

## STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

# Klaipėdos universitetas STUDIJŲ PROGRAMOS INFORMATIKA (valstybinis kodas - 612110005) VERTINIMO IŠVADOS

# EVALUATION REPORT OF INFORMATICS (state code - 612110005) STUDY PROGRAMME at Klaipėda University

Experts' team:

- 1. Prof. Dr. Liz Bacon (team leader) academic,
- 2. Prof. Dr. Helmar Burkhart, academic,
- 3. Prof. Dr. Gerald Steinhardt, academic,
- 4. Mr. Vaidas Repečka, social partner,
- 5. Mr. Vytautas Mickevičius, students' representative.

**Evaluation coordinator** –

Ms Kristina Selezniova

Išvados parengtos anglų kalba Report language – English

> Vilnius 2016

## DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	Informatika
Valstybinis kodas	612I10005
Studijų sritis	Fiziniai mokslai
Studijų kryptis	Informatika
Studijų programos rūšis	Universitetinės studijos
Studijų pakopa	Pirmoji
Studijų forma (trukmė metais)	Nuolatinė – 3,5 metai
Studijų programos apimtis kreditais	210 ECTS
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Informatikos bakalauras
Studijų programos įregistravimo data	2002-06-14 Nr. 1093

## INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	Informatics
State code	612I10005
Study area	Physical Sciences
Study field	Informatics
Type of the study programme	University studies
Study cycle	First
Study mode (length in years)	Full-time (3,5 years)
Volume of the study programme in credits	210 ECTS
Degree and (or) professional qualifications awarded	Bachelor of Informatics
Date of registration of the study programme	2002-06-14 No. 1093

Studijų kokybės vertinimo centras  $\mathbb C$ 

The Centre for Quality Assessment in Higher Education

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#### **I. INTRODUCTION**

#### I.1. Background of the evaluation process

The evaluation of on-going study programmes is based on the Methodology for evaluation of Higher Education study programmes, approved by Order No 1-01-162 of 20 December 2010 of the Director of the Centre for Quality Assessment in Higher Education (hereafter – SKVC).

The evaluation is intended to help higher education institutions to constantly improve their study programmes and to inform the public about the quality of studies.

The evaluation process consists of the main following stages: 1) self-evaluation and selfevaluation report prepared by Higher Education Institution (hereafter – HEI); 2) visit of the review team at the higher education institution; 3) production of the evaluation report by the review team and its publication; 4) follow-up activities.

On the basis of external evaluation report of the study programme SKVC takes a decision to accredit study programme either for 6 years or for 3 years. If the programme evaluation is negative such a programme is not accredited.

The programme is accredited for 6 years if all evaluation areas are evaluated as "very good" (4 points) or "good" (3 points).

The programme is accredited for 3 years if none of the areas was evaluated as "unsatisfactory" (1 point) and at least one evaluation area was evaluated as "satisfactory" (2 points).

The programme is not accredited if at least one of evaluation areas was evaluated as "unsatisfactory" (1 point).

#### I.2. General

The Application documentation submitted by the HEI follows the outline recommended by the SKVC. Along with the self-evaluation report and annexes, the following additional documents have been provided by the HEI before, during and/or after the site-visit:

No.	Name of the document
1.	Bachelor thesis criteria

#### I.3. Background of the HEI/Faculty/Study field/ Additional information

Klaipėda University (KU) was founded in 1991. It plays an important role in Lithuania for being the scientific and academic centre of Western Lithuania. The specific regional cultural heritage and the seaside position give KU a very distinctive potential.

KU consists of 4 faculties which offer over 100 study programmes in all 3 study cycles. KU has about 4,500 students and 700 teachers and researchers, respectively. Informatics studies are concentrated within the Faculty of Marine Technology and Natural Sciences. The Faculty consists of 4 Departments: Informatics and Statistics, Natural Sciences, Engineering and Marine Engineering, and of 2 Research Centres: Marine Sciences and Engineering, and Energy Efficiency.

The Informatics and Statistics Department (ISD) offers the following study programmes: undergraduate study programmes of Informatics (reviewed by the expert team), Informatics Engineering, and Applied Statistics, as well as graduate study programmes of Information Systems, Geoinformatics, Statistics and Operation Research, Technical Information Systems Engineering.

#### I.4. The Review Team

The review team was completed according *Description of experts' recruitment*, approved by order No. 1-01-151 of Acting Director of the Centre for Quality Assessment in Higher Education. The Review Visit to HEI was conducted by the team on 06/04/2016.

