STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

Klaipėdos universiteto

TECHNINIŲ INFORMACINIŲ SISTEMŲ INŽINERIJOS

MAGISTRANTŪROS STUDIJŲ PROGRAMOS (621E15004)

VERTINIMO IŠVADOS

EVALUATION REPORT

OF *TECHNICAL INFORMATION SYSTEMS ENGINEERING*

MASTER STUDY PROGRAMME (621E15004)

at Klaipeda University

Grupės vadovas: Team Leader:	Prof. Vladimir Oleshchuk (group leader)
Grupės nariai: Team members:	Prof. Jüri Kiho Dr. Lina Kankevičienė Adomas Svirskas Paulius Simanavičius (student)

Išvados parengtos anglų kalba
Report language - English

Vilnius
2012

DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	Techninių informacijų sistemų inžinerija
Valstybinis kodas	621E15004
Studijų sritis	Technologijos mokslų studijų sritis
Studijų kryptis	Informatikos inžinerija
Studijų programos rūšis	Aukštojo mokslo universitetinės studijos
Studijų pakopa	Antra pakopa, magistrantūra
Studijų forma (trukmė metais)	2008, 2 m., Nuolatinė
Studijų programos apimtis kreditais	120 kreditų
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Informacinių sistemų inžinerijos magistras
Studijų programos įregistravimo data	2008

INFORMATION ON ASSESSED STUDY PROGRAMME

Name of the study programme	***Technical Information Systems Engineering***
State code	621E15004
Study area	Technological Sciences
Study field	Engineering
Kind of the study programme	University studies
Level of studies	Second
Study mode (length in years)	Continuous (2 years)
Scope of the study programme in credits	120
Degree and (or) professional qualifications awarded	Master of Informatics Engineering
Date of registration of the study programme	2008

CONTENTS

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 ***Technical Information Systems Engineering*** (state code 621E15004, informatics engineering study field) at the Klaipeda University (KU). The study programme under evaluation is directed by the Department of Informatics Engineering (IED) of the Marine Engineering Faculty.

The Expert Team visited the Faculty on October 22.

First, the Expert Team met the administrative staff of the Faculty represented by the Dean of the Marine Engineering Faculty and Chairman of the Faculty Council. Next, at the meeting with staff members (6) responsible for preparation of the Self-assessment report the Expert Team was given answers to the questions concerning less covered in the Self-assessment report issues. After that, a meeting with members of teaching staff (10) took place.

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

The Expert Team conducted also interviews with some students (11). The Expert Team was familiarized with students' attitude towards the study programme. The meeting was carried out in an active and constructive atmosphere. The students expressed positive as well as critical opinions about the programme.

Finally, the Expert Team met graduates (11, but only those who graduated in 2011 and 2012) and potential future employers/social partners (7) of the students. They expressed positive attitude about the study programme. At the conclusion of the visit, the Expert Team conducted a meeting with staff of the Faculty and highlighted some strengths and weaknesses of the Programme.

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 aims of the programme indicated in the self-evaluation document are relevant and at appropriate level for a master's programme. Information about this study programme accessible in the section “Studijos“ of the University‘s department of Informatics Engineering (http://iik.ku.lt). However, there is no information about the program‘s aims and learning outcomes in English version of University‘s website.

The purpose of the study programme is compatible with the mission of Klaipeda University, moreover, research in the field of Informatics is one of the scientific priorities in Lithuania. The distinctive exceptionality of the Programme can be evidently seen in some especial features related with the high-priority Baltic Sea marine mission of the Klaipeda University. So the direct involvement of the Department in the development of the Integrated Science, Studies and Business Centre (Valley) for Lithuanian maritime sector” should be mentioned. So the research and development activities of the Programme are related with the great importance of autonomic and cognitive control of logistics, intermodal terminal processes, lading system "ship to ship" as well as rightly coincided with the needs of scientific development of smart technologies in Lithuania in accordance with the international directives.

The aims of the programme are strongly correlated with its purpose. They are support general development of exact and technical sciences in the country. Graduates of this study programme will get a good insight into fundamental and emerging computer science disciplines and on their application in design and development of modern information systems. It allows programme graduates to choose both the academic career track and and work in industry.

