



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

VILNIAUS UNIVERSITETO
KOMPIUTERINIS MODELIAVIMAS STUDIJŲ
PROGRAMOS (621I10002)
VERTINIMO IŠVADOS

EVALUATION REPORT
OF COMPUTER MODELING (621I10002)
STUDY PROGRAMME
at VILNIUS UNIVERSITY

Grupės vadovas: Prof. Jukka Paakki
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Išvados parengtos anglų kalba
Report language - English

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DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	<i>Kompiuterinis modeliavimas</i>
Valstybinis kodas	621I10002
Studijų sritis	Fizinių mokslų studijų sritis
Studijų kryptis	Informatika
Studijų programos rūšis	Universitetinės studijos
Studijų pakopa	Antroji
Studijų forma (trukmė metais)	Nuolatinė (2 m.)
Studijų programos apimtis kreditais	120 ECTS
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Informatikos magistras
Studijų programos įregistravimo data	Lietuvos Respublikos švietimo ir mokslo ministro 2002 m. birželio 14 d. įsakymu Nr. 1093

INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	<i>Computer Modeling</i>
State code	621I10002
Study area	Physical Sciences
Study field	Informatics
Kind of the study programme	University Studies
Study cycle	Second
Study mode (length in years)	Full-time (2 years)
Volume of the study programme in credits	120 ECTS
Degree and (or) professional qualifications awarded	Master of Informatics
Date of registration of the study programme	14 of June 2002, under the order of the Minister of the Ministry of Education and Science of the Republic of Lithuania No. 1093

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The Centre for Quality Assessment in Higher Education

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I. INTRODUCTION

The subject of this evaluation is the Master study programme in *Computer Modeling* in the Faculty of Mathematics and Informatics, Vilnius University. It is mainly taught by 4 departments: Department of Computer Science II, Department of Mathematical Computer Science, Department of Software Engineering and Department of Computer Science I. The programme was initially designed in 2002. The first self-evaluation was done in 2005 and the first external assessment in 2006, with an additional internal assessment in 2011. The Vilnius University prepared the Self Evaluation Report. The programme was evaluated by an Review Panel formed by: Prof. Jukka Paakki (head of the team), Prof. Rolf Backofen, Prof. Jerzy Marcinkowski, Vida Juozapavičienė and Lukas Jokūbas Jakubauskas.

The volume of the curriculum is 2 years and 120 ECTS. One credit point corresponds to 25-30 hours of student's workload. The degree awarded is *Master in Informatics*. As emphasized in the study description, it is a programme that concentrates more on the theoretical methods and theoretical applications of technology performance. The study programme also covers many aspects of scientific computing. The programme is also closely related to the Digital Science and Computing Center established by the Faculty of Mathematics and Informatics.

II. PROGRAMME ANALYSIS

1. Programme aims and learning outcomes

The programme aims and learning outcomes are well defined. The students learn to use modern information and analysis tools in the field of computing. The students will be enabled to search and evaluate scientific and business literature. They will be enabled to communicate their findings and decisions with both specialist and non-specialists.

The Lithuanian version of the programme is publicly available at the following web-site: <http://mif.vu.lt/lt2/komp/studijuprogramos>.

The social partners are interested in the subjects taught in this programme, especially with subjects like super computing, biometrics, networks, cloud computing and security, as well as sufficient knowledge of programming in Java. The social partners also report that there is even a high competition for employing computer science graduates. They can have an influence on the

study programme and are able to express their requirements to the study programme committee. To give an example, one of the partners expressed more interest and requirements in mobile applications, and, as a consequence, a related course was introduced in the programme. A social partner also reported that a specialist employed by the company gives lectures in the university, thus fostering the exchange of knowledge.

The Review Panel agreed that the name of the programme is compatible with both the qualification offered as well as with its learning outcomes. Furthermore, the Panel also agreed on the fact that the programme outcomes are compatible with a master's qualifications.

The curriculum has been described more appropriately as “scientific computing” in the past. This has changed recently by the addition of additional courses and subjects like cloud computing, so it covers now more of general computer science.

2. Curriculum design

The self-assessment report (SER) states that the programme meets the legal requirements, and the Review Panel didn't find any evidence that this would not be the case. The programme contains 40.83% compulsory course units and 9.17% optional course units. Albeit this is compatible with legal requirements, the Review Panel thinks that more flexibility for students to choose different topics, i.e., optional courses could be beneficial.