- 1. Prof. Dr. Liz Bacon (team leader) University of Greenwich, Deputy Pro Vice-Chancellor, Faculty of Architecture, Computing and Humanities, Professor of Software Engineering United Kingdom of Great Britain and Northern Ireland.
- 2. Prof. Dr. Helmar Burkhart, Basel University, Full Professor, Switzerland.
- 3. Prof. Dr. Gerald Steinhardt, Vienna University of Technology, Full Professor, Austria.
- 4. Mr. Vaidas Repečka, UAB Minatech Co-Founder, Director, Lithuania.
- 5. Mr. Vytautas Mickevičius, PhD student of Informatics study programme, Vytautas Magnus University, Lithuania.

#### **II. PROGRAMME ANALYSIS**

#### 2.1. Programme aims and learning outcomes

The formulation of learning outcomes is very good and provides an excellent basis for the work. The Outcomes are structured into 4 groups: Underlying Conceptual Basis for Informatics; Analysis, Design and Implementation; Technological and Methodological Skills; Other Professional Competences (page 11-13 in SER). Table 1 on pages 15-17 in SER states for each of the Subject Codes which Learning objectives are primarily addressed - an excellent overview. Learning outcomes are published on the university website and the students are all clear about where to find them.

The main programme aim (topic 19, page 11 in SER) is to prepare Informatics specialists with an emphasis on software systems, computational science, and smart systems development. Both the aim and learning outcomes are thus well defined, consistent with the level of study, are suitable for the title of the programme and reflect regional market demand not only in the IT sector but also other sectors like telecommunications, electrical, optical and transport engineering. The programme is aligned with regional specialisations in maritime and transport industries, and contains subjects from engineering and smart systems. The programme is also aligned with recent developments in the market, new international companies and ones coming from the gaming sector.

While the learning outcomes are well formulated, their implementation in the bachelor thesis is not sufficiently rigorous. Practical work undertaken is solid and appears to be well written up. However, the work is not discussed in the context of scientific/ academic literature which is required to meet international standards. The literature reviews are often limited and the citing of technical manuals is dominant. Whilst it is clear that staff do discuss the grading criteria and their implementation, it is not clear that they currently hold a consistent view of the implementation and this needs resolving with reference to international standards.

The name of the programme (Informatics Undergraduate/ Bachelor Programme) is compatible with the learning outcomes, contents, and qualifications. The study programme targets broad competences in Informatics and avoids too much specialization at the undergraduate level.

#### 2.2. Curriculum design

The curriculum meets the Lithuanian legal acts and the programme structure as defined, is broadly consistent with degrees found elsewhere in Europe. The mix and percentages of General Education Subjects, Study Field Fundamentals, Specialisations, and Elective Subjects is wellchosen (pages 19-20 in SER). The length of the programme was shortened form 4 years to 3.5 years as proposed by an earlier evaluation. The expert group acknowledges the successful adaption and could not identify any shortcomings caused by this.

The study subjects are evenly spread and non-repetitive. Modules identified for each year of the study programme are very good and appropriate to deliver the learning outcomes of the programme. The introduction of two specialisations: Software Development and Smart Systems Development are considered to be a major improvement in the study programme.

The programme is technology-focussed and latest developments are taught. The SER reports on modernization activities that have been undertaken. For instance, programming languages taught now include more modern approaches such as Python and C#. Software engineering methods include UML, RUP, and SCRUM. Data mining, data analysis and visualization, and machine learning are part of the curriculum.

Security is taught as part of the core throughout the degree however the topic is becoming ever more critical to the development of secure systems. Study Committee members might like to review the security content against international recommendations, enhance the content on concurrency, and update the content of the web technologies e.g. to include responsive design. The programme is very technical and the teaching team might consider benchmarking against international standards, for example those in Europe which recommend the inclusion of legal, social, ethical and professional issues which develop more transferable skills. It is important for example that students understand data protection and copyright laws etc. in addition to developing their personal and professional skills such presentation skills, communication skills, public speaking skills, ability to write technical documentation as miscommunication is a key problem for employers who also requested enhanced project management and entrepreneurial skills.

Teaching methods not only include classical approaches such as lectures, seminars, and discussions but also modern self-study approaches. For instance, grading of self-dependent work constitutes up to 50% of the overall work delivered. Topic 7 (page 5 in SER) addresses 25 sets of electronic study materials that are available through the e-learning environment Moodle. The SER team has proposed to further deepen efforts through the implementation of virtual laboratory tools for remote work.

