



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

VILNIAUS KOLEGIJOS
INFORMACIJOS SISTEMŲ (653E10002)
VERTINIMO IŠVADOS

EVALUATION REPORT
OF INFORMATION SYSTEMS (653E10002)
STUDY PROGRAMME
at VILNIUS COLLEGE

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Išvados parengtos anglų kalba
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DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	Informacijos sistemos
Valstybinis kodas	653E10002
Studijų sritis	Technologijos mokslai
Studijų kryptis	Informatikos inžinerija
Studijų programos rūšis	Koleginės studijos
Studijų pakopa	Pirmoji
Studijų forma (trukmė metais)	Nuolatinė (3,5), iššęstinė (4,5)
Studijų programos apimtis kreditais	210
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Informatikos inžinerijos profesinis bakalauras
Studijų programos įregistravimo data	2010-01-26

INFORMATION ON ASSESSED STUDY PROGRAMME

Name of the study programme	Information Systems
State code	653E10002
Study area	Technological Sciences
Study field	Informatics Engineering
Kind of the study programme	College studies
Level of studies	First
Study mode (length in years)	Full-time (3,5), part-time (4,5)
Scope of the study programme in credits	210
Degree and (or) professional qualifications awarded	Professional Bachelor of Informatics Engineering
Date of registration of the study programme	2010-01-26

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I. INTRODUCTION

The Lithuanian Centre for Quality Assessment in Higher Education has invited four experts and one representative of students (hereinafter called Expert Team) from Estonia, Latvia, and Lithuania, to review and assess the *Information systems* professional bachelor college study programme (state code 653E10002, study field of Informatics engineering, hereinafter called Programme) at the Vilnius College (further VC). The programme (both full-time and part-time) is organized by the Information Technology Department (hereinafter called Department) of the Faculty of Electronics and Informatics (hereinafter called Faculty). Institutional structure of VC enables to involve required teachers from other faculties and departments of VC. *Information systems* until 2012 was the only study programme in the study field of Informatics Engineering, organized by VC, but, in 2012, 2 new study programmes are announced in Informatics Engineering – „Smart Device Technologies“ and „Electronic Business Technologies“.

The Expert Team visited the Faculty on October 1, 2012.

First, the Expert Team met the administrative staff (4), represented by the Dean of the Faculty, Head of Computer Centre, Head of Computer Engineering and Telecommunications Department and Head of Electronics Department. They answered questions regarding rentability of the programme and organizational issues. It was mentioned, that all study programmes in Informatics Engineering, especially the *Information Systems* Programme enroll enough students to make these programmes rentable. The *Information Systems* Programme is the third largest programme currently in the College, and the results of last year are 60 entrants for full-time studies and 26 entrants for part-time studies. The administrative staff described the quality control system of VC, which is the same for all study programmes. They explained, that Programme development takes into account social partner needs, they are periodically asked for input. Meetings with students are organized each year in order to find out their opinion. The Faculty fills out a self-evaluation form each year. The administrative staff also explained the reasons behind the change from 3 to 3.5 years of studies – this being mainly because of the difficulty of technology field studies. Mainly different kind of practice was included in the additional 0.5 year.

Next a meeting with staff (4) responsible for preparation of the self-evaluation report was conducted. Participants were: Marija Danute Aukstuoliene (Vice Dean of the Faculty of Electronics and Informatics), Dr. Algis Zengulis (Head of Information Technology Department), lect. Ramunas Romancikas and Fuadas Marius Alijevas (student). At this meeting, the Expert Team was given answers to the questions concerning less uncovered issues in the self-assessment report. They explained, that the source of Learning Objects is their research work, input from social partners, examples from other universities. Also, they explained, that from September 1st, 2012, all teachers are using the Moodle system for presenting electronic learning material.

After that, a meeting with 8 members of teaching staff, teaching the subjects of Programming, Information Systems Design, Information Technology, Operating systems, English language, Human Computer Interaction, Information Management, Databases and Systems, Hypertext

Systems and Internet Technology. Teachers expressed mostly positive opinion on programme structure, workload, exchange visits, etc.

The Expert Team also conducted interviews with 5 students of the Programme (3 – 2nd year and 2 – 3rd year). The Expert Team was familiarized with students' attitude towards the Programme; the students expressed positive opinion on teacher qualification and attitude, communication with teachers, study subject sequence (e.g. programming). They also pointed to some possible improvements to the Programme – more practice in real environment, tailoring of general study subjects to the Programme, involvement of industry people to share experiences, more programming subjects, etc.

The Expert Team had possibility to observe various support services (classrooms, computer services, library) as well as to familiarize with students' final works.

