



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

Kauno technologijos universiteto  
**STUDIJŲ PROGRAMOS *INFORMATIKA***  
*(valstybinis kodas – 612I10004)*  
**VERTINIMO IŠVADOS**

---

**EVALUATION REPORT  
OF *INFORMATICS***  
*(state code – 612I10004)*  
**STUDY PROGRAMME**  
At Kaunas University of Technology

**Review' team:**

1. Ms. Barbara Howell (Chair of the Team), *academic*,
2. Prof. Dr. Ernst Wilhelm Mayr, *academic*,
3. Prof. Dr. Sirje Virkus, *academic*,
4. Mr. Simonas Razminas, *representative of social partners'*,
5. Mr. Rytis Koncevičius, *students' representative*.

**Evaluation Coordinator –**

*Ms Birutė Noreikaitė*

Išvados parengtos anglų kalba

Report language – English

Vilnius

2017

## DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	<i>Informatika</i>
Valstybinis kodas	612I10004
Studijų sritis	Fiziniai mokslai
Studijų kryptis	Informatika
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	Informatikos bakalauras
Studijų programos įregistravimo data	1997-04-19

---

## INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	<i>Informatics</i>
State code	612I10004
Study area	Physical Sciences
Study field	Informatics
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 Informatics
Date of registration of the study programme	May 19, 1997

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

## CONTENTS

<b>I. INTRODUCTION .....</b>	<b>4</b>
1.1. Background of evaluation process.....	4
1.2. General.....	4
1.3. Background of the HEI/Faculty/Study field/Additional information.....	5
1.4. The Review Panel.....	6
<b>II. PROGRAMME ANALYSIS .....</b>	<b>6</b>
2.1. Programme aims and learning outcomes.....	6
2.2. Curriculum design .....	7
2.3. Teaching staff .....	9
2.4. Facilities and learning resources .....	11
2.5. Study process and students' performance assessment.....	13
2.6. Programme management.....	14
<b>2.7. Examples of excellence *Klaida! Žymelė neapibrėžta.</b>	<b>18</b>
<b>III. RECOMMENDATIONS</b>	
<b>IV. SUMMARY.....</b>	<b>Klaida! Žymelė neapibrėžta.</b>
<b>V. GENERAL ASSESSMENT .....</b>	<b>190</b>

## 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 20<sup>th</sup> 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.	Additional information supplied on request on teaching staff and their qualifications
2.	Student final theses

### ***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. The KTU academic staff consists of 2250 employees (including 1525 full-time employees). KTU has 10,350 students (7,514 Bachelor, 2,377 Master and 412 doctoral students). 460 foreign students are currently enrolled in the KTU.

The KTU offers 132 study programmes (52 Bachelor, 62 Master, 17 Doctoral programmes and 1 non-degree study programme, 39 of which are taught in English). KTU conducts studies of the first, second and third cycles in six main fields: technological, physical and social sciences, arts, humanities and biomedicine.

The assessed first cycle study programme "Informatics" is provided by the academic staff of the Faculty of Informatics. The Faculty was founded in 1977 and it consists of five academic departments and two research centres: Department of Applied Informatics, Department of Information Systems, Department of Computer Science, Department of Multimedia Engineering, Department of Software Engineering, Centre of Information Systems Design Technology, and Centre of Real Time Computer. In accordance with the Lithuanian system of the study areas classification the Informatics (national classification code I100) belongs to the study field of the Physical Sciences. Teachers and researchers of all five departments of the Faculty of Informatics take part in the Programme, providing academic courses and research activities. KTU Faculty of Informatics staff consists of applied mathematics, multimedia, cyber security, cloud computing and software development professionals, who are engaged in numerous research and development projects. High scientific research and software implementation competences of the Faculty enable the staff to take responsibility to educate the students by providing the adequate knowledge and abilities.

