

STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

Vilniaus Gedimino technikos universiteto

INFORMACINIŲ SISTEMŲ INŽINERIJOS

STUDIJŲ PROGRAMOS (612E15001)

VERTINIMO IŠVADOS

**EVALUATION REPORT
OF INFORMATION SYSTEMS ENGINEERING**

STUDY PROGRAMME (612E15001)

at Vilnius Gediminas Technical University

Grupės vadovas: Prof. Vladimir Oleshchuk
Team Leader:

Grupės nariai: Prof. Jūri Kiho
Team members: Dr. Lina Kankevičienė
Adomas Svirskas
Paulius Simanavičius

Išvados parengtos anglų kalba
Report language - English

Vilnius
2012

DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	Informacinės elektroninės sistemos
Valstybinis kodas	612E15001
Studijų sritis	Technologijos mokslų studijų sritis
Studijų kryptis	Informatikos inžinerija
Studijų programos rūšis	Universitetinės studijos
Studijų pakopa	Pirmoji
Studijų forma (trukmė metais)	Nuolatinė (4 metai)
Studijų programos apimtis kreditais	240 kreditų
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Informatikos inžinerijos bakalauras
Studijų programos įregistravimo data	2009-08-31

INFORMATION ON ASSESSED STUDY PROGRAMME

Name of the study programme	Information System Engineering
State code	612E15001
Study area	Technological Sciences
Study field	Informatics Engineering
Kind of the study programme	University studies
Level of studies	First
Study mode (length in years)	Full-time (4 years)
Scope of the study programme in credits	240
Degree and (or) professional qualifications awarded	Bachelor of Informatics Engineering
Date of registration of the study programme	2009-08-31

© Studijų kokybės vertinimo centras
The Centre for Quality Assessment in Higher Education

CONTENTS

I. INTRODUCTION	4
II. PROGRAMME ANALYSIS	5
1. Programme aims and learning outcomes.....	5
2. Curriculum design	5
3. Staff	6
4. Facilities and learning resources	7
5. Study process and student assessment.....	8
6. Programme management	9
III. RECOMMENDATIONS	11
IV. SUMMARY	12
V. GENERAL ASSESSMENT	13

I. INTRODUCTION

The Lithuanian Centre for Quality Assessment in Higher Education has invited four independent experts and one representative of students (hereinafter called Expert Team) from Estonia, Lithuania, Norway and the Netherlands to review and assess the higher education second cycle study (Master) programme *Information System Engineering* (state code 612E15001, informatics engineering study field) at Vilnius Gediminas Technical University (hereinafter VGTU). The study programme of *Information System Engineering* (ISE) (further Programme) is coordinated by the Faculty of Electronics and conducted by teaching staff of the following departments: Department of Electronic Systems, Department of Computer Engineering, and Department of Telecommunication Engineering.

The Expert Team visited the Faculty on October 26, 2012¹.

The Expert Team met the administrative staff (4) of the Faculty represented by the Dean and three Vice Deans. General issues, such as the history of the faculty, structure, financing, quality improvement measures, and reasons for students' intake decrease and dropouts, etc. were discussed.

On the meeting with staff responsible for preparation of the Self-Analysis Report (6) the clear and complete answers to the questions concerning less uncovered in the self-assessment report issues were given. After that, a meeting with members of teaching staff (14) of the Programme took place.

The Expert Team conducted also interviews with students (17). The Expert Team was familiarized with students' attitude towards the Programme; the students expressed mostly positive opinions about the Programme. The Expert Team had possibility to familiarize with students' final works. Finally, in separate meetings, the Expert Team met 9 graduates and 11 social partners. They have expressed positive attitudes about the Programme.

At the conclusion of the visit, the Expert Team conducted a meeting with staff of the Faculty and presented general remarks related to the visit and highlighted some strengths and weaknesses of the Programme under review.

¹ During this day (October 26) the Expert Team had actually a joint visit concerning 2 study programmes at the Faculty. Some of the meetings with the Programme stakeholders were performed jointly.