Finally the Expert Team met 4 social partners and employers of the Programme students. They expressed a generally positive attitude about the skills of the students they employ, especially in e-commerce, opensource platforms. The social partners also expressed their needs for Java, NET programming skills.

At the conclusion of the visit, the Expert Team conducted a meeting with staff of the Faculty and introduced general remarks of the visit and highlighted some strengths and weaknesses of the Programme.

The findings of the Expert Team are reflected in the following chapters of this document. The self-evaluation report submitted by Faculty, the observations made at the time of the visit, and the supplementary material received during the visit form the basis of these assessments.

II. PROGRAMME ANALYSIS

1. Programme aims and learning outcomes

Learning outcomes of the Programme are structured as a set competencies and a set of learning outcomes (hereinafter – LO) enabling each of these competencies.

Public accessibility of the programme aim and LOs on VC website (<http://eif.viko.lt/lt/pages/Informacijos-sistemas>) is limited only to LOs, however LOs, listed on the website are different from these listed in the self-evaluation report. One more version of LOs, different from that in the self-assessment report and that on the Lithuanian website, is given on the English version of VC website.

Aims of the study programme are not explicitly given on the VC website.

Study programme LOs are formulated, mainly taking into account market needs, the research work of the Faculty staff, examples from other universities.

The majority of LOs, recommended by the “*General Regulation on Technology science (engineering) studies*” document No. ISAK–734 dated April 29, 2005, are covered by Programme LOs. However, there are LOs, recommended by the General Regulation on Technology Science document, which are mainly covered only by separate elective study subjects – e.g., those related to software life-cycle management, human-computer interaction, applied and experimental research management. Some of the recommended LOs, e.g. knowledge on computer architecture, are not present in the Programme.

The *ACM Curriculum Guidelines* are not used for LOs formulation.

Programme LOs meet qualification requirements the 6th level of European Qualifications framework and Lithuanian Qualifications framework. LOs of the Programme are also consistent with the academic requirements of the order of the Minister of Education and Science of the Republic of Lithuania No. V–501 dated April 9, 2010 “*Description of general requirements for the first cycle study and entire study programmes awarding a degree*”, as well as its amendment No. V-501 dated April 9, 2010, and they correspond to the college level of studies.

The name of the programme, its LOs content and the qualifications offered are compatible with each other. LOs of separate study subjects are linked with the LOs of the Programme, but these links should be carefully revised by designing a comprehensive system of LOs. E.g. Physics is pointed to develop the skills of “applying ICT for team work”, for “advising and training personnel on information system operation”, etc.

2. Curriculum design

To the best of knowledge of the Expert Team, the curriculum design of the Programme meets academic requirements of the order of the Minister of Education and Science of the Republic of Lithuania No. V–501 dated April 9, 2010 “*Description of general requirements for the first cycle study and entire study programmes awarding a degree*”, as well as its amendment No. V-501 dated April 9, 2010.

However, not all recommendations of the “*General Regulation on Technology science (engineering) studies*” document No. ISAK–734 dated April 29, 2005 are followed - e.g. subject areas of computer architecture, electronics, material science, are not covered. Subject areas, such as software engineering, human-computer interaction, applied research and experiment planning, are covered by elective subjects, therefore students not necessarily study them.

Logical sequence of subjects in the programme is rational, e.g students like the sequence of study subjects on programming. Course descriptions include prerequisites for each subject. Module structure is not explicitly applied in the Programme. For part-time studies, some study subjects are split into 2 parts, 3 credits each, and they are studied over 2 sequential semesters.

The content of subjects is consistent with the college level of studies, it corresponds to the 6th level of *European Qualifications framework* and *Lithuanian Qualifications framework*.

The content and methods of the subjects/modules are mostly appropriate for the achievement of intended LOs set.

General study subjects (e.g. Mathematics, Physics) could be tailored specifically to the Programme in order to better correspond to the Programme LOs.

The programme has a rather reduced set of programming/software engineering study subjects, comparing to other similar programmes in informatics engineering. Social partners, when evaluating the knowledge and skills of employed Programme students, express the need for skills in using modern system development tools (Java, MS NET, etc.).

In general, the scope of the programme is sufficient to ensure the LOs set. Subject areas, such as software engineering, human-computer interaction, computer architecture, relevant to formulated LOs and recommended by *ACM Curriculum Guidelines*, should be represented better in compulsory study field subjects, not just in elective ones.

International recommendations, e.g. *ACM Curriculum Guidelines*, IEEE recommendations and others are largely followed when formulating study outcomes of the Programme.

However, keywords, reflecting recent achievements in computer science, like cloud computing, web 2.0, crowdsourcing, are missing in the study subject descriptions. Students also do not recognize such keywords as cloud computing.