The curriculum includes data management, modeling, and analysis, modern technology, scientific research, optional subjects and professional practice. The modules are spread appropriately over these topics.

The subjects cover more complex computer science topics such as *Methods in Cryptography*, *Methods of Nonlinear Modeling*, *Secure Internet Technologies* or *Spatial Databases*. The selection of topics is consistent with a degree of Master of Informatics.

As already stated, the goal of the programme is to teach students how to use modern information and analysis tools in the field of computing. It should enable them also to search and evaluate scientific and business literature, and to communicate their findings and decisions with both specialist and non-specialists. The subjects seem mostly to be adequate for this purpose since they cover topics centered on the analysis of complex and large data. They also contain more interdisciplinary topics like Biometrics and Bioinformatics. However, more flexibility to choose additional subjects, especially also interdisciplinary ones, would help to improve communication skills especially with non-specialists.

There is a broad coverage of subjects that is sufficient to ensure learning outcomes. The Reviewing Panel, however, has the impression that more optional courses (and in this programme also more interdisciplinary courses) would even improve that.

It is a well-established programme initiated in 2002, with several improvements in the years 2008-2013. The improvements included the addition of more contemporary subjects like cloud computing, image analysis and web services. The programme is related to modeling real world data. More recently, some topics related to security have been added. The SER defines the health care sector as one of the major labor market for students of this programme, but it seems that the programme is not especially adapted for the health care sector. The Review Panel gathered information from the students during the visit that they also do not envision working in the health care area. For that reason, the Review Panel does not consider this disagreement as a major problem.

The international Review Panel assessed also the master theses. The topics for the theses mainly fit to the overall objective of the programme. The length and scientific details of the theses seem to be appropriate for a master level in computer science. The assessment of the theses does include a written report by the supervisor, which is appreciated by the international Review Panel.

The Review Panel was also satisfied with the quality (concerning used methods, research orientation and diversity of themes) of the master theses it reviewed.

3. Staff

According to the provided list, staff consists of 14 persons, all having a Ph.D. degree and 3 being professors (21 %). This meets the legal requirements.

The programme is mainly taught by the Department of Computer Science II, which has 3 professors, 8 associate professors, and 19 lecturers. From the teachers, 22 have a scientific (Ph.D.) degree. The Review Panel was impressed about teaching staff commendable competency and got the impression that the programme has sufficient teaching resources. This is also confirmed by the fact that no problems were reported by the students to set up the timetable for the programme.

However, the staff has a relatively high average age. This is partially due to the high retirement age of 71. After the age of 65, teachers can have twice an extension of 3 years. This extension is denied when the requirements (e.g., number of publications for professor) for the occupied

position are not met, or when there are serious complaints about the teaching quality. The composition of the academic staff has also slightly changed in recent years. This was necessary in order to find competent teachers for new topics required by changes in the curriculum.

The university budget for the faculty is based partially on the number of students. The faculty manages the distribution of the budget to the departments. $\frac{2}{3}$ of the budget is associated to the number of students, and $\frac{1}{3}$ is associated to research. The quality of research is measured by the number of papers (ISI Web of Science) published by each teacher. Albeit ISI Web of Science is the current standard and used by many universities, the Review Panel considers the ISI Web of Science list of publication venues as suboptimal for computer science and recommends using some other source such as Microsoft Research, at least in addition. Otherwise, some successful researchers publishing in good computer science venues might have a disadvantage.

The Panel got the impression that salaries are given for individual tasks such as teaching or taking part in a Ph.D defense. This might lead to a very high teaching load of up to 20 hours per week, which was reported during the visit at least once. This was considered by the Review Panel to be very high as it does not leave enough time for research. Furthermore, after questioning the faculty about this topic, we were informed there is no possibility for a research sabbatical. However, this might be a general requirement according to Lithuanian laws and thus could not be influenced by the university.

Professors have the minimal teaching load of 90 contact hours per year. These positions are given to teachers with a research profile. Other teachers have a much higher teaching duty, up to 20 hours of actual lecturing per week as has been reported during the visit. Teachers can be promoted to associate or full professorship if they satisfy the quality requirements and win the competition to fill these positions. There are different requirements for first time promotion, and for a position to be extended. There is no fixed number of positions to be filled.

4. Facilities and learning resources

The buildings of the faculty for the programme are adequate. Renovations have been done in one building, and a new building is planned for the near future.