In general, too many kinds of learning outcomes of the study programme (totally 53 different learning outcomes) are difficult to deal with: *Knowledge* is developed by 8 different learning outcomes of the study program; *Intellectual abilities* are developed by 16 learning outcomes; *Practical abilities* are developed by 18 learning outcomes; *Transferable abilities* are developed by 11 learning outcomes. The number of learning outcomes of the study programme should be reduced.

The relation between subjects and learning outcomes is presented in Table 2.1.2, but the relation between learning outcomes of the subjects and the learning outcomes of the study programme is not presented.

2. Curriculum design

The curriculum reflects the needs of the national and regional markets. Traditional teaching is enhanced by modern e-learning methods including the use of electronic teaching materials, wide application of virtual learning environment and learning methods, such as modelling and simulation, group project work.

Study programme is adapted to meet the requirements of the study programmes regulation documents. Relations between study subjects, as well as their consequences, are preserved. Nevertheless, prerequisites must be more specific and curriculum should be consolidated (on the one hand, number of small subjects has to be reduced ; on the other hand, more specialized elective subjects have to be offered).

The study programme content generally confirms to the requirements of legal acts and enables students to achieve learning outcomes.

Topics delivered in the subjects are up-to-date and sufficient to achieve respective learning outcomes. Forms and methods used in classes are satisfactory.

3. Staff

The competence of the teaching staff is sufficient to reach aims and learning outcomes of the programme. The teaching staff is stable and its changes are minimal. The department is very active, it has conducted many projects which are related with study quality and equipment improvement. Some of the most important are: 2006-2008 – "Curriculum in Informatics Engineering Systems at Master Level" (KU-KTU-VGTU), ESF/2004/2.5.0-03-407/BPD-178; 2010-2012 – "Development of Joint Research and Training Centre in High Technology Area" Cross border JRTC, INTERREG LAT-LIT, No: LV-LT/1.1./LLII-061/2010; 2011-2014 – Latvia-Lithuania Cross Border Cooperation Programme Project "JRTC Extension in Area of Development of Distributed Real-Time Signal Processing and Control Systems" (INTERREG, LLIV-215, Cross-border DISCOS).

The staff employed for the implementation of the programme complies with the requirements of legal acts. In the programme, 15 employed teachers have PhD degree, assisted by 8 PhD students. The core of the academic staff involved in the program consists of 9 professors (39%), 4 associate professors (17%) and 2 young lecturers PhD‘s (9%), as well as, 8 PhD and Ms students (35%), that assist the professors for the Master researches and preparation of the

graduate works (Table 2.3.1). About 50 % of the hours in the curriculum are taught by professors. During the assessment period 8%-15% of the professors and the staff of the Department (7 lecturers) participated in the Erasmus (staff mobility programme) and other exchange programs.

The Staff of the Department of Informatics Engineering actively participate in the scientific work and preparation of textbooks and teaching e-material for students (Table 2.3.5).

The study programme corresponds to the research interests of the teaching staff. The staff members expertise is sufficient to assess or modify (if necessary) the whole teaching process, associated with the study programme.

During the assessment period, the majority of teaching staff participated in various international activities. On the other hand, the scope of regulation and promotion of teachers' professional development is comparatively low (many opportunities are left not realized). Support for conference participation should be formalized and improved. Sabbatical leave support is recommendable to be implemented. Despite the abovementioned minor drawbacks (which can be easily overcome) this evaluation field as a whole may be assessed as very good.

4. Facilities and learning resources

There are a sufficient number of lecture rooms and computer classes for both implementing the study programme and performing individual assignments. Technical (safety) and hygiene conditions of the premises meet the prescribed requirements and norms. Working places and working conditions (in particular, opening hours) in libraries (reading rooms) for maintaining high-level studies are quite good, except some facilities that need some renovation.

Provision with printed publications required for the study programme is satisfactory. The library contains thousands of books and journals on mathematics, statistics, computer science, economics, etc. Access to electronic databases through Internet connection is available.

The computer hardware and software are up-to-date and legal. Available equipment is suitable and sufficient for studies.

