STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

Kauno technologijos universiteto

STUDIJŲ PROGRAMOS *INFORMACINĖS SISTEMOS*
(valstybinis kodas – 612I20001)
VERTINIMO IŠVADOS

EVALUATION REPORT
OF *INFORMATION SYSTEMS (state code – 612I20001)*
STUDY PROGRAMME

At Kaunas University of Technology

Review' team:

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Išvados parengtos anglų kalba

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DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	***Informacinės sistemos***
Valstybinis kodas	612I20001
Studijų sritis	Fiziniai mokslai
Studijų kryptis	Informacijos sistemos
Studijų programos rūšis	Universitetinės studijos
Studijų pakopa	Pirmoji
Studijų forma (trukmė metais)	Nuolatinės (4)
Studijų programos apimtis kreditais	240 ECTS
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Informacijos sistemų bakalauras
Studijų programos įregistravimo data	2010-04-08

INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	***Information Systems***
State code	612I20001
Study area	Physical Sciences
Study field	Information Systems
Type of the study programme	University studies
Study cycle	First
Study mode (length in years)	Full-time (4)
Volume of the study programme in credits	240 ECTS
Degree and (or) professional qualifications awarded	Bachelor of Information Systems
Date of registration of the study programme	April 8th, 2010

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I. INTRODUCTION

1.1. Background of evaluation process

The evaluation of on-going study programmes is based on the **Methodology for Evaluation of Higher Education Study Programmes,** approved by the Order No 1-01-162 of 20th December 2010 of the Director of the Centre for Quality Assessment in Higher Education (hereafter, SKVC). 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 the Self-evaluation Report prepared by a Higher Education Institution (hereafter, the HEI); 2) a visit of the Review Panel at the higher education institution; 3) preparation of the evaluation report by the Review Panel and its publication; 4) follow-up activities.*

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

The programme is **accredited for 6 years** if all evaluation areas were 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).

1.2. General

The application documentation submitted by the HEI follows the outline recommended by 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.	Student final theses
2.	Statute of KTU
3.	Guidelines for improvement of KTU study programmes

4.	Regulation and Protocols for Field Study committee and faculty committees
5.	KTU Quality Guide
6.	Report on Evaluation of Information Systems Programme

1.3. Background of the HEI/Faculty/Study field/Additional information

The Kaunas University of Technology (KTU), evolved from the Higher Education Courses established in 1920, consists of 9 faculties, the library, 10 research institutes as well as departments of administration and support. KTU academic staff consists of 2250 employees of which 1525 are full-time employees. KTU has 10,350 students of which 7,514 are Bachelor students, 2,377 are Master, 352 doctoral students and 460 foreign students seeking a KTU diploma.

KTU offers 132 study programmes of which 52 are Bachelor programmes, 62 Master programmes and 17 Doctoral programmes and 1 non-degree study programme. The programmes sit within six main discipline fields, technological, physical and social sciences, arts, humanities and biomedicine.

The Structure and activities of KTU are geared towards innovations and research with KTU researchers carrying out 12 H2020 projects, 9 FP7 projects, 1 EUREKA project and participation in 46 COST actions.

The Information Systems study programme established in 2009 sits within the Faculty of Informatics and is curated by the Department of Information Systems. The first students were enrolled on the programme in 2010-2011 and the current total numbers acros the four years of under evaluation total 120. [Note by the self-assessment team: 120 is the amount of students that were studying in the program (years 1, 2, 3, 4) at the time the evaluation report was prepared].

The programme received a positive outcome to an accreditation by the Centre for Quality Assessment in Higher Education of the Republic of Lithuania culminating in an award for accreditation for the maximum period of six years. The programme is accredited from 1st January 2013 to the 1st September 2018, however following a decision by the Centre for Quality Assessment in Higher Education to evaluate all study programmes at KTU within the field the self-assessment was prepared two years ahead of schedule.

The programme is the only 1st cycle study programme in the study field of Information Systems (1200), within the Faculty of Informatics at KTU. The programme is a four year full time programme and until 2013 was also offered over six years in part-time mode. The programme offers two specialisations, one in Internet Information Systems and Databases Programming and the second in Information Systems Design and Project Management.