In the following, the findings of the Expert Team are outlined. The Self-assessment report submitted by the 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

The programme aims and learning outcomes are well defined, clear, and publicly accessible in the section “Studijų programos“ of the University website (both in Lithuanian and English). The programme aims and learning outcomes, generally, are based on professional requirements, public needs and the needs of the labour market. The programme aims and learning outcomes are consistent with the type and level of studies and the level of qualifications offered. The name of the programme, its learning outcomes, content and the qualifications offered are compatible with each other.

The links between learning outcomes and the learning outcomes of study subjects as well as between the studies and the methods of evaluation of students’ achievements are outlined in the description of each subject. Topics of study subjects are also matched with the learning outcomes. The topics of the study subjects are detailed enough; they are compatible with modern contexts, based on faculty research results and recent literature.

2. Curriculum design

The *Information System Engineering* study programme meets the requirements of the Lithuanian legal acts and normative documents, the Statute of Vilnius Gediminas Technical University, and regulatory documents governing the development of study programs and procedures of studies. Study subjects and/or modules are spread evenly, their themes generally are not repetitive. The content of the subjects and/or modules generally is consistent with the type and level of the studies. However, prerequisites description should be corrected to be more specific and reflect real requirements. It is also advisable to add at least one book in English to reading list for each subject.

The total scope of studies, the scope of individual modules and groups of modules (including theoretical subjects, course papers, practical work and final exams), final exams, student independent and auditorium work meet the regulations on studies legislation. Topics delivered in

the subjects are up-to-date and sufficient to achieve respective learning outcomes. The study programme provides such innovative methods as problem-based learning and project-based learning, there are organized group homework and course projects, analysed situations, work results are discussed in public debates and at defence of works. So, forms and methods used in classes are satisfactory.

The scope of the programme is sufficient to ensure learning outcomes. The content of the Programme generally reflects the latest achievements in science and technologies being an issue of higher level studies. It is also advisable to add some specialization subjects from the beginning to increase student motivation, give real choices for electives (if it is announced that there is a choice then students must have such a choice).

Students as well as the academic staff seem to be enthusiastic about their activities and challenges.

3. Staff

The study programme of *Information Systems Engineering* is delivered in both Lithuanian and English. The staff responsible for the study programme meets legal requirements. 39 teachers (8 professors, 22 associate professors, and 8 lecturers) participate in the study program delivered in Lithuanian. Meanwhile, 30 teachers (7 professors, 20 associate professors, and 3 lecturers) teach students in English. The number of the teaching staff is adequate to ensure learning outcomes.

The average age of academic staff is 48 years. The staff involved in the study program is as follows: 7 lecturers (50 years old in average), 30 Assoc. Professors (44 years old in average), 10 Professors (60 years old in average). Teaching staff turnover is able to ensure an adequate provision of the Programme.

All the teachers involved in the study program participate in the research projects run by the Department of Electronic Systems. According to the regulations at VGTU, a professor or associate professor needs to plan an internship of at least 2 months (or at least 1 month for placements abroad) outside the university every 5 years. This encourages teachers to explore practical aspects of work in their field of research and update the knowledge needed for staying

current with the study program. Thus far, 20–25 % of teachers have their internship abroad. The qualifications of the teaching staff are adequate to ensure learning outcomes.

Two teachers involved in the study programme have travelled on academic purpose in the last 5 years abroad (R. Martavičius – Germany; A. Ušinskas – Portugal, France, and Great Britain). The teachers involved in the study program participate in research as well. The staff of the department in charge of the study program publishes 11 to 19 papers per year (2007 – 11; 2008 – 13; 2009 – 15; 2010 – 14; 2011 – 19) in journals on the ISI Web of Science list. Each professor presents scientific results at one or two conferences each year at average. It is also advisable to introduce guest lecturers from industry in the courses.