Studies of Informatics Engineering mainly take place in the Faculty of Marine Engineering (JTF) of KU. Recent developments allow providing auditoriums with modern computers, laboratories

and networking equipment (including video conferencing equipment) and improve the ergonomics and hygienic quality of the premises.

The Department of Informatics Engineering has five study and research laboratories available: Information Systems Prototyping Laboratory (16 seats), Laboratory of Software Engineering (18 seats), Laboratory of Virtual Instruments Engineering (16), Smart Control Systems Laboratory (10) and Laboratory of Optical and Analogue Electronics (8). The ongoing renewal of the Programme is particularly related with the origination of new research laboratories equipped with the modern installations. The purposeful establishing of these labs is made according to the national research priorities and is funded by a number of national and international research and development projects nowadays carrying out by our Department.

All the laboratories are equipped with the newest software and hardware equipment. IED has the possibility to use resources of the partner Computer Science (situated in the Faculty of Natural Sciences and Mathematics) Department: specialised library of periodicals, books, teaching resources and didactic works. In the library 3 new computer workplaces are installed with an access to full-text electronic databases. The programme also supports the use of modern Mechatronics Institute resources for R&D with the business partners using common laboratories of the Marine Engineering Faculty.

Students of the Department of Informatics Engineering can have their practical training in the KU labs, research centres and institutions, as well as in business and industry companies. An emphasis on project activities and appropriate development of modern infrastructure for research and study allow the Department and the Programme to delineate new prospective research directions and, what is probably the most important, to attract young researchers to ensure permanent replenishment of the academic staff of the Programme/Department.

Students have good access to existing methodological publications. Academic staff of IED produced teaching materials in Lithuanian and English languages. Every subject taught by the academic staff of the Department is already supported by an electronic teaching material available trough the University’s virtual learning environment (http://vma.ku.lt/moodle/).

5. Study process and student assessment

Admission to the programme is organized according to the legal acts and regulations. The ratio of students who completed graduate studies is exceptionally good (Table 2.5.2.). Students are

very motivated; most of them continue studies to PhD. The Staff of the Department of Informatics Engineering involve master degree students into scientific activities and research projects, various seminars and workshops (including international). Through the years, together with the staff of the department, students have prepared 40 scientific works in the new and modern laboratories of IED (Annex P6).

Students have opportunities to participate in student mobility programmes, but all of them went only to Latvia, Ventspils University College (total – 7 students, Table 2.5.3).

Academic and social support is provided to students. The key information associated with studies is provided on the website. Academic support and financial aid are also provided by the Study Department of the University. Additional support for students is provided through virtual learning environment (http://vma.ku.lt) and other communication means (e.g. by Skype, e-mail etc.), by the access to other electronic teaching materials, additional consultancy hours and computer facilities for independent studies. The academic support is provided both at the Faculty and the Department levels.

The Expert Team would like to highlight the following deficiences: there are too few topics for master theses and student research projects which are offered joint with social partners/stakeholders; student projects works are mostly individual not requiring work in teams; it is necessary to increase international exchange (both for students and for teaching staff).

6. Programme management

In general the relationships between students and lecturers are very close, students are sufficiently involved in project activities, a good feedback from student's is maintained, e.g., students wanted to add laboratory with new *Programmable Logic Controllers* (PLC and the leading department of the study programme found possibilities to update the laboratory. Most of the graduates imployed by KU in various positions.

The study programme is improved and new academic subjects are included considering the opinions and comments of students, employers and other stakeholders.

Graduates and employers' surveys are conducted that serve for monitoring of graduates' career track, for collecting their opinion about the match of knowledge and skills they receive during the studies (learning outcomes) and the requirements they face at their work places; the

evaluation of the programmes and the data received allow to update the anticipated study skills and introduce new relevant research skills.

The University has an internal system of study quality assurance based on the provisions of study quality assurance in the European space of higher education and the Klaipeda University the strategy of improvement of the quality of its activities, that enables the assurance of the quality of higher education provided by the University. Responsibilities for decisions and monitoring of the implementation of the programme are clearly allocated. The the Faculty Committee of Study Programmes, that is formed of the representatives of all Faculty Departments, is responsible for the administration of the study programme updating process. The most significant role in the internal quality assurance is played by the Department. The study programme is revised and partially changed every two years. The Faculty has a Module Attesting Committee that approves new and updated study modules.