1.4. The Review Panel

The review team was completed according *Description of experts' recruitment*, approved by order No. V-41 of Acting Director of the Centre for Quality Assessment in Higher Education. The visit to the HEI was conducted by the Panel on December 7th, 2016.

1. **Ms. Barbara Howell (Chair of the Team),** *Associate Dean at Coventry University (Faculty of Engineering, Environment and Computing), United Kingdom of Great Britain and Northern Ireland*.
2. **Prof. Dr. Ernst Wilhelm Mayr,** *Emeritus of Excellence at Technical University of Munich, Germany.*
3. **Prof. Dr. Sirje Virkus,** *Professor at Tallinn University (School of Digital Technologies), Estonia.*
4. **Mr. Simonas Razminas,** *Head of Quality at Adform, Lithuania.*
5. **Mr. Rytis Koncevičius,** *Doctoral student at Kaunas University of Technology (Building Services System field), Lithuania.*

II. PROGRAMME ANALYSIS

2.1. Programme aims and learning outcomes

The aims of the Information Systems study programme were outlined (in SER) as follows:

"*30. The objective of the Information Systems study programme is to prepare students, able to analyse, design, implement and improve information systems as well as to work individually and in a team, to cooperate using working results of various nature creatively, to solve new problems and make grounded decisions.*

31. Objective and purpose of specialization "Internet information systems and databases programming" is to train specialists, able to develop and administer IS data bases, including client-server, multi-level, and distributed solutions, to implement network services based IS architectures and software access to data, to work efficiently in IS development teams understanding modern project management methodologies and tools.

32. Objective and purpose of specialization "Information systems design and project management" is to train specialists, able to model and modernize business processes of enterprises, to analyse and specify user requirements, to plan for, design, implement, and evaluate computerized information systems in various business and public scenarios applying modern project and teamwork management techniques."

The name of the programme, its learning outcomes, content and the qualifications offered are compatible with each other. However, there is space for improvement:

The Panel would **recommend** a significant increase in the amount of teamwork and leadership in the curriculum as separate subject or as part of some modules". (Or remove or change learning outcome D4 which is formulated next: "skills required to work effectively both individually and in a team, assign tasks and responsibilities, manage projects and their teams"). This is very important since teamwork seems to be part of the aims (item number 30, see above).

Remove or adjust learning outcome C3 (theoretical understanding of state-of-the-art software and hardware technologies and tools and the skills required to use them). The Panel is however confident that graduates will have skills to use new technologies, but found very little evidence of content related to more current or state-of-art technologies.

According to the aims of the programme, graduates of Information Systems design and project management specialisation will have to deal a lot with people: analysing and gathering requirements. Students convinced the Panel that they have improved their skills with simulations provided by one teacher, however the Panel would **recommend** the introduction of subjects focused on soft skills only.

Programme aims and learning outcomes are defined based on the public needs and the needs of the labour market. Both social partners and students met by the Panel confirmed that they were satisfied that these needs would be met.

During the visit learning outcomes were not available online because of the website updates. The Programme Management Team were not aware of the change and assured the Panel that the learning outcomes were accessible online prior to the visit. Programme Aims are well defined. Learning outcomes are at a satisfactory level, but improvements and further development is recommended. The Panel were of the view that the learning outcomes are not yet used as a tool to develop the programme to its full potential. The Panel therefore makes the following **recommendations**:

- Although the number of learning outcomes has been reduced the team suggest a further reduction as the number remains excessive.
- Each learning outcome should be strongly covered at least by one subject (avoid ones that have soft or indirect touch only).
- Improve Table 2.3.1.2. (Study courses and Programme learning outcomes relationships matrix), to make it more easily understood for each of the specializations and how they are aligned with learning outcomes.
- Programme aims and learning outcomes are consistent with the type and level of studies.

The Panel is pleased to note that the learning outcomes are organized according to EQANIE recommendations, but suggests making the next step in mastering those. The Panel believes that learning outcomes will be adjusted further when they are organised according to the newest version of the EQANIE recommendations.