The curriculum is generally sound, however a review against European and other International benchmarks such as ACM should be undertaken.

#### 2.3. Teaching staff

The staff teaching on the study programme formally meet the Lithuanian legal requirements. The qualifications of the teaching staff are adequate to ensure learning outcomes; most staff hold high academic degrees and the number of professors and doctors represents more than 75% of staff. There are 22 staff members (as per the SER): 4 are full- professors, 8 associated professors, 5 lecturers with PhD, and 5 with a Master's degree. One established staff unit serves up to 10 students per study year that fits to the valid regulations (page 25 in SER). The majority of teachers are younger than 45, however 38% are 60+. The retirement of these staff members is addressed, as 7 fresh doctors replenished the teaching staff recently and 6 more young teachers have entered doctoral studies (page 25 in SER).

The review team has seen enthusiasm for teaching as well as research and development tasks from the staff. Both programme management and teachers motivate young people in computer science during their bachelor studies and their activities with school pupils, in order to inspire the next generation.

Several teachers who are also working in industry are able to bring valuable real-world experience into the classroom, which students very much appreciate. Staff will also help students extend their knowledge into other areas if students wish to do so by setting them additional tasks and guiding them through these.

Staff mobility has been reported at the incoming and outgoing level (topic 44, page 26). During the past 6 years 14 Lecturers have spent some time at other sites (e.g. Latvia, Spain, Turkey), while 10 Lecturers form foreign countries (e.g. Germany, Cyprus, Turkey) have spent some time at KU. There is room to increase staff mobility e.g. increased attendance at international conferences so the staff gain more visibility in the scientific community. HEI provide financial help to participate in international conferences, but most of mobility expenses are paid out of external projects.

Teachers' amount of contact-hours is 29% on average. Remaining time could be spent for other activities, including research, thus fulfilling recommendation of last evaluation to help staff to be able to spend at least 1/3 of time for their research activities. The number of publications increased almost 3 times since the last review, but there is lack of activity launching international research projects (e.g. Eurostars, Horizon programmes) and even local research and development projects. There are several cross-border cooperation and local research infrastructure and capacities development projects, though. International visibility should be increased, more international research projects should be increased. New research themes could be launched, taking into account needs of regional strategic maritime and transport projects that could lead to research and development in new technologies.

#### 2.4. Facilities and learning resources

Premises for studies in the main student campus and outlying buildings for informatics studies are adequate in their size and quality. The main laboratories are located in the outlying building, with some located in the main student campus. Some refurbishment and a more welcoming environment in waiting areas in the outlying building could enhance the student experience. Moving studies to the main campus to avoid unnecessary traveling could be the best option in the longer term perspective.

Overall the facilities are very good with three labs having upgraded equipment through crossborder cooperation projects' funding. However, it was noted that a few labs had equipment that was 5-6 years old and it would be better if these labs were upgraded every 3-4 years, although they do not appear to be affecting the student experience.

The faculty has adequate arrangements for students practice. There are about 25 agreements with regional and international enterprises and IT companies for student practice and collaboration. Starting from the 3rd year of Informatics studies about 40-50 % of full-time students are working and about 80 % of working students are working either as IT specialists or in other IT-related positions (page 10 in SER).

Library is well equipped, students have access to full text databases, but access to ACM Digital Libraries (one of the most relevant full text databases in the field of informatics) should be guaranteed since free access to this digital library for students and staff members is the international standard in the field of informatics. The 2010 evaluation made a recommendation for "more up-to-date textbooks for students". SER team reports, that there were several projects launched to tackle this problem, a whole set of new textbooks and electronic study materials were prepared and published (page 8 in SER).

#### 2.5. Study process and students' performance assessment

The admission requirements are available on the university web site and allow only students with an adequate level of knowledge to enter studies. There is clear distinction between the level of knowledge required compared to students entering the local college.

Organisation of the study process ensures an adequate provision of the programme and the achievement of the learning outcomes. Assessment of students' performance is thorough, but more discussion/ team teaching/ sharing of best practice through the setting and marking of assessments (through looking at actual student work and ensuring consistency of thesis marking with international standards) would be beneficial.

Students are encouraged to participate in applied research activities in the labs of mechatronics and robotics for the development of smart devices. Many students are able to experiment with Lego robots, Raspberry Pi, build robots for Robot Sumo competitions, and participate in international robotics tournaments in which students have won.