4. Facilities and learning resources

Most of the studies of *Information Systems Engineering* take place on the premises of the Electronics Faculty. The Faculty has sufficient facilities to accommodate the demands of the study process. This includes 12 classrooms of various seating capacity amounting to 920 m² in total. All the classrooms are equipped with stationary multimedia facilities. There are 22 laboratories, occupying 1220 m² in total, in the Electronics Faculty. Each laboratory can offer 15–20 work places. It is enough to reach study aims and learning outcomes.

Technical and sanitary conditions in the laboratories and classrooms is satisfactory. All the premises correspond to the modern requirements of work safety and hygiene. The higher education institution has adequate arrangements for students' practice.

All VGTU study programs are available for students with physical disabilities, because the University is equipped with a special ramp, a special parking space and the building has the latest comfortable appliances. The computer equipment (both hardware and software) is satisfactory for achieving study aims (with respect to the number of students).

The literature required for students of *Information Systems Engineering* is available at the Central Library of VGTU and in the reading room of the Electronics Faculty. The Central Library offers a collection of 0.5 million books and periodicals. The reading room is equipped with 16 seats for the students of Electronics Faculty. The teaching staff of Electronics Faculty publishes study materials (lecture slides, teaching/learning materials, laboratory work schedules)

on the intranet and e-stud.vgtu.lt site. Only several subjects designed for the *Information Systems Engineering* curriculum are available at Moodle (moodle.vgtu.lt).

In summary, the material facilities of the Electronics Faculty correspond to the economic situation of the state and are sufficient for the successful implementation of the *Information Systems Engineering* study programme.

Students are satisfied with the material and learning resources that the university gives them.

5. Study process and student assessment

The admission procedure is complete, adequate and well organized. The organization of the study process ensures an adequate provision of the program and the achievement of the learning outcomes. However, it is important to give real choices for electives (if it is announced that there is a choice then students must have such a choice).

The students are encouraged to participate in research and applied research activities. The activity is organised as the additional spare time activity or as a part of the study process. The results of the students scientific and applied science activities are announced at the Conference of the Young Scientists “Electronics and Electrical Engineering” organised yearly by the Faculty of Electronics. The students of Information Systems Engineering study programme have the opportunity to participate in student mobility programme (2007 – 9, 2008 – 6, 2009 – 8, 2010 – 6, 2011 -2) e.g., Erasmus.

The knowledge assessment system is criterion-proportional and according to it the students' knowledge level is assessed by the criteria set by the lecturer, and each grade meets the achievement of certain learning outcomes. However, the drop out level is too high (51% was last year). The students of the *Information Systems Engineering* study programme participate in Erasmus exchange program.

The higher education institution ensures an adequate level of academic and social support. VGTU students are awarded with the several types of scholarships: Social, Incentive memorial and One-time. VGTU students may also receive allowances. Students are provided with dormitory rooms in accordance with the procedure approved by the VGTU without exceptions for students of the specific study programme in proportion to the demand, social and material situation.

Bachelor's thesis is independent work of a student in the first-cycle studies demonstrating the student's knowledge in information systems engineering and the ability to apply that knowledge in formulating and solving engineering problems. During the thesis defence procedure, the graduating students show their ability to convey information, ideas, problems, and solutions to specialists and non-specialists. All this indicates that the student has learning skills necessary for further independent study.

6. Programme management

The management of the study programme and the process of decision making are regulated by VGTU Statute, VGTU general faculty provisions, VGTU general faculty council provisions, VGTU study provisions, VGTU study committee provisions, VGTU faculties' study committee's provisions. These provide a detailed description of the study programme management process.

The ISE study programme committee and the Study Committee of the Electronics Faculty lead the methodical cooperation with the other heads of the Faculty departments and teachers implementing the programme. All the university teachers are involved in the preparation of the study programmes, while the study subject descriptions, with regard to the comments and requests of the social partners, are prepared in the departments. There are performed the student polls at the end of a semester. In the university, study programme assessment and improvement is performed every 2–4 years (2001, 2003, 2007, and 2011). Dropout is rather low: significantly more than 50% receive diploma. No external assessment has been carried out for of this study programme.