2.2. Curriculum design

The Study Programme is in pursuance with relevant legal acts and regulations; it has been carried out in accordance with KTU academic regulations, and has been informed by the general development plans of KTU and the requirements of the labour market and general legislative and guiding documents for higher education and research in Lithuania.

The Study Programme comprises of 240 ECTS credits distributed over the entire duration of the study programme, each semester with 30 credits. The average study load is spread evenly over the entire study programme duration. The Programme includes two specialization areas: 1)

Internet Information Systems and Databases Programming, and 2) Information Systems Design and Project Management.

The content of the courses is consistent with the type and level of studies. The scope of the programme is sufficient to ensure that learning outcomes can be met. The course/programme themes are not repetitive. The suggestions of the last accreditation have been implemented in the curriculum; one suggestion was not implemented, but the argumentation was provided.

A matrix form in the SER [SER, Table 2.3.1.2.] clearly demonstrates the relationship between study programme and each study subject learning outcome.

The methods of learning and assessment employed in the courses in general are appropriate for the achievement of the course and programme intended learning outcomes. A range of instructional methods are used according to the SER [SER, p. 13, para 51] as well as to the programme (courses). However, it was evident that the traditional teaching and learning methods were dominant and the overall approach is very transmissive, with an emphasis on lectures. A number of initiatives do exist, but they appear to be mostly due to individual teachers and they are based mostly on intuition, not on true knowledge of current pedagogy. Students, alumni and teachers meetings confirmed this. There was little evidence of systematic sharing of best practices among teachers. However, the Panel was of the view that the study programme provides enough opportunities for practical work. This was confirmed by the students themselves.

It was also evident that the academic staff workload is very high leaving little time to improve their teaching strategies and methods. Despite the heavy workloads of academic staff, students praised the accessibility of teaching staff and the student-friendly atmosphere, providing evidence of positive staff-student collaboration. The **recommendation** is that all Information Systems teachers should be made aware of alternative teaching strategies, with a focus on the different types of learning outcomes aimed for and taking into account different learning styles. Periodical occasions should be created for sharing best practices among all teachers within the institution. The KTU should also periodically verify that teachers do use the most effective teaching and learning approaches for their courses.

It was not always evident that the content of the programme reflects the latest achievements in science, art and technologies.

Summing up, the name of the study programme, its intended programme and courses learning outcomes, content, and qualifications offered are altogether compatible with each other. The evidence from student, alumni and staff meetings together with the internal self-assessment report indicates that the degree objectives are generally achieved. The meetings with students revealed the positive value of the updated curriculum, even though the students are not formally asked for their opinions and feedback. However, in some particular cases the students did not understand the reasons for changes (e.g., the inclusion of a new course). The Panel would therefore suggest that there is a need for more involvement of students in the process of curriculum review as another source of inputs for the process.

2.3. Teaching staff

The teaching staff of the KTU Bachelor in Information Systems comprises 58 coordinating teachers (14 lecturers, 32 associate professors, and 12 professors). For the specialization courses, there are 11 coordinating teachers (4 lecturers, 6 associate professors, and 1 professor). While the SER indicates that teaching staff numbered the aforementioned 58 members, the appendix of the SER only lists 44. It is not clear to the Panel where this difference comes from, other than the fact that there has been some turnover of staff. While this turnover has been significant, coverage of course topics and adoption of new topics and methodologies was handled and managed quite well.

All teachers meet the legal requirements concerning their education and research degrees.

Of course, many of the teachers contribute not only to the (first cycle) Bachelor in Information Systems program, but also to other study programs like the (first and/or second cycle) study programme in Informatics.

The age distribution of the teaching staff appears appropriate, and compliments the rapid development (both scientific as well as technological) in the area. Several steps have been taken to address the age range of the staff (in comparison to the previous report), in a number of cases initiated by staff turnover. It should be noted in this respect that the average age for the lecturers, as given in the SER, is 47years (in 2016), with 18 lecturers less than 40 years of age.

Looking at the qualifications of the teachers for the individual courses as well as for the study program as a whole, there seems to be no noticeable problem with regard to ensuring the learning outcomes.