A way needs to be found to encourage more students to undertake an Erasmus exchange. There were 2 outgoing Erasmus exchange students each year 2010/2011, 2011/2012, 2012/2013, five

students during 2013-2014 and even no Erasmus students in year 2014-2015. There were 3,4,5,6,16,6 incoming Erasmus students in years 2010/2011, 2011/2012, 2012/2013, 2013-2014, 2014-2015 respectively (SER, p. 33-34). Students suggested that exchanges with more prestigious institutions might increase numbers however there are other factors they take into account before deciding to participate. For example, they are afraid to lose their job while being away in Erasmus exchange, and not being able to easily get new one after coming back. This seems strange, given the fact that IT professionals are needed badly by businesses. The advertising of the Erasmus programme could be enhanced to emphasise the true qualities and aims, and to explain the benefits of living and learning in different setting.

There is an adequate level of academic and social support. However, foreign teachers of computer science would be appreciated by students. Generally, students were positive with regard to the supportiveness of teachers, possibility to discuss issues with the student union and the arrangement of guest lectures from social partners.

The majority of KU students stay locally (page 37 in SER). Many former students work in local companies, which core activities are not directly related with IT. Few local companies develop their own IT products and services to sell worldwide. Those companies were started by former students. Some local companies are owned by foreign investors. There is no big difference between local and foreign own companies in terms of the IT skills required from graduates. Students can easily find jobs in local and foreign companies. Some students continue their studies at master's level, and there are several PhD students in the informatics area. New businesses related to maritime and transport (for example LNG terminal) needs, could lead to new research and development opportunities, and encourage people to continue studies in MA and PhD levels.

#### 2.6. Programme management

Responsibilities for programme monitoring are managed by the faculty administration. With regard to input from external stakeholders multiple informal connections exist and discussions with different stakeholders and social partners occur, however it would be good to include teaching staff in the discussions as well. The current mechanisms for engaging with social partners (alumni and employers) are rather ad hoc/ informal and all parties may benefit if a formal group was formed which met at least once per year so employers and alumni could, for example, debate curriculum issues with. The group may also be able to offer a mentoring service for students, assist staff in

inspiring the next generation of school pupils to study informatics, and help inspire some graduate into the teaching profession etc.

Academic information system stores documents, information about Programme implementation, student progress, student mobility data etc. As well quality management systems and a virtual learning environment with electronic questionnaires were introduced since the last evaluation to regularly collect information and data on the implementation of the programme at the university, faculty and programme levels (SER p.39). Teachers, students are included in information exchange and management processes.

Outcomes of internal and external evaluations are used for to enhance the curriculum and quality assurance processes annually. Actions to improve on recommendations of previous external evaluation were taken, however there is some room for improvement, like increasing research activities, intensifying international exchange, etc. During internal evaluations it has been noted, that the programme would benefit from a link with marine technologies, harbour transport, managing large amounts of data, modelling software, working with GIS, and developing software systems. The corresponding changes were implemented.

The evaluation and improvement processes involve all stakeholders, suggestions from all stakeholders are taken into account. However, as recommended above, a formal social partner group should be formed to aid debate and understanding between all stakeholders. Nevertheless the internal quality assurance measures are effective and efficient. Students, teachers and other staff have mechanisms to suggest improvements. For example, suggestions by students regarding laboratory equipment to improve the quality of studies were implemented.

Overall the programme is solid but not really visible at the national level. The faculty undertakes a lot of activities to enhance recruitment, however the university needs to support the faculty activities more, both regionally and nationally.

#### 2.7. Examples of excellence \*

Programme management as well as the teaching team perform an excellent job in order to motivate and engage students in creative projects in the context of embedded systems. They provide modern equipment such as model train and logistics platform, low-power computers (e.g. Raspberry Pi), drones, and robots, as well as advanced lab facilities (e.g. laser-cutting device) which allow students to build their own prototype of smart systems. Students are also encouraged to participate and attend international competitions and students have been extremely successful in these. The

team's enthusiasm is also visible through activities with local schools which attracts the next generation of students.

## **III. RECOMMENDATIONS**

1. Student thesis practical work should be discussed in the context of scientific/ academic literature and marked in accordance with international standards and fully documented and referenced in the thesis report.

2. Agree the criteria for thesis grading to ensure it is comparable with international standards and introduce mechanisms to implement it consistently.

3. Improve staff mobility and define incentives for increased attendance at international conferences so staff gain more visibility in the scientific community.