The study programme is revised and partially changed every two years.

III. RECOMMENDATIONS

1. Optimize/reduce the number of learning outcomes of the study programme.
2. Subjects´ prerequsites must be described in more specific and focused way.
3. Too many small subjects – have to be consolidated.
4. Offer more elective specialized subjects.
5. Extended abstracts in English must be included in Master thesis.
6. Erasmus programme should be promoted more actively on master level to increase exchange level.
7. Sabbatical leave support should be implemented.
8. Develop closer contacts with social partners/stakeholders to get topics for master theses and student research projects and joint projects.
9. Organize student projects work to have students to learn work in teams.

IV. SUMMARY

The higher education second cycle study (Master) programme *Technical Information Systems Engineering* (state code – 621E15004) at Klaipeda University (arranged by Marine Engineering Faculty of KU), coordinated and conducted by the Department of Informatics Engineering with the help of teachers from other departments of KU. This study programme provides a good insight into fundamental and emerging computer science disciplines and on their application in design and development of modern information systems. It allows programme graduates to choose both the academic career track and work in industry.

The most positive aspects are good and close relations between teaching staff and students, involvement of alumni and social partners; very good contacts are being kept with the graduates from previous years. Students as well as academic staff seem to be enthusiastic about their activities and challenges; they are sufficiently involved in scientific activities.

The issues that could be improved: curriculum should be consolidated (on the one hand, number of small subjects has to be reduced; on the other hand, more specialized elective subjects have to be offered). More topics for master theses and student research projects have to be offered joint with social partners/stakeholders. Increase international exchange is needed (both for students and for teaching staff).

V. GENERAL ASSESSMENT

The study programme TECHNICAL INFORMATION SYSTEMS ENGINEERING (state code – 621E15004) at Klaipeda 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	3
4.	Material resources	4
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: Jüri Kiho
Lina Kankevičienė
Adomas Svirskas
Paulius Simanavičius

EXTRACT OF SECOND CYCLE STUDY PROGRAMME *TECHNICAL INFORMATION SYSTEMS ENGINEERING* (STATE CODES – 621E15004, 62407T107) AT KLAIPEDA UNIVERSITY 2013-01-07 EVALUATION REPORT NO. SV4-6

STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

Klaipėdos universiteto

TECHNINIŲ INFORMACINIŲ SISTEMŲ INŽINERIJOS

MAGISTRANTŪROS STUDIJŲ PROGRAMOS (621E15004)

VERTINIMO IŠVADOS

EVALUATION REPORT

OF *TECHNICAL INFORMATION SYSTEMS ENGINEERING*

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at Klaipeda University

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Išvados parengtos anglų kalba
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Studijų kokybės vertinimo centras

DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	Techninių informacijų sistemų inžinerija
Valstybinis kodas	621E15004
Studijų sritis	Technologijos mokslų studijų sritis
Studijų kryptis	Informatikos inžinerija
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Studijų programos įregistravimo data	2008

INFORMATION ON ASSESSED STUDY PROGRAMME

Name of the study programme	Technical Information Systems Engineering
State code	621E15004
Study area	Technological Sciences
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Degree and (or) professional qualifications awarded	Master of Informatics Engineering
Date of registration of the study programme	2008

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V. GENERAL ASSESSMENT

The study programme *TECHNICAL INFORMATION SYSTEMS ENGINEERING* (state code - 621E15004) of Klaipeda University is given **positive** evaluation.

Study programme assessment in points by evaluation areas.

No.	Evaluation Area	Evaluation Area in Points*
1.	Programme aims and learning outcomes	3
2.	Curriculum design	3
3.	Teaching staff	3
4.	Facilities and learning resources	4
5.	Study process and students' performance assessment	3
6.	Programme management	3
	Total:	**19**

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The issues that could be improved: curriculum should be consolidated (on the one hand, number of small subjects has to be reduced; on the other hand, more specialized elective subjects have to be offered). More topics for master theses and student research projects have to be offered joint with social partners/stakeholders. Increase international exchange is needed (both for students and for teaching staff).