Clearly, the number of available teachers is related to the teaching load of the individual teachers (which, of course, varies depending on their employment). While the Panel is convinced that the (present) number of teaching staff is still adequate to ensure the learning outcomes as such, there is room for improvement and it has to be taken into account that the actual teaching load in a number of cases is considerably higher than the regulations.

With respect to professional development, comments from the teaching staff were positive in general. The department and KTU offer opportunities regarding professional development, internationalization and the acquisition of research projects, complemented by good contacts of the teachers/researchers to companies and industry. As can be seen from the detailed information provided in the CVs in the SER annex, these opportunities have been used very well in a number of cases. However, the use of these measures should be increased, with in particular a greater emphasis on internationalization.

In summary, the overall impression is very positive, with the exception of teaching load which appears very high in a number of cases. Given the general performance of the study program (and its relevance to the IT academic education in Lithuania), serious efforts should be taken here to encourage applications of highly qualified and relevant teachers.

As a remark, the Panel would like to add that (apart from the small ambiguities mentioned at the beginning of the section) the part of the SER concerning the Academic Staff (i.e. section 2.3 in the SER) is very informative, detailed, and nonetheless succinct.

2.4. Facilities and learning resources

Overall, the premises for studies (buildings, classrooms, and laboratories), the teaching and learning equipment (laboratory and computer equipment, consumables) are adequate both in their space and quality. There are three types of classrooms: auditoriums, computer classes, and laboratories - in total, 34 different classrooms can be employed. All auditoriums and computer labs are equipped with overhead projectors, connected to a desktop computer, two laboratories have smart screens. Faculty of Informatics also has an Audio-visual Technology Training Centre (Multimedia Technology Training Laboratory and Video Studio Training Laboratory), Mobile Solution Laboratory, and Cisco Laboratory. In cases when additional workplaces are required, the Faculty also rents computer labs. Halls are made into comfortable areas for students to relax or work, and there are sockets to charge laptops or use them wired.

In March 2012, the Centre of Information Systems Design Technologies was established within the Faculty of Informatics. This has been an initiative of the Department of Information Systems. The Centre has been valuable for the Programme providing resources both to the teachers and students of the programme.

The Panel had the opportunity to visit several laboratories which appeared to be up-to-date. There is a diversity of equipment, hardware and software available for the students. Well-equipped laboratories provide good support for learning and teaching. Internet connection is sufficient and wireless network is accessible through the premises. Information and communication technologies are introduced extensively in all aspects of teaching and learning. The teaching and learning process is supported through the electronic platform Moodle. The University also has a Distance Learning Technologies Research Laboratory which provides resources that enhance the teaching/learning experience of both the teaching staff and of the students.

In addition, there are several software tools available for students that can be downloaded for home use to perform specific tasks related to the study programme. Students may acquire also licenses for various products and software. These privileges are granted by signed agreements between KTU and the software developers.

KTU has adequate arrangements for students' practice. Practice may be performed also at the social partner sites – companies closely collaborating with the Faculty. Students may either choose practical training locations on their own or rely on suggestions provided by the University. Since 2014, the Centre of Information Systems Design Technologies is operating in the newly established integrated science, study and business centre in Santaka Valley, where it is one of two R&D centres of the Faculty of Informatics. Students that choose to do their final practice at the Centre, gain access to technological and software resources provided by the valley (via an open access point). The centre has a number of up to date software products dedicated for specific activities.

There is a central library within the KTU, which on brief inspection appeared well organized, giving access both to print-based and electronic resources. Teaching materials (textbooks, reference books, monographs, periodical publications, databases) are adequate and accessible. The University library belongs to the Lithuanian Academic Libraries Network (LABT) and can use their joint resources. The central library subscribes to about 30 international databases, such as: Web of Science, SpringerLINK, BMJ Journals Online Collection, Emerald Engineering

eJournals Collection, Oxford University Press Journals and others. Library computers can be used to access public internet sites and restricted subscriptions and databases as well. The majority of study materials can be accessed via the Internet in digital form. Librarians periodically provide lectures and workshops regarding electronic knowledge database usage tools and methods, and provide resource search consultations. Students may also use multifunctional printing device for printing or copying any learning material. The Library has a reading room with 120 seats. However, it seemed that more student workplaces are needed, especially during the exam sessions.