4. Attract foreign teachers to spend time at the University.

5. Provide regular upgrade mechanisms for computer labs and provide access to ACM digital libraries.

6. Establish regular formal meetings with social partners and document their recommendations for later programme adaptations.

#### **IV. SUMMARY**

The Informatics study programme aims to prepare Informatics specialists with an emphasis on software systems, computational science, and smart systems development. Both the aim and learning outcomes are thus well defined, consistent with the level of study, are suitable for the title of the programme and reflect regional market demand.

While the learning outcomes are well formulated, their implementation in the bachelor thesis is not sufficiently rigorous. Practical work undertaken is solid and appears to be well written up. However, the work is not discussed in the context of scientific / academic literature which is required to meet international standards. The students need to discuss their work in the context of the scientific literature and this needs to be reflected in the grading.

The curriculum is generally sound however a review against European and other International benchmarks such as ACM should be undertaken. Some areas for consideration are as follows: review the security content against international recommendations, enhance focus on concurrency, and update the content of the web technologies e.g. to include responsive design, and include project management and entrepreneurial skills.

The qualifications of the teaching staff are adequate to ensure learning outcomes; most staff hold high academic degrees and the number of professors and doctors represents more than 75% of the staff. The enthusiasm of staff for teaching and research is good however there is room increase staff mobility e.g. increased attendance at international conferences so they gain more visibility in the scientific community. New research themes and technologies development could be launched as well, taking into account needs of regional strategic maritime and transport projects.

Overall the facilities in main student campus and outlying building for informatics studies are very good with many labs receiving upgraded equipment regularly through cross border cooperation project funding however, it was noted that a few labs had equipment that was 5-6 years old and it would be better if these labs were upgraded more regularly, although they do not appear to be affecting the student experience. Access to ACM Digital Libraries should be guaranteed.

Organisation of the study process ensures an adequate provision of the programme and the achievement of the learning outcomes. Assessment of students' performance is thorough, but could be enhanced by using best practice in setting and marking assessments and ensuring consistency of thesis marking with international standards. Ways need to be found to encourage more students to undertake an Erasmus exchange and some foreign teachers would be appreciated by students.

Overall the programme is managed well. There are good informal procedures in place for reviewing the content, but a formalised process for gathering input from all stakeholders such as alumni and employers should be established. A formal social partner group as described above should be formed. The university should support the faculty marketing activities to help attract more students into the study programme.

## V. GENERAL ASSESSMENT

The study programme *Informatics* (state code – 612I10005) at Klaipėda University is given **positive** evaluation.

No.	Evaluation Area	Evaluation of an area in points*
1.	Programme aims and learning outcomes	3
2.	Curriculum design	4
3.	Teaching staff	3
4.	Facilities and learning resources	4
5.	Study process and students' performance assessment	3
6.	Programme management	4
	Total:	21

Study programme assessment in points by evaluation areas.

\*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:	Liz Bacon
Grupės nariai: Team members:	Helmar Burkhart
	Gerald Steinhardt
	Vaidas Repečka
	Vytautas Mickevičius

## KLAIPĖDOS UNIVERSITETO PIRMOSIOS PAKOPOS STUDIJŲ PROGRAMOS INFORMATIKA (VALSTYBINIS KODAS – 612I10005) 2016-06-07 EKSPERTINIO VERTINIMO IŠVADŲ NR. SV4-133 IŠRAŠAS

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### V. APIBENDRINAMASIS ĮVERTINIMAS

Klaipėdos universiteto studijų programa *Informatika* (valstybinis kodas – 612I10005) vertinama **teigiamai**.

Eil. Nr.	Vertinimo sritis		Srities įvertinimas, balais*
1.	Programos tikslai ir numatomi studijų rezultatai		3
2.	Programos sandara		4
3.	Personalas		3
4.	Materialieji ištekliai		4
5.	Studijų eiga ir jos vertinimas		3
6.	Programos vadyba		4
		Iš viso:	21

\* 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)

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### **IV. SANTRAUKA**

Informatikos studijų programos tikslas – parengti informatikos specialistus, daugiausiai dėmesio skiriant programinės įrangos sistemoms, kompiuterių mokslui ir išmaniųjų sistemų kūrimui. Tiek tikslas, tiek studijų rezultatai yra gerai apibrėžti, suderinami su studijų lygiu, atitinka programos pavadinimą ir atspindi paklausą regiono rinkoje.