3. Staff

The Programme is provided by staff, mainly Lectors, possessing Master degree. There are 5 teachers with Doctor degree, teaching 12 out of 32 study field subjects (37.5%). All these subjects are from computer science field, and 6 of them are covering practice, course project and final project, while the rest 6 – separate topical study subjects. Additionally, 2 elective subjects are also taught by Doctor degree holders.

18 out of 30 teaching staff members have practical experience in the field of the subjects taught, therefore it can be considered, that the qualifications of teaching staff are adequate enough.

There are 30 teachers working in the Programme. Only 2 of them are part-time, one coming from practical IT sphere, another – from university.

Teacher load is normal, considering by the general situation in Lithuanian higher institutions – 720 contact hours per year. 14-15 students per teacher.

The self-analysis document shows, that there are 28 permanent teachers and 2 invited teachers from another institutions (1 from IT company, 1 from university). However, it is not shown, what is the turnover of the teacher staff for separately taken years. Staff is sufficient for the provision of the Programme.

About 1/3 of the members of the staff have prepared and published some kind methodical material and/or research in the area of their subjects taught.

Teacher mobility and participation in Erasmus exchange should be more intensive. Only 5 (out of 30) programme teachers are mentioned to be involved in academic mobility. 10 teachers (including those involved in mobility) are participating in professional development related projects.

Teachers express the need for more funding for qualification improvement, especially for certification possibilities.

52% of teachers participate in research or applied projects, related to the fields of study subjects taught.

4. Facilities and learning resources

The auditorium space is sufficient. 12 laboratories are jointly used by all faculties. 7 common-purpose computer laboratories are used for program purposes, while specialized labs are used for Physics, English language teaching. CISCO academy lab is used for computer networking subject studies. Other specialized labs for micro-media and computer engineering are being currently installed in the course of an infrastructure development project.

All premises, required for the Programme studies, are situated in one building. Sanitary conditions sufficient.

Up-to date general-purpose software (operating system software, MS Office, etc.) is used in computer classes. Specialized software, necessary for the study of specialization subjects is used – Autodesk AutoCAD, Lotus Domino, Oracle 9i Application Server, Oracle 9i Database, Sybase Power Designer, Sybase Adaptive Server Enterprise, etc.

Material resource requirements for separate study subjects is not listed, therefore it is not clear, whether the laboratories are equipped adequately. However, it is recommended to extend the special-purpose software list by adding business process modelling software (e.g. Magic Draw), as it is necessary for practical information system design. Teachers of the Programme also mention the need for this type of software.

Educational practices (4) are organized at VC – premises and laboratories are sufficient.

Professional and Final practice is organized via arrangements with companies and institutions. Agreements with social partners are in place for organizing this type of practices.

Not all teaching materials, listed as mandatory in course descriptions, are accessible at VC library. Modern open-source electronic material is specified only for 4 subjects. Literature in Russian language is on the literature list for some study subjects. Only a small part of students

are able to read it. E.g., Russian literature sources are given for E-commerce subject, where, definitely, more modern literature would be available in English.

Teaching resources in MOODLE are available for all study subjects from September 1st, 2012.

5. Study process and student assessment

Admission requirements are well-founded, equal for all entrants.

Organization of the study process ensures adequate provision both of the full-time and of the part-time studies. For the convenience of part-time students, study organization has been changed from 2-week blocks in 2 months to Fridays-Saturdays.

Students express wish for better timetables - they would like to have 1 day free in a week.

Video recording should be used for Programme lectures, especially in part-time studies.

Drop-out of students in the Programme is 18-28%, and this is rather typical to study programmes in technology science field. 2/3 drop-outs are due to poor academic progress. Additional courses, including English courses, are organized for weaker students.

Students are involved in applied research activities mainly during the preparation of their final thesis. There is no evidence about students participating in some kind of conferences with their research works.

2 students (1.9% of the Programme students) yearly participate in Erasmus mobility. This number is rather low.

Incentive scholarships are awarded according to study results.

Virtual learning environment MOODLE for all study subjects from September 1, 2012. Apart from Moodle, it is not clear, how electronic space is used for study schedules and other information in the course of studies.

The website of the College contains incomplete and outdated information on the aims, LOs of the programme and its contents.

Accumulated mark methodology is being used, this allowing equal distribution of learning and assessment efforts over the whole semester. Final assessment for some study-field subjects is not an exam, but self-study work (projects).

Students point to too many written assignments in the Programme.

There are no graduates yet. Social partners, employing students or taking students for practice, mention a need for skills in using modern IT system development tools, like Java programming language or MS NET development environment.

6. Programme management

Responsibilities for decisions and monitoring of the implementation of the programme are related to the Programme Study committee of 7 members. Individual members are listed in the self-study document, their qualification is sufficient for the Programme.