The faculty is well equipped with computing resources. It has recently (2 years ago) bought a supercomputer with 2000 cores and 600 TB of disk space. This is currently the largest supercomputer in Lithuania. We were informed that up to 40% of computing power is sold to companies, so 60% is left for university projects. This computing resource is important especially for the study programme of Computer Modeling, where scientific computing involves

solving complex computational problems. The faculty invests 200.000 LTL for replacement of equipment every year.

The faculty is also well equipped with computing laboratories for students, partially by additional funding from the industry, and partially as an investment from the faculty. Albeit the hardware equipment is very good, students informed the Review Panel that there could be some improvement on the software side. For example, current versions of programs needed by the students may not be available, and the update has to be done via administrators. Students reported problems with this process, and they would wish to have more guidance there. There seems also to be lack of installed software (e.g. Google App Engine) that is actually required by some course. The impression was given that this might be more an organizational problem, and appropriate procedures for updating/providing software seem to be lacking.

The department has two locations with two buildings next to each other in Naugarduko Str. 24 and Šaltinių Str. 1a, and another location in Didlaukio Str. 47. The two locations are reachable by public transport, which however takes some time (the Review Panel estimates this to be roughly 30-40 minutes). However, it can be stated positively that the timetable is organized in such a way that students mostly do not need to travel between the locations on the same day. The same is true for teachers: if they have a course in one location, they will not have lectures in the other locations that day. The students re-assured the Review Panel that there is no problem with the timetable. The Panel, however, could envision more problems if more additional optional course are provided.

The faculty invests between 17.000 and 28.000 LTL per year for the library. The library is well equipped with current computer science literature, albeit there also seems to be some concentration on books written by the lecturers, at least for some subjects. It can also be positively remarked that the library has access to ACM/IEEE digital library, which gives the students the possibility to read many current computer science papers and journals online.

5. Study process and student assessment

Concerning the admission requirements, the programme accepts students from any discipline. In order to be capable to attend the study programme, an entrance examination has to be taken. After asking the students about this exam, it was considered to be relatively easy. The students were aware of the subjects of the entrance exam and knew what to expect. The Review Panel required copies of the written entrance exam, but the faculty could not provide them since they had to be stored in a safe location. The Panel was also presented a guideline for a questionnaire

(consisting of a list of topics to be asked from the students). Albeit the topics are well related to computer science in general, it is not clear whether the questions are appropriate to assess the requirements for the study programme in Computer Modeling. The Review Panel is recommending adapting the guidelines for the specific study programme so that they reflect the real requirements of the it. There is also the possibility of a one year special study to bridge the gap between the requirements for the programme and the previous knowledge/education of the applicant.

Concerning the organization of the study process, the faculty has different departments for computer science that are related to different research areas. More or less, one study programme is usually run by one department, i.e., there is nearly a one-to-one match between teachers of the departments and the study programmes. The evaluation of the quality of the study programme is regulated by the Vilnius University study programme regulations and supervised by the Study Programme Committee. In the current situation, the Study Programme Committee is mainly composed of the department staff that is organizing the associated study programme. The students expressed the wish to have more optional courses, and also a somewhat broader coverage of subjects, especially from other programmes and departments.

The programme encourages the students to participate in research. The study programme has been adapted accordingly. Research is not anymore done in the first semester, since the students have to get the required theoretical knowledge first. Research participation is also envisioned in the master thesis, which is therefore processed in 3 semesters. Here, the first semester is related to literature search. For the final thesis, the faculty is using a plagiarism detection system. The student has to upload the thesis onto this system. It checks overlap with theses written in the Vilnius universities. The system cannot check overlap between other theses found in the internet or theses written in foreign languages, but this problem is usually solved via personal contact between the tutor and the student. Automatically translated paragraphs are easily found this way.

Concerning the opportunity to participate in mobility programmes, the faculty provides several opportunities albeit the number of students participating in ERASMUS exchange is low. In 2009 there have been 3 students, in 2010 and 2011 zero students, and in 2012 and 2013 one student each. One reason seems to be that students are working and for that reason do not have a high incentive to attend the ERASMUS programme. The faculty has tried to improve this, for example by using AMIPA project money to send students to the ERASMUS programme. There

is also a little increase of foreign students due to the internalization project. The faculty should continue in these efforts to improve internationalization.

