following requests have been expressed: to have more practical lectures, which deal with contemporary problems, visits to companies, and better relation of theory and practice. In the Autumn semester of 2015, special lectures were given by the representatives of Google Lietuva, Digital Academy, the head of a department of one Swiss IT company. The lecturers were asked to revise evaluation requirements and to balance the scope of study material, which was done with respect to three modules.

Meetings with alumni on the Department’s scale are not very frequent, though they happen at least once a year. In 2011, the Department of Informatics celebrated 20 years anniversary, which gathered the programme’s alumni. It was the right time to carry out a survey which showed a high level of employment, satisfaction in studies and positive attitude towards the programme’s graduates when employing them in their companies. In 2014, the meeting of all the Faculty’s alumni was organized. They were invited to join the events dedicated to the Faculty’s 50th anniversary. Alumni are invited to give plenary reports in an annual conference for Master and PhD students “Information Technnologies”. In the conference of 2015, the graduates of the study programme shared their experience and insights on successful career.

### 6.6. Cooperation with social partners

The number of social partners is constantly growing, their contact information which gives the students possibility to address them on career questions, are placed on the Faculty’s website [www.khf.vu.lt](http://www.khf.vu.lt). The closest ties were developed with CSC Baltic, UAB “Blue Solutions”, Digital Academy (Google partners), “OptimusCRM”, UAB “Proringas”, UAB “NoMagic”. The CEOs and employers of the companies are invited to participate in the Department’s meetings, especially those which deal with the list of topics for final theses so thatthey could suggest relevant topics.

Representatives of social partners come to present reports (seminars), give lecturs ( on the topics of project management, introduction of management accounting IS software solutionsspecification of customer needs, group work). They are also invited to join the Master theses defence sessions, they are included in the board for the defences, which increases integrity of science and business as well as general quality of studies.

In 2011-2012 social partners from CSC Baltic have given 7 lectures while in 2012-2013 they have given 9 lectures. Invitations were granted for students to participate in CSC Webinars on the topics of methods for project management. Moreover, invitations for students were also granted by HNIT-Baltic, Google Lietuva and Digital Academy to participate in their trainings.

To find out the employers’ opinion, special surveys are being carried out. The participants of the survey are those who have become acquainted (at least partially) with the graduates of the Department. The questioniers are usually informal, carried out in the form of discussion, though anonymous surveys are also carried out on the internet. The aim of the most recent survey carried out in 2014 was to find out what kind of IT specialists are in demand in the market. It was found out that the demand for programmers, IS project designers/analysts, IT project managers, IT integration consultants are of similar scope, whereas the demand for IT engineers is less by 6 per cent.

### 6.7. Strenghts and weaknesses

Strenghts:

* Regular supervision of the programme’s aims, abilities and content of the course units.
* Active collaboration with students seeking to find out the expectations and satisfaction with the studies on the levels of both, SPK and the Faculty Administration.
* A large number of employed graduates (more than 80 per cent) points to a clever management of the programme.

Weaknesses:

* Due to limited scope of the Master study programme it is impossible to include the development of some of the desired competences and abilities (e.g. organization management, technologies for business solutions).
* The start of the career of young specialists is burneded by the fact that Lithuanian companies are small and do not allocate funding and resources for specialist trainings, while the univeristy is unable to prepare specialists for a specific area.

Actions for improvement:

* To expand the network of business organizations which would participate in the process of programme implementation.
* To regularly carry out research on the forecast demand for business informatics specialists.

# ANNEXES

ANNEX NR. 1 Programme courses description

ANNEX NR. 2 List of lecturers

ANNEX NR. 3 CV of lecturers

ANNEX NR. 4 List of final thesis of students

ANNEX NR. 5 Summary of previous self-assesment evaluation

1. <https://klevas.vu.lt/pls/pub/public_ni$www_progr_app.show> [↑](#footnote-ref-1)
2. <http://www.vu.lt/kviecia/> [↑](#footnote-ref-2)
3. <http://www.vu.lt/kviecia/naujienos/visos-naujienos/aplankyk/item/512-tapk-studentu-vienai-dienai> [↑](#footnote-ref-3)
4. (Ingrida Šarkiūnaitė, Dalia Krikščiūnienė, Rimvydas Simutis. Metodiniai nurodymai VU KHF Informatikos katedros Verslo informatikos ir Verslo informacijos sistemų studijų programmeų studentams (2007) [↑](#footnote-ref-4)
5. Approved by the Senate Committee of Vilnius University on the 23rd of February, 2010. Protocol No. SK-2010-5-34 [↑](#footnote-ref-5)
6. žr. <http://www.vu.lt/kviecia/rinkis-studijas/kaip-istoti/2-pakopos-studijos> [↑](#footnote-ref-6)
7. Žr. <http://www.vu.lt/lt/studijos/studiju-procesas/finansine-parama>. [↑](#footnote-ref-7)
8. Žr. [http://www.vu.lt/lt/studijos/studiju-procesas/finansine-parama#vardines\_stipendijos](http://www.vu.lt/lt/studijos/studiju-procesas/finansine-parama%23vardines_stipendijos). [↑](#footnote-ref-8)
9. *Study regulations*. Approved by the resolution No. SK-2012-12-8 of VU Senate Commission in 21-06-2012 (<http://www.vu.lt/site_files/SD/Studentams/SP/SRD/VU_studiju_nuostatai_naujoji_redakcija.pdf>);

   *Order of evaluating study achievements*. Approved by the resolution No. SK-2012-20-6 of VU Senate Commission 13-12-2012 (<http://www.vu.lt/site_files/SD/Studentams/Studiju_pasiekimu_vertinimo_Tvarka_12.21.pdf>);

   *Regulations of Vilnius University academic unit study achievements evaluation appeal commission*. Approved by the resolution No. SK-2012-20-3 of VU Senate Commission in 13-12-2012 (<http://www.vu.lt/site_files/SD/Studentams/Padalinio_akademines_etikos_komisijos_nuostatai.pdf> ). [↑](#footnote-ref-9)
10. See. <http://www.vu.lt/lt/studijos/studiju-procesas/egzaminu-sesija>. [↑](#footnote-ref-10)
11. *Academic Ethics Code of Vilnius University*. Approved by VU Senate commission 13-06-2006, protocol no. S-2006-05 (<http://www.vu.lt/lt/studijos/studiju-procesas/studijas-reglamentuojantys-dokumentai/45-studijos/studijos/2564-akademines-etikos-kodeksas>). [↑](#footnote-ref-11)
12. #### *Regulations of Quality Assurance in European Higher Education*. Vilnius, 2006. Reference: <http://www.skvc.lt/files/leidiniai/skvc_knyga.pdf>.

    [↑](#footnote-ref-12)
13. See http://www.kvc.cr.vu.lt/site. [↑](#footnote-ref-13)
14. #### *Policy of Vilnius University Study Quality and Strategy for Quality Improvement (2013-2015).* Approved by resolution No. SK-2013-8-6 of VU Senate commission in 20-06-2013; reference: <http://www.vu.lt/site_files/KVC/VU_Studiju_kokybes_uztikrinimo_politika_ir_strategija_LT.pdf>; *Vilnius University*. *Quality Manual*. Vilnius, 2013. Reference: <http://skvis.vu.lt/pub/book/qm/topic/10298430>.

    [↑](#footnote-ref-14)
15. See <http://www.kvc.cr.vu.lt/site/?q=node/76>. [↑](#footnote-ref-15)
16. Approved in 29-05-2009. <http://www.vu.lt/site_files/SD/SK/SP_dalyviu_GR_tvarka.pdf> [↑](#footnote-ref-16)