Teacher opinions are collected using their self-study reports that are written after each study year. Every year 2 meetings with students (1 – with first-year students, 1- with the rest) are organized with the goal of student feedback collection. Student feedback is also collected using surveys (usually Moodle forms) on separate study subjects and Programme in general. However, it is not clear, how this data is analysed and transformed into Programme improvement actions.

Internal evaluation is described for personnel separate departments of VC – it is done yearly. However, the procedure of further analysis of internal evaluation data and use of the results for the Programme improvement is not explicitly defined.

Stakeholders are involved in ensuring the quality of the Programme. Social partners have possibilities to discuss with the staff and suggest Programme improvements. 1 study subject was introduced after a suggestion from social partners. However, there is no evidences of this being regular process rather than occasional cases.

The quality assurance measures for the Programme are in line with general study quality management system for VC. Self-analysis of staff and departments of different levels is stated to be the main axis of this quality assessment. Faculty fills-out self-assessment forms each year.

However, the procedure of the use of the self-assessment results for the Programme improvement is not explicitly defined. Also, it is not clear, how often the Programme improvement is being done.

III. RECOMMENDATIONS

1. To ensure public accessibility of Programme aims and learning outcomes in both Lithuanian and English languages.
2. To revise the links between the Programme and separate study subject learning outcomes.
3. To improve the contents of the Programme, taking into account the recommendation of the ACM Curriculum Guidelines, adding knowledge and skills in modern software development tools.
4. To increase academic mobility of students and teachers.
5. Ensure, that all mandatory learning materials accessible to students.
6. To increase the involvement of students in the research activities.
7. Improve the quality system by clearly defining the whole feed-back loop, including how the collected information is analyse, how and how often Programme improvements are done.

IV. SUMMARY

The Vilnius College (VC) actively supports and implements the main strategy requirements of the rapidly developing knowledge society. The *Information systems* professional bachelor college study programme is aimed at providing specialists with higher non-university education being able to combine knowledge and skills in information technologies, business environment and information systems.

The Programme aims and learning outcomes are defined, but the links of Programme learning outcomes and separate subject learning outcomes has to be revised. Their public visibility is weak – only the learning outcomes of the Programme, but not the aims of the Programme are presented on the website of the institution. Also, it is desirable to link the Programme and especially study subject LOs with LOs recommended by relevant regulating or recommending documents, such as “*General Regulation on Technology science (engineering) studies*” document and ACM Curricula Guidelines.

The curriculum design is largely rational and adequate to the learning outcomes set. However, Subject areas, such as software engineering, human-computer interaction, computer architecture, relevant to formulated LOs and recommended by *ACM Curriculum Guidelines*, should be represented better in compulsory study field subjects, not just in elective ones.

The Programme is provided by staff, mainly Lectors, possessing Master degree. There are 5 teachers with Doctor degree, teaching 12 out of 32 study field subjects. Teachers have adequate academical and practical experience - 18 out of 30 teaching staff members have practical experience in the field of the subjects taught. About 1/3 of the members of the staff have prepared and published some kind methodical material and/or research in the area of their subjects taught. Teacher mobility and participation in Erasmus exchange should be more intensive.

VC has good infrastructure – 7 general purpose computer labs and specialized labs for micro-computing, software engineering, English language, Physics, etc. Computers are equipped with modern general-purpose and specialized software. However, software for business system modeling is lacking.

Not all teaching materials, listed as mandatory in course descriptions, are accessible at VC library. Modern open-source electronic material is specified only for 4 subjects. Teaching resources in MOODLE are available for all study subjects from September 1st, 2012.

The organization of studies should be revised, increasing the use of electronic media, video recording of lectures. The amount of written assignments could be reduced, combining with other forms of assessment. Students should be more active in Erasmus exchange and research work.

The quality assurance measures for the Programme are in line with general study quality management system for VC. Internal self-assessment results, student feedback, input from social

partners is used for planning the Programme improvements. However, the procedure of the use of the self-assessment results for the Programme improvement is not explicitly defined. Also, it is not clear, how often the Programme improvement is being done.

Recommendations for improvement see above.

V. GENERAL ASSESSMENT

The study programme *Information Systems* (state code – 653E10002) at Vilnius College is given **positive** evaluation.

Study programme assessment in points by fields of assessment.

No.	Evaluation Area	Evaluation Area in Points*
1.	Programme aims and learning outcomes	3
2.	Curriculum design	3
3.	Staff	4
4.	Material resources	3
5.	Study process and assessment (student admission, study process student support, achievement assessment)	3
6.	Programme management (programme administration, internal quality assurance)	3
	Total:	19

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

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

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

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

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