The faculty has contact within the programme with foreign universities and organisations like CERN and the universities of Bolzano and Zurich. In an effort of internationalization, the faculty is currently also trying to make the programme accessible to other universities, with a special emphasis to Eastern Europe universities. For that reason, the faculty started to offer some courses in English. Currently, the course units “*Methods of Cryptography*”, “*Spatial Databases*”, “*Data Mining*”, “*JAVA Technologies*”, “*Programming in Cloud Computing*”, “*Web Services*”, “*Scientific Research I/IP*”, and “*Scientific Research II/IP*” are offered also in English. The staff continues with its additional internationalization efforts by contributing to international/EU-financed projects. Examples are such as FP7 projects BalticGrid-II and EGI-InSPIRE, Marie Curie Initial Training Network, as well as the CERN-Lithuania Collaboration Project. The international Review Panel was also impressed by the fluent use of English language in the interviews, both from the teachers as well as from the students.

As we have been informed by administrative staff, if there is a conflict in the timetable from different programmes requiring the same course, then the associated course might be run several times to resolve these conflicts with different teachers. There were no complaints or confirmations of the lack of teaching resources. The relation is one teacher per 16 students, which is a rather good. If you look at university rankings, universities like Edinburgh, Warwick, Kent or Birmingham have a faculty/student ration of 14.

The programme has a very high dropout rate of up to 70%. The self-assessment committee informed the Review Panel that the students fail mostly in the research part of the programme, when they have to write a thesis. When the faculty consulted the students, the main problem identified was that students have additional external employment, which reduces their time to work for the courses. The students also confirmed that the main problem seems to be the work load from external employment. The lectures are usually late in the afternoon (starting after 2pm) in order to make the programme compatible with the employment of the students, which is appreciated by the students and the Review Panel.

Assessment methods include standard methods such as tests, written reports and defense of practical work. Assessment marks can be discussed with the teachers. Some teachers make the distribution of marks publicly available. Students of this programme report that the assessment system is clear and adequate, and that they are satisfied with the system.

The social partners as well as the alumni explained that the program has met their expectations. They also stated that the reorganization of the programme does fit with professional requirements.

One important aspect of the programme is a professional internship (13 weeks/36 hours per week). It is given 18 credits, which amounts to a workload of 450-540 hours. This fits with the actual working load of 468 hours. After the internship the student has to create a written report, which is assessed by the tutor. The students can choose the tutor from the side of the social partners freely. The university/faculty provides the students with an online system for finding an internship. There are usually companies, with which the faculty has some experience of successful internships, i.e., the online system is also used as a measurement to control the quality of internships. The system is established, there are currently not many additional new companies registered. Since many students are also working (and sometimes 75% of the time, as we have been informed by some the students), internships are also granted to the employers of the students. Before the internship is accepted, an internship agreement is set up and signed, which provides another form of quality control.

6. Programme management

The Study Programme Committee has the responsibility for decisions and monitoring of the implementation of the programme. The committee meets 1-2 times each semester and has adapted the study programme in recent years to react on labor market needs, and also on student comments.

The SER cites a recent survey among IT students, which was created using a university-wide online system for the evaluation of lectures. According to the figures given in the report, during 2 years 115 questionnaires for 17 lecturers (teaching staff) and 14 courses were collected. This implies that a lecture usually gets 6-7 evaluation reports. Most of the questions related to the teachers' performance got positive answers (usually 60% agreement and more), with the exception of "*consultation outside lectures*", which has a little lower agreement. Lower evaluations are given for the literature accessibility in the library, but the Review Panel agrees with the self-assessment committee that this is mainly due to the fact that students can download the required literature from the internet. Somewhat more critical evaluations were given by the students when answering the question "*scientific research on the topic is presented*". This seems also to be related to the overall problem of teachers finding more time for research, and the faculty should find appropriate measures to solve this problem.

Overall the Review Panel got the impression that the evaluation of teaching is functional. However, the teachers have the same problem as teachers in other universities, namely that most students do not take part in the evaluation. In the SER, it is stated as a weakness of the programme that *the feedback of students is not actively organized; the number of students participating in surveys are low*. It was mentioned during the visit that the evaluations have a low impact; for example, it was said the outcome of the evaluation is not discussed or they do not know about such cases. This could be considered as one of the reasons of the low participation in evaluation. However, alumni report that their feedbacks have been taken into consideration when improving the programme.