The Department of Information Systems also has their own departmental library which is available to all of teachers as well as students of the programme.

KTU uses the common study information system which supports the study process at the University: administration of study programmes and modules, student records, planning and administration of teachers' pedagogical workload and other.

The KTU has an intranet – Document Management System (DMS) which ensures functions of staff management and provides a possibility for the staff of the study programme to manage documents related to the programme, i.e. task management, management of agreements, reports of duty trips in Lithuania and abroad, financial reports, trainings on the procedures of applying for, confirmations and rejection of duty trips, etc.

For distance studies KTU uses in addition to Moodle, video conference system Vidyo, video lecture transmission systems Adobe Connect and ViPS. The lectures are not only broadcasted online, but also recorded. If students are not able to participate virtually in the class while it is broadcasted, they can watch the class at any other time on the Internet. Adobe Connect and ViPS systems ensure interactive participation of students in classes from any workplace in Lithuania or abroad. Live broadcast of classes or their records can be watched on smartphones or tablets.

Students and teachers use the common system to login to all systems and resources, thus access to the study information system, Moodle, Vidyo, ViPS, Office365 and other resources is ensured by means of one account.

Meetings with students, alumni and teachers confirmed that facilities and resources for teaching and learning are adequate. Some students mentioned that the technology could be sometimes better, but were generally satisfied.

In conclusion, the variety as well as quantity of learning facilities and resources is sufficient to achieve the learning outcomes of the study programme.

2.5. Study process and students' performance assessment

Admission rules and procedures are well defined and publically accessible. They align with the legal requirements of KTU access. The criteria for admissions include the performance in secondary education in mathematics (weight 0.4), information technologies or physics (0.2), Lithuanian language and literature (0.2) and any other subject (0.2). Admission procedures are held under the LAMA BPO. The number of admitted students has remained stable (see table 2.5.1.1 of SER): 31 in 2012, 35 (2013), 31 (2014), 37 (2015), 35 (2016). As can be seen from the data given in the said table, there was a decrease in first applications submitted during the first state of admission, but that decrease had no effect on the amount of admitted students.

The study process and examinations are organized reasonably well. Students have the possibility to retake exams in the case of failure or non-attendance. The individual work of students is sufficiently mentored. Students also have the opportunity for independent study supported by the virtual learning system Moodle. However, the dropout rate has increased from seven in 2013 to 19 in 2015. The main reasons for this are students' lack of motivation to study and subsequent low level of attendance. In order to address the declining numbers of students the Panel would **recommend** structured plans with key interventions should be put in place.

The students of the Study Programme are encouraged to participate in the applied research activities: in practical science conferences ("Technorama", "Night of nights"), contests, and prepare and read reports at conferences. There is also an established Academic Science Club. In addition to these activities the Panel would urge the programme team to encourage the students to take part in international conferences outside of Lithuania.

KTU has a good range of mobility opportunities and associated mobility projects. After meeting with the students the Panel members noted that the students were not well informed about the student mobility programmes. KTU has exchange agreements with a number of European universities but only a few students during those 3 years have participated in an exchange. The Panel would therefore **recommend** that programme teams promote the mobility opportunities more widely and take steps to encourage greater participation in mobility activities.

In terms of social and sports facilities, KTU offers adequate psychological, health and cultural activities (14 art collectives, choirs, folklore ensembles, music orchestras, dance studios,

photography and design clubs), career support (career centre). KTU has further provided opportunities to get various scholarships, taken from the State and KTU funds. According to the SER, high achieving students within a particular study field can receive additional scholarship funding.

The Panel confirmed from meetings with the students and staff that the assessment requirement are clear, adequate and publicly available. Criteria for student achievement are announced at the beginning of the semester, and teachers introduce students to the assessment criteria during the first lessons.

In summary the Panel suggests greater promotion of the mobility programmes and further encouragement of student participation in mobility activities. The Panel also **recommends** the introduction of planned interventions to support student engagement in and attendance on the study programme (to help reduce the attrition rates).