Stakeholders (students, academics, employers, alumni, etc.) have impact on the improvement of program quality. Their opinion is considered while upgrading the programme, individual courses and study materials. Social partners participate in the activity of the Committee of Studies. Employers' representative Director of UAB "Gaudrè" V. Rinkevičius and the President of Students' agency take part in the activity of the Committee. Moreover, director of Telecommunication Department of UAB "HNIT-Baltic" V. Ramonaitis, Senior Engineer at the UAB "Wilibox" V. Mikelaitis, are serving as Chairmen in the Committee for Defence of Theses. The programme has established the close relationships with the companies and organizations working in information systems engineering and similar industries. Active cooperation is maintained with the companies of the association "Infobalt". Co-operation is also established with „Barclays Technology Centre Limited Lithuania“, „Microsoft Lietuva“, UAB "Teltonika",

UAB “Kemek Engineering”, UAB “Elintos prietaisai”, UAB “Onninen”, UAB “Euroelektronika”, UAB “TeleSoftas”, UAB “Šviesos konversija”, etc.

III. RECOMMENDATIONS

1. Prerequisites description should be corrected to be more specific and reflect real requirements.
2. Add at least one book in English to each reading list.
3. Comments/feedback from students on courses evaluations should be available on the course website to inform students on results.
4. Add some specialization subjects from the beginning to increase student motivation.
5. Introduce guest lecturers from industry in the courses.
6. Give real choices for electives (if it is announced that there is a choice then students must have such a choice).
7. Lecturers of the study program of the *Information Systems Engineering* could much more participate in ERASMUS programme.

IV. SUMMARY

The study programme of *Information System Engineering* (state code 612E15001, informatics engineering study field) is coordinated by the Faculty of Electronics and conducted by teaching staff of the following departments: Department of Electronic Systems, Department of Computer Engineering, and Department of Telecommunication Engineering.

The Expert Team was in general satisfied with the program. It was also satisfied with the competence and qualifications shown by the staff of the departments. The master students showed a serious determination toward their studies and a mature attitude regarding the importance of higher education. The employers of students found the qualifications of students starting their employment well.

The most positive aspects are: the general structure and management of education policy from the side of the Faculty are well organized and adequate; the admission procedure is complete, adequate, and well-organized; the material facilities are substantial; the faculty maintains business relations with many business companies; teaching in English (and some theses in English) and subsequently, good English knowledge of graduates; students understand both hardware and software sides of IT; Erasmus exchange including (relatively large number of incoming Erasmus students).

The issues, which could be improved are: the output percentage from the program could be higher; lack of the efficient system for students to influence the quality assurance of the educational process (survey is conducted but only after graduation); electives are often impossible to take; outgoing exchange should be promoted more.

V. GENERAL ASSESSMENT

The study programme INFORMATION SYSTEMS ENGINEERING (state code – 612E15001) at Vilnius Gediminas Technical University 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.

Grupės vadovas:

Team Leader:

Vladimir Oleshchuk

Grupės nariai:

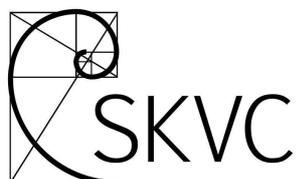
Team members:

Jūri Kiho

Lina Kankevičienė

Adomas Svirskas

Paulius Simanavičius



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

Vilniaus Gedimino technikos universiteto

INFORMACINIŲ SISTEMŲ INŽINERIJOS
STUDIJŲ PROGRAMOS (612E15001)
VERTINIMO IŠVADOS

EVALUATION REPORT
OF *INFORMATION SYSTEMS ENGINEERING*
STUDY PROGRAMME (612E15001)
at Vilnius Gediminas Technical University

Grupės vadovas: Prof. Vladimir Oleshchuk
Team Leader:

Grupės nariai: Prof. Jüri Kiho
Team members: Dr. Lina Kankevičienė
Adomas Svirskas
Paulius Simanavičius

Išvados parengtos anglų kalba
Report language - English

DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	Informacinių sistemų inžinerija
Valstybinis kodas	612E15001
Studijų sritis	Technologijos mokslų studijų sritis
Studijų kryptis	Informatikos inžinerija
Studijų programos rūšis	Universitetinės studijos
Studijų pakopa	Pirmoji
Studijų forma (trukmė metais)	Nuolatinė (4 metai)
Studijų programos apimtis kreditais	240 kreditų
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Informatikos inžinerijos bakalauras
Studijų programos įregistravimo data	2009-08-31

INFORMATION ON ASSESSED STUDY PROGRAMME

Name of the study programme	Information System Engineering
State code	612E15001
Study area	Technological Sciences
Study field	Informatics Engineering
Kind of the study programme	University studies
Level of studies	First
Study mode (length in years)	Full-time (4 years)
Scope of the study programme in credits	240
Degree and (or) professional qualifications awarded	Bachelor of Informatics Engineering
Date of registration of the study programme	2009-08-31

© Studijų kokybės vertinimo centras
The Centre for Quality Assessment in Higher Education

<...>

Studijų kokybės vertinimo centras

<...>

V. GENERAL ASSESSMENT

The study programme INFORMATION SYSTEMS ENGINEERING (state code – 612E15001) at Vilnius Gediminas Technical University 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.

<...>

IV. SUMMARY

The study programme of *Information System Engineering* (state code 612E15001, informatics engineering study field) is coordinated by the Faculty of Electronics and conducted by teaching staff of the following departments: Department of Electronic Systems, Department of Computer Engineering, and Department of Telecommunication Engineering.

The Expert Team was in general satisfied with the program. It was also satisfied with the competence and qualifications shown by the staff of the departments. The master students showed a serious determination toward their studies and a mature attitude regarding the importance of higher education. The employers of students found the qualifications of students starting their employment well.

The most positive aspects are: the general structure and management of education policy from the side of the Faculty are well organized and adequate; the admission procedure is complete, adequate, and well-organized; the material facilities are substantial; the faculty maintains business relations with many business companies; teaching in English (and some theses in

English) and subsequently, good English knowledge of graduates; students understand both hardware and software sides of IT; Erasmus exchange including (relatively large number of incoming Erasmus students).

The issues, which could be improved are: the output percentage from the program could be higher; lack of the efficient system for students to influence the quality assurance of the educational process (survey is conducted but only after graduation); electives are often impossible to take; outgoing exchange should be promoted more.

III. RECOMMENDATIONS

8. Prerequisites description should be corrected to be more specific and reflect real requirements.
9. Add at least one book in English to each reading list.
10. Comments/feedback from students on courses evaluations should be available on the course website to inform students on results.
11. Add some specialization subjects from the beginning to increase student motivation.
12. Introduce guest lecturers from industry in the courses.
13. Give real choices for electives (if it is announced that there is a choice then students must have such a choice).
14. Lecturers of the study program of the *Information Systems Engineering* could much more participate in ERASMUS programme.

<...>

**VILNIAUS GEDIMINO TECHNIKOS UNIVERSITETO ANTROSIOS PAKOPOS
STUDIJŲ PROGRAMOS *INFORMACINIŲ SISTEMŲ INŽINERIJA* (VALSTYBINIAI
KODAI –612E15001, 61207T104) 2013-01-07 EKSPERTINIO VERTINIMO IŠVADŲ NR.
SV4-5 IŠRAŠAS**

<...>

V. APIBENDRINAMASIS ĮVERTINIMAS

Vilniaus Gedimino Technikos universiteto studijų programa *INFORMACINIŲ SISTEMŲ INŽINERIJA* (valstybinis kodas – 612E15001) vertinama teigiamai.