The programme has been under constant improvement since 2008, including adaption to technological development. Thus, course covering recent developments such as cloud computing, image and signal processing or web services as well as courses to improve the students' use of English have been added. The faculty has participated in the AMIPA project. The evaluation and recommendation of this project were used to improve the study programme and especially to develop new courses such as *Cloud Computing* and *Image Analysis*. Only the process of generating the Self-Evaluation Report could be improved. There is quite some inconsistency between the Self-Evaluation Report and the actual practice of the programme.

The panel got evidence during the visit that the programme evaluation and improvement process involves the teachers, the students and the social partners.

The Review Panel got the impression that there is constant improvement of the study programme. This can be one of indicators that the quality assurance measures are effective.

III. RECOMMENDATIONS

1. The University of Vilnius and the Faculty of Mathematics and Informatics seem to give quite some incentives for teaching. Salaries of teachers mostly depend to a large extent on the number of classes taught, and as much as up to 20 hours of teaching per week has been reported. The Review Panel recommends giving more incentives for research, especially for young teachers. The faculty should try to encourage staff to apply for research projects, and if possible, financial incentives should be given for a successful grant application.
2. The process of installing software for students should be improved. For students, it must be clear whom to contact from the staff. Furthermore, software that is required for lectures or lab work should be made accessible in due time.
3. For promoting teachers in computer science, currently only the number of publications on venues listed in ISI Web of Science is used. Albeit this is the current standard in many universities, this excludes some well-established conference proceedings in computer science, and this is in disadvantage for faculty successfully publishing in computer science conferences. Thus, the Panel proposes adapting this better for computer science. At the time of this evaluation, it is recommended to use the service of Microsoft Academic Search to evaluate the quality of publications in computer science journals and conference proceedings.
4. The faculty should ensure that most of the listed optional courses are actually taught.
5. Students sometimes do not know whether the changes they have proposed actually have been implemented. It is recommended to improve the feedback control process, for example, by informing the student representatives or other ways.
6. The average age of teachers is relatively high. The Panel recommends actively working on a solution for this problem, for example, by trying to recruit young active researches.
7. The process of generating the Self-Evaluation Report should be improved. There is some inconsistency between the Self-Evaluation Report and the actual practice of the programme.
8. The entrance examination to the programme should be updated. Furthermore, it should be better adapted to the requirements of the programme.

IV. SUMMARY

The aims and learning outcomes of the Master study programme in Computer Modeling are well defined, clear and publicly available. The programme aims fit also with the requirements of the labor market. This can be clearly seen from the high employment rate of the graduates from this programme. In addition, the social partners have expressed their strong interest in the programme and its learning outcomes. The programme also offers a wide curriculum, including subjects like *methods of nonlinear modeling, secure internet technologies, spatial databases, biometrics, networks* and *cloud computing*.

The faculty is well equipped with computing resources. It provides very modern computer facilities for students. In addition, the faculty has invested recently in a supercomputer with 2000 cores and 600 TB of disk space. This is currently the largest supercomputer in Lithuania. This computing resource is important especially for the study programme of Computer Modeling, where scientific computing involves solving complex computational problems. Furthermore, the faculty has several computer rooms for specialized topics like mobile applications.

The library is well equipped with recent literature in computer modeling. A very positive aspect is that students have access to ACM and IEEE digital libraries. This gives them the possibility to read most of the important research papers and journals in computer science.

The international Review Panel assessed also the master theses. The topics for the master theses mainly fit to the overall subject of the programme. The length and scientific details of the theses seem to be appropriate for a master level in computer science. The assessment of a thesis does include a written report by the supervisor, which is appreciated by the international Review Panel. The Review Panel was also satisfied with the quality of the master theses it reviewed.

Concerning the study process and the programme management, the Review Panel got the impression that both are quite functional. Both the students and the social partners can influence the study programme in a positive way. However, it seems that some feedback to students concerning implemented changes is missing, so it is recommended to optimize the feedback process.

In addition, the Review Panel got the impression that the programme is run by very competent teachers. Furthermore, the Review Panel was also impressed by the fluent use of English

language in the reviewing process, both from the teachers as well as from the students. One problem seen with the teaching staff is the high average age of teachers, and the high teaching load. Concerning the teaching load, the number of courses taught currently defines salaries to a large extent. It would be great if more monetary incentive could be given for more research-related tasks, such as successful third-party funding, papers on well-known conferences or similar achievements.