Nors studijų rezultatai puikiai suformuluoti, jų įgyvendinimas baigiamuosiuose bakalauro darbuose nėra pakankamai tikslus. Atliktas praktinis darbas yra puikus ir gana gerai aprašytas. Tačiau darbas nėra aptariamas moksliniame ar akademinės literatūros kontekste, ko reikalauja tarptautiniai standartai. Studentai turi aptarti savo darbą mokslinės literatūros kontekste, ir tai turi atsispindėti jo vertinime.

Apskritai, studijų turinys išdėstytas puikiai, tačiau reikia jį peržiūrėti pagal Europos ir tarptautines gaires, tokias kaip ACM. Reikia apsvarstyti keletą klausimų: peržiūrėti apsaugos turinį

pagal tarptautines rekomendacijas, sustiprinti konkurencijai skiriamą dėmesį ir atnaujinti žiniatinklio technologijų turinį, pvz., įtraukti prisitaikantį dizainą bei projekto vadybos ir verslumo įgūdžius.

Dėstančiojo personalo kvalifikacija tinkama studijų rezultatams užtikrinti, dauguma personalo yra įgiję aukštus akademinius laipsnius, o profesoriai ir mokslų daktarai sudaro 75 % viso personalo. Personalas turi entuziazmo dėstyti ir atlikti mokslinį darbą, tačiau būtų galima didinti personalo judumą, pvz., labiau skatinti jį dalyvauti tarptautinėse konferencijose, kad dėstytojai būtų labiau matomi mokslo bendruomenėje. Taip pat galėtų būti įvedamos naujos mokslinių tyrimų temos ir technologinės naujovės, atsižvelgiant į regioninius strateginius jūrinių bei transporto projektų poreikius.

Patalpos pagrindinėje universiteto teritorijoje ir tolesniame pastate informatikos studijoms tinka puikiai, jose gausu laboratorijų. Vykdant bendradarbiavimo per sieną projektus reguliariai skiriamas finansavimas įrangai atnaujinti, tačiau buvo pastebėta, kad kelių laboratorijų įranga buvo 5–6 metų senumo ir būtų geriau, jei tokios laboratorijos būtų reguliariau atnaujinamos, nors jos ir neturi įtakos studentų patirčiai. Reikėtų garantuoti prieigą prie ACM skaitmeninių bibliotekų.

Studijų proceso organizavimas užtikrina adekvatų programos taikymą ir studijų rezultatų pasiekimą. Studentų darbai vertinami nuodugniai, bet galėtų būti tobulinami naudojant gerąją praktiką nustatant ir skiriant balus bei užtikrinant baigiamųjų darbų vertinimo vientisumą pagal tarptautinius standartus. Reikia rasti būdų, kaip paskatinti daugiau studentų dalyvauti Erasmus mainų programose, o studentai pageidauja, kad universitete dėstytų dėstytojai iš užsienio.

Apskritai, programos vadyba vykdoma puikiai. Egzistuoja geros informacinės procedūros turiniui peržiūrėti, bet reikėtų nustatyti formalų procesą, kaip rinkti atsiliepimus iš visų socialinių dalininkų, tokių kaip buvę studentai ir darbdaviai. Reikėtų sudaryti oficialią socialinių partnerių grupę, kaip apibrėžta pirmiau. Universitetas turėtų palaikyti fakulteto rinkodaros veiklą, kad padėtų į studijų programą pritraukti daugiau studentų.

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#### **III. REKOMENDACIJOS**

1. Studentų baigiamųjų darbų praktinis darbas turėtų būti aptariamas mokslinės ar akademinės literatūros kontekste ir vertinamas pagal tarptautinius standartus, taip pat išsamiai dokumentuojamas bei aprašomas baigiamajame darbe.

2. Reikia sutarti dėl baigiamųjų darbų vertinimo balais kriterijų, norint užtikrinti, kad jie prilygtų tarptautiniams standartams, ir įvesti mechanizmus, kad jie būtų nuosekliai taikomi.

3. Skatinti personalo judumą ir nustatyti iniciatyvas, kad būtų dažniau dalyvaujama tarptautinėse konferencijose, kad personalas būtų labiau matomas mokslinėje bendruomenėje.

4. Pritraukti dėstytojų iš užsienio.

5. Reguliariai siūlyti kompiuterinių laboratorijų atnaujinimo mechanizmus ir teikti prieigą prie ACM skaitmeninių bibliotekų.

6. Rengti reguliarius oficialius susitikimus su socialiniais partneriais ir dokumentuoti jų rekomendacijas, kurias būtų galima vėliau pritaikyti programai.

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