2.6. Programme management

As set out in the SER the Vice Rector has ultimate administrative and quality assurance oversight of programmes. The Study Committee of Senate advises Senate on the approval and closure of programmes. Since 2015 the KTU Study Programme Committee consisting of 9 members representing the various areas and chaired by the Vice-Rector for Studies, reviews the quality of existing programmes and overseas new programmes. KTU Study Programme Committee and Studies Office agree any essential changes to a programme in conjunction with approval by Faculty Council.

Since 2016 Fields' Study Programme Committee (FSPC), comprising five faculty members, social partners and students, coordinated by the Manager of the FSPC is responsible for the content and quality of the programme and also of the process of annual review of the structure and content of programmes. The Council of the Faculty of Informatics, comprising 17 members of which 3 are students, has responsibility for the approval of new programmes.

The scheduling of study and coordination of the study process rests with the Study Centre of the Faculty (Vice-Dean for Studies, Administrator of Study Programmes and Administrator of Study Affairs). Responsibility for the quality of the programmes modules, their coherence within the programme and delivery needs is shared between the Head of Department and the Manager of Information Systems Field's Study Programme Committee.

The Panel confirmed these arrangements and were satisfied that the committees meet as intended and students participated as members of committees and would strongly suggest the programme teams continue to involve students though formal committee structures. It was further confirmed that Head of Department evaluates the programmes and uses descriptors as part of the reviews. The Manager of Field's Study Programme Committee also has his/her say in the process of evaluating Programme's courses. Although the comments from the review are posted on central database, it was less clear that a formal report had been completed and the Panel heard that it was up to each Head of Department to determine how evaluations take place. The Panel therefore **recommend** more formal, systematic arrangements are put in place.

Teachers, Faculty Administrators and Heads of Study Programme committee have access to student survey feedback [SER pg 32, para 204].

The programmes undergo periodic certification, which can be from 1-3 yrs. The Panel confirmed external review has taken place in 2013 and the programme was accredited for the maximum term of 6 years in recognition of the positive outcome.

The evaluation and improvement processes involve stakeholders with the responsibility for the regular collection and analysis of student feedback resting with the Manager who then make plans for improvements. The SER claims that KTU further collects stakeholder feedback at three key points in the student life cycle (mid semester, end of semester and after graduation) from students, graduates, teachers and employers to evaluate study subjects, programmes teachers and aspects of academic life.

Results of the surveys (which at times had poor response rates) are considered by FSPC, Faculty Administration and the Students with discussions also taking place at meetings of the Department and of the Deans Office. Round table feedback from students is also considered by Faculty Administration and member of the Study Programme Committee.

During meetings with both the staff and students the Panel were satisfied that students were able to share their views on the study programme through mid term and end of semester surveys and also round tables. Panel also learnt that employers were involved in an electronic survey that was carried out in August 2016 and althought the feedback was quite low the surveying process will continue in the future. Informal mechanisms are further in place to gather employer feedback during visitor lecturer sessions etc. However the Panel were less convinced that Alumni had been consulted. The Panel would therefore **recommend** that greater efforts are made to obtain and use feedback from companies, social partners and alumni is obtained and a greater use is made of

their valuable input. There was also a student representative system in operation however it was less clear how effective this was in practice. It was however clear that informal mechanisms were in place and if the student had a problem they would talk to their lecturer or go the dean.

Internal Quality Assurance oversight is governed by the KTU Quality Guide, which considers areas such as the management and administration and describes a quality assurance model based on the higher education quality assurance guidelines and regulations.

From reading the SER, meetings with staff, students, alumni and social partners, reviewing additional documentation on the committee structure and quality guides, the Panel viewed that overall KUT has mechanisms in place for the effective and efficient internal quality assurance of the Information Systems Study Programme. Therefore assessment of the Panel of the programme management is rated as a three.

2.6. Examples of excellence

The student praised the accessibility of teaching staff and the student-friendly atmosphere, providing evidence of positive staff-student collaboration.