The current teaching staff evaluation according to ISI Web of Science seems to be suboptimal. This excludes especially some well-established conference proceedings in computer science. Thus, the Panel recommends adapting this better for computer science. At the time of this evaluation, it is recommended to use the service of Microsoft Academic Search to evaluate the quality of publications in computer science journals and conference proceedings.

Concerning internationalization, the faculty has contact within the programme with foreign universities and organisations like CERN and the universities of Bolzano and Zurich. In an effort of internationalization, the faculty is currently also trying to make the programme accessible to other universities, with a special emphasis to Eastern Europe.

V. GENERAL ASSESSMENT

The study programme *Computer Modeling* (state code – 621I10002) at Vilnius 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.	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.

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**VILNIAUS UNIVERSITETO ANTROSIOS PAKOPOS STUDIJŲ PROGRAMOS
KOMPIUTERINIS MODELIAVIMAS (VALSTYBINIS KODAS – 621I10001) 2014-03-21
EKSPERTINIO VERTINIMO IŠVADŲ NR. SV4-96 IŠRAŠAS**

<...>

V. APIBENDRINAMASIS ĮVERTINIMAS

Vilniaus universiteto studijų programa *Kompiuterinis modeliavimas* (valstybinis kodas – 621I10002) 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

Kompiuterinio modeliavimo magistro studijų programos tikslai ir studijų rezultatai yra tiksliai apibrėžti, aiškūs ir viešai prieinami. Programos tikslai atitinka ir darbo rinkos reikalavimus. Tai įrodo aukštas šios studijų programos absolventų įsidarbinimo lygis. Be to, socialiniai partneriai išreiškė didelį susidomėjimą programa ir jos studijų rezultatais. Programoje siūlomas platus studijų turinys, įskaitant tokius dalykus: *Netiesinio modeliavimo metodai, Saugios interneto technologijos, Erdvinės duomenų bazės, Biometrikos sistemos, Tinklai ir Debesijos kompiuterija.*

Fakultetas yra pakankamai aprūpintas kompiuterine įranga. Čia studentams suteikiamos labai modernios kompiuterių patalpos. Be to, fakultetas neseniai investavo į 2000 branduolių ir 600 TB atminties turintį superkompiuterį. Šiuo metu tai yra galingiausias superkompiuteris Lietuvoje. Šis kompiuterijos įrenginys yra itin svarbus Kompiuterinio modeliavimo studijų programai, nes studijuojant mokslinę kompiuteriją reikia spręsti sudėtingus skaičiavimo uždavinius. Be to, fakultete įrengtos kelios kompiuterių auditorijos, skirtos specializuotoms temoms, tokioms kaip mobiliosios programos.

Biblioteka yra puikiai aprūpinta naujausia kompiuterinio modeliavimo literatūros. Labai gerai, kad studentams suteikiama galimybė naudotis ACM ir IEE skaitmeninėmis bibliotekomis. Taip jie įgyja galimybę skaityti daugumą svarbių mokslinių tyrimų leidinių ir žurnalų apie kompiuterijos mokslą.

Tarptautinė ekspertų grupė taip pat vertino ir magistro baigiamuosius darbus. Magistro darbų pavadinimai daugeliu atvejų atitiko bendrą programos kryptį. Magistro darbų trukmė ir moksliniai elementai yra tinkami kompiuterijos mokslo magistro lygiui. Baigiamojo darbo vertinime yra įtrauktas rašytinis darbo vadovo atsiliepinimas, ką gerai vertina tarptautinė ekspertų grupė. Taip pat, ekspertų grupė buvo patenkinta peržiūrėtų magistro darbų kokybe.

Vertindama studijų procesą ir programos vadybą ekspertų grupė susidarė išpūdį, kad abu yra gana funkcionalūs. Tiek studentai, tiek socialiniai partneriai gali daryti teigiamą įtaką studijų programai. Tačiau, atrodo, kad studentams apie kai kuriuos įgyvendintus pokyčius nėra pranešama, todėl rekomenduojama optimizuoti grįžtamąjį ryšį.