III. RECOMMENDATIONS

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18. Organize student projects work to have students to learn work in teams.

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Vertimas iš anglų kalbos

KLAIPĖDOS UNIVERSITETO ANTROSIOS PAKOPOS STUDIJŲ PROGRAMOS *TECHNINIŲ INFORMACINIŲ SISTEMŲ INŽINERIJOS* (VALSTYBINIAI KODAI – 621E15004, 62407T107) 2013-01-07 EKSPERTINIO VERTINIMO IŠVADŲ NR. SV4-6 IŠRAŠAS

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V. APIBENDRINAMASIS ĮVERTINIMAS

Klaipėdos universiteto studijų programa *TECHNINIŲ INFORMACINIŲ SISTEMŲ INŽINERIJA* (valstybinis kodas – 621E15004) vertinama teigiamai.

Eil. Nr.	Vertinimo sritis	Srities įvertinimas, balais*
1.	Programos tikslai ir numatomi studijų rezultatai	3
2.	Programos sandara	3
3.	Personalas	3
4.	Materialieji ištekliai	4
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

Aukštojo mokslo antrosios pakopos studijų (magistrantūros) programą *Techninių informacinių sistemų inžinerija* (valstybinis kodas – 621E15004) Klaipėdos universitete (KU) rengia Jūrų inžinerijos fakultetas, koordinuoja ir vykdo Informatikos inžinerijos katedra padedant dėstytojams iš kitų KU katedrų. Ši studijų programa suteikia naudingų žinių apie fundamentines ir naujas kompiuterių mokslo disciplinas ir jų taikymą projektuojant bei kuriant šiuolaikines informacines sistemas. Programa absolventams suteikia galimybę rinktis tiek akademinę karjerą, tiek darbą šioje srityje.

Teigiami šios programos aspektai: geri ir glaudūs dėstytojų ir studentų santykiai, absolventų ir socialinių partnerių įtraukimas; palaikomi labai geri ryšiai su ankstesniųjų metų absolventais. Studentai, o taip pat akademinis personalas, entuziastingai atlieka savo darbą ir pasitinka iššūkius, jie pakankamai aktyviai dalyvauja mokslinėje veikloje.

Dalykai, kuriuos būtų galima tobulinti: studijų turinys turėtų būti labiau apjungtas (viena vertus, turi būti sumažintas smulkių dalykų skaičius, kita vertus, turėtų būti siūlomi labiau specializuoti

pasirenkamieji dalykai). Daugiau temų turi būti siūloma magistro baigiamajam darbui ir studentų moksliniams tyrimų projektams kartu su socialiniais partneriais ir (arba) suinteresuotosiomis šalimis. Reikia stiprinti tarptautinius mainus (studentų ir dėstytojų).

III. REKOMENDACIJOS

1. Optimizuoti (sumažinti) programos studijų rezultatų skaičių.
2. Konkrečiau ir kryptingiau aprašyti išankstinius dalykų reikalavimus.
3. Per daug smulkių dalykų – juos reikia apjungti.
4. Siūlyti daugiau pasirenkamųjų specializacijos dalykų.
5. Į magistro baigiamąjį darbą įtraukti išplėstas santraukas anglų kalba.
6. Aktyviau reklamuoti „Erasmus“ programą magistrantūroje, siekiant paskatinti mainus.
7. Turėtų būti įgyvendinama parama mokslo kūrybinėms atostogoms.
8. Užmegzti glaudesnius ryšius su socialiniais partneriais ir (arba) suinteresuotosiomis šalimis siekiant praplėsti temas magistro baigiamiesiems darbams, studentų mokslinių tyrimų projektams bei jungtiniams projektams.
9. Organizuoti studentų projektinius darbus, kur studentai mokytųsi dirbti komandoje.

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Paslaugos teikėja patvirtina, jog yra susipažinusi su Lietuvos Respublikos baudžiamojo kodekso[1] 235 straipsnio, numatančio atsakomybę už melagingą ar žinomai neteisingai atliktą vertimą, reikalavimais.

Vertėjos rekvizitai (vardas, pavardė, parašas)