III. RECOMMENDATIONS

1. Increase in the amount of teamwork and leadership in the curriculum as separate subject or as part of some modules (or remove or change learning outcome D4) and also subjects focused on soft skills.
2. Although the number of learning outcomes has been reduced the Panel suggest a further reduction as the number remains excessive.
3. Programme aims and learning outcomes are consistent with the type and level of studies and each learning outcome should be covered by at least one subject.
4. Improve Table 2.3.1.2. (Study courses and programme learning outcomes relationships matrix), to make it more easily understood for each of the specialisations and how they aligned with learning outcomes.
5. KTU teachers should be made aware of alternative teaching strategies, specially geared towards the different types of learning outcomes aimed for and taking into account different learning styles; periodical occasions should be created for sharing best practices among all teachers within the institution. KTU should also periodically verify that teachers do use the most effective teaching and learning approaches for their courses.
6. In order to address the declining numbers of students the Panel would recommend structured plans with key interventions should be put in place.
7. Programme teams to promote the mobility opportunities more widely and take steps to encourage greater participation in mobility activates.
8. Put in place more formal, systematic arrangements for the evaluation of programmes.
9. Greater efforts are made to obtain and use feedback from companies, social partners and alumni is obtained and a greater use is made of their valuable input.

IV. SUMMARY

The Information Systems programme was established in 2009 and sits within the Faculty of Informatics. The first students enrolled in 2010-11 and current numbers stand at around 120.

The programme learning aims and learning outcomes, content and the qualification offered were found to be compatible with each other. However the Panel made a number of recommendations to strengthen content, reduce the number of learning outcomes and ensure close, clear and consistent linkage between the outcomes and subject areas.

The curriculum design is compliant and consistent with KTU regulations and the content is consistent with this type and level of study. The method of learning and assessment is appropriate for the achievement of the programme current learning outcomes. Although a range of teaching techniques have been employed they were generally confined to enthusiast individuals. The Panel therefore recommends the all Information Systems teaching staff are made aware of a range of alternative teaching strategies.

All teaching staff meet the legal requirements associated to teaching on the Information Systems programme. The age distribution is further appropriate and compliments the rapid developments both technical and scientific within the Information Systems field. The Panel viewed their present number of teaching staff to be adequate however would suggests improvements could be made to actual teaching load which appeared higher than current regulations.

The facilities to include classrooms and laboratories and teaching equipment were found to be adequate in terms of space, well equipped with up to date software. It should also be noted that in 2012 the faculties established a Centre for Information Systems Design Technologies which was viewed as most valuable resources for the both staff and students. The Panel also noted a well organised Library, local faculty library and a Distance Learning Technologies Research Laboratory which provides an enhanced teaching and learning experience for the both staff and students.

Admissions rules and procedures align to the legal requirement of KTU and are well defined and publicly assessable. The examination process is well organised and individual work is sufficiently supported. However the Panel noted lower than expected retention rates and would recommend structured study plans be put in place to support less motivated students. Mobility opportunities are in place and to increase participation in those opportunities the Panel recommends the programme teams to promote more widely.

The oversight of programmes is managed through the Study Committee of Senate, KTU Study Programme Committee and the recently introduced Field Study Programme Committee which comprises five faculty members, social partners and students. The Panel were satisfied that these structures operated as intended however would strongly encourage the programme teams to continue to involve students through formal committee structures. It was further confirmed that the Head of Department evaluates the programmes however would recommend more formal, systematic evaluations are put in place. Although the students' views are considered through surveys and committees the Panel would also further recommend greater use is made of feedback from companies, social partners and alumni.

Overall the Panel found the effective and efficient internal quality assurance mechanisms are in place across the six evaluations areas with two areas found to be exceptionally good.

V. GENERAL ASSESSMENT

The study programme *Information Systems* (state code – 612I20001) at Kaunas University of Technology is given a positive evaluation.

Study programme assessment in points by evaluation areas.

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	3
	Total:	**20**

*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:	Barbara Howell
Grupės nariai: Team members:	Prof. Dr. Ernst Wilhelm Mayr
	Prof. Dr. Sirje Virkus
	Simonas Razminas
	Rytis Koncevičius