Be to, ekspertų grupė susidarė išpūdį, kad programą dėsto labai kompetentingi dėstytojai. Taip pa, vertinimo metu ekspertų grupei padarė išpūdį tiek dėstytojų, tiek studentų laisvai vartota anglų kalba. Viena dėstančiojo personalo problema – didelis dėstytojų amžiaus vidurkis ir didelis dėstymo krūvis. Dėstymo krūvio intensyvumą lemia tai, jog dėstomųjų dalykų skaičius turi įtakos atlyginimo dydžiui. Būtų gerai daugiau piniginių paskatinių skirti už su moksliniais tyrimais susijusias užduotis, pavyzdžiui, sėkmingas trečiosios šalies finansavimas, pristatymai garsiose konferencijose ar panašūs pasiekimai.

Dabar taikomas dėstančiojo personalo vertinimas pagal publikacijas „ISI Web of Science“ platformoje nėra visiškai optimalus. Ten neįtraukta kai kuri pripažintų kompiuterijos mokslo konferencijų medžiaga. Todėl ekspertų grupė rekomenduoja jas geriau pritaikyti kompiuterių mokslui. Šio vertinimo metu buvo rekomenduota naudotis „Microsoft Academic Search“

platformos paslaugomis, kad būtų įvertinta publikacijų kokybė kompiuterijos mokslo žurnaluose ir konferencijų medžiagos kokybė.

Kalbant apie internacionalizaciją, fakulteto studijų programos atstovai palaiko ryšius su kai kuriais užsienio universitetais ir organizacijomis, pavyzdžiui, CERN ir Bolcano bei Ciuricho universitetais. Fakultetas stengiasi plėtoti internacionalizaciją ir šiuo metu rengiasi programą pristatyti kitiems universitetams, ypač Rytų Europos universitetams.

III. REKOMENDACIJOS

1. Vilniaus universitetas bei Matematikos ir informatikos fakultetas skiria dėstytojams paskatinimus. Dėstytojų atlyginimai daugiausia priklauso nuo turimų paskaitų skaičiaus, kaip buvome informuoti, iki 20 dėstytojų valandų per savaitę. Ekspertų grupė rekomenduoja skirti daugiau paskatinimų už mokslo tiriamąjį darbą, ypač jauniems dėstytojams. Fakultetas turėtų stengtis skatinti personalą teikti paraiškas dėl mokslinių tyrimų projektų ir, jei įmanoma, finansinis paskatinimas turėtų būti skiriamas už sėkmingai patvirtintą paraišką dėl mokslo stipendijos.

2. Studentams turėtų būti pagerintas programinės įrangos diegimo procesas. Jiems turėtų būti aišku, su kuo iš personalo susisiekti. Be to, paskaitoms ar laboratoriniams darbams reikalinga programinė įranga turėtų būti prieinama tada, kada reikia.

3. Kai sprendžiami kompiuterijos mokslo dėstytojų paaukštinimo klausimai, šiuo metu atsižvelgiama tik į publikacijų skaičių tuose leidiniuose, kurie įtraukti į „ISI Web of Science“ platformą. Nors dabartiniu metu daugelyje universitetų tai yra standartas, ten neįtraukta kai kurių labai aukšto lygio kompiuterijos mokslo konferencijų medžiaga, o tai – užkerta kelią fakultetui sėkmingai skelbti publikacijas kompiuterijos mokslo konferencijose. Todėl ekspertų grupė siūlo tai geriau pritaikyti kompiuterijos mokslui. Šio vertinimo metu rekomenduojama vertinant publikacijų kokybę kompiuterijos mokslo žurnaluose ir konferencijų medžiagą naudotis „Microsoft Academic Search“ platforma.

4. Fakultetas turėtų užtikrinti, kad dauguma dėstomų pasirenkamųjų dalykų būtų iš tikrųjų dėstomi.

5. Kartais studentai nežino, ar jų pasiūlyti pokyčiai buvo iš tikrųjų įgyvendinti. Rekomenduojama pagerinti grįžtamojo ryšio kontrolę, pavyzdžiui, informuojant studentų atstovus arba kitais būdais.

6. Vidutinis dėstytojų amžius yra santykinai didelis. Ekspertų grupė rekomenduoja aktyviai ieškoti šios problemos sprendimo, pavyzdžiui, bandant įdarbinti jaunos aktyvius mokslininkus.

7. Savianalizės suvestinės sudarymas turėtų būti pagerintas. Yra šiek tiek neatitikimo tarp savianalizės suvestinės ir realios programos praktikos.

8. Reikėtų atnaujinti studijų programos stojamąjį egzaminą. Be to, jis turėtų būti labiau pritaikytas programos reikalavimams.

<...>

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.