Eil. Nr.	Vertinimo sritis	Srities įvertinimas, balais*
1.	Programos tikslai ir numatomi studijų rezultatai	3
2.	Programos sandara	3
3.	Personalas	4
4.	Materialieji ištekliai	3
5.	Studijų eiga ir jos vertinimas	3
6.	Programos vadyba	3
	Iš viso:	19

- * 1 - Nepatenkinamai (yra esminių trūkumų, kuriuos būtina pašalinti)
- 2 - Patenkinamai (tenkina minimalius reikalavimus, reikia tobulinti)
- 3 - Gerai (sistemiškai plėtojama sritis, turi savitų bruožų)
- 4 - Labai gerai (sritis yra išskirtinė)

IV. SANTRAUKA

Studijų programą „Informacinių sistemų inžinerija“ (valstybinis kodas 612E15001, informatikos inžinerijos studijų kryptis) koordinuoja Elektronikos fakultetas, o vykdo Elektronikos sistemų katedros, Kompiuterių inžinerijos katedros ir Telekomunikacijų inžinerijos katedros dėstytojai.

Ekspertų grupė liko patenkinta programa. Katedrų darbuotojai pademonstravo savo kompetencijas ir kvalifikaciją. Magistrantai parodė didelį ryžtą studijų atžvilgiu ir brandų požiūrį į aukštojo mokslo svarbą. Studentų darbdaviai patenkinti absolventų, kurie pradėjo dirbti, kvalifikacija.

Teigiami šios programos aspektai: bendra fakulteto švietimo politikos struktūra ir vadyba yra gerai organizuota ir tinkama; priėmimo tvarka yra aiški, tinkama ir gerai organizuota; materialinė

bazė yra pakankama; fakultetas palaiko darbinius ryšius su daugeliu verslo įmonių; dėstymas anglų kalba (ir kai kurie baigiamieji darbai anglų kalba) ir, todėl, geros absolventų anglų kalbos žinios; studentai supranta tiek techninės, tiek programinės įrangos IT dalis; „Erasmus“ mainų programa (gana didelis atvykusių pagal „Erasmus“ programą studentų skaičius).

Dalykai, kuriuos būtų galima tobulinti: programą baigusiujų procentas galėtų būti didesnis; trūksta veiksmingos sistemos, kad studentai galėtų daryti įtaką ugdymo proceso kokybės užtikrinimui (tyrimas atliekamas tik po studentų baigimo); dažnai studentai neturi galimybės rinktis iš pasirenkamųjų dalykų; reikėtų labiau skatinti išvykimą pagal mainų programas.

III. REKOMENDACIJOS

1. Turėtų būti pakoreguotas išankstinių priėmimo sąlygų aprašymas, kuris būtų konkretesnis ir atspindėtų realius reikalavimus.
2. Į kiekvieną pagrindinės literatūros sąrašą įtraukti bent vieną šaltinį anglų kalba.
3. Kurso tinklalapyje turėtų būti skelbiami studentų komentarai ir (arba) grįžtamasis ryšys apie kurso įvertinimus, kad studentai žinotų rezultatus.
4. Siekiant padidinti studentų motyvaciją jau studijų pradžioje įtraukti keletą specializacijos dalykų.
5. Kursų metu įtraukti kviestinius dėstytojus iš atitinkamos srities.
6. Suteikti realias galimybes rinktis pasirenkamuosius dalykus (jei skelbiama, kad gali rinktis, studentai privalo pasinaudoti teise rinktis).
7. Studijų programos „Informacinių sistemų inžinerija“ dėstytojais galėtų aktyviau dalyvauti ERASMUS programoje.

<...>

Paslaugos teikėja patvirtina, jog yra susipažinusi su Lietuvos Respublikos baudžiamojo kodekso¹ 235 straipsnio, numatančio atsakomybę už melagingą ar žinomai neteisingai atliktą vertimą, reikalavimais.

Vertėjos rekvizitai (vardas, pavardė, parašas)

¹ Žin., 2002, Nr.37-1341