The Informatics Bachelor's degree Programme (ISP) differs from other comparable bachelor programmes in Lithuania, because its aims and learning outcomes are focused not only on providing profound knowledge of computing principles and theory, modelling and programming techniques but also on developing practical skills when applying these concepts in analysing, designing and implementing distributed systems, infrastructures, services and other networked or mobile environments.

#### **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 6<sup>th</sup>, 2016.

- 1. Ms. Barbara Howell (team leader)**, *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 of Information Science 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**

Then Panel was able to confirm that the programme is valued by the social partners and students. Aims and learning outcomes are defined based on the public needs and the needs of the labour market.

During the visit learning outcomes were not available online because of the website updates. This was in spite of the fact that the Programme Management Team had assured the Panel that the learning outcomes would be accessible online before the visit and was not aware of the change. The aims of the programme are well defined. Learning outcomes are at a satisfactory level, but improvements and further development is recommended. The Panel took the view that learning outcomes are not yet used as a tool to develop the study programme to its full potential. Here are the **recommendations** to improve learning outcomes:

- decrease the number of learning outcomes;

- each learning outcome should be strongly covered by at least one subject (avoiding, wherever possible, those having soft or indirect touch only).

Programme aims and learning outcomes are consistent with the type and level of studies.

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

- Introduce subjects (and/or augment current ones) with dedicated a focus on teamwork and leadership (or remove or change learning outcome D4 which currently reads as follows:: “Work effectively as an individual as well as a member or leader of project team”);
- Remove or adjust learning outcome C3 (aware of state-of-the-art and prospective technologies, solutions and tools and has skills to use them). The review panel is confident that graduates will have skills to use new technologies, but didn’t find evidence there is a touch on current ones, or that awareness about state-of-art technologies is created in any way
- Both students and social partners would like to see the following topics reflected in the area of Internet Informatics specialization:
  - infrastructure as a code;
  - DevOps;
  - resilience and chaos engineering;
  - fault tolerance;
  - big data.

Several of these proposals have already been made following the previous review of the programme.

The Panel welcomes the fact that learning outcomes take into account and are organised according to EQANIE recommendations, but strongly **recommends** to take more steps towards implementing them. Among other things, the Panel believes that the learning outcomes will be adjusted considerably when they are adjusted to the newest version of 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 the KTU academic regulations, and has been informed by the Studijų kokybės vertinimo centras

general development plans of the KTU and the requirements of the labour market and general legislative and guiding documents for higher education and research in Lithuania and in Europe. The curriculum developers are aware of the relevant legislation and policies in Europe. The curriculum design is guided also by research and development trends in the field.

The Study Programme comprises 240 ECTS credits distributed over the entire four year duration of the study programme, each semester with 30 credits. The average study load is spread evenly over the entire study programme duration. The structure of the study programme facilitates the process of logical acquisition of knowledge and skills, moving from introductory courses to specialist courses, from more general to specific, from simpler subjects to more complex courses.

The content of the courses is consistent with the type and level of studies. The scope of the programme is sufficient to ensure learning outcomes. The course/programme themes are not repetitive and provide a short recap of knowledge in order to help the students recall essential information. The suggestions of the last accreditation in 2013 have been implemented in the curriculum: the difference between previous and renewed curriculum is 72 credits (30%). In addition, content modification and subject repositioning have been introduced. The changes made in the study programme give more freedom for students to customise their studies. A matrix form in the SER clearly demonstrates the relationship between the study programme and each study subject learning outcome and how a certain subject contributes to a specific set of skills and professional competence. Logical relationships between general study subjects and between specialisation subjects are clearly shown in the Informatics study programme.

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 and supported by ICTs according to the Self Evaluation Report (SER) [SER, p. 18, para 59] as well as to the course programmes. However, it was evident that 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 met confirmed this. There was also little evidence of a systematic sharing of best practices among teachers. However, the Panel felt that the study programme provides enough opportunities for practical work. This was confirmed during meetings with students.



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 collaborations. The Panel would therefore **recommend** that KTU teachers should be made aware of alternative teaching strategies, especially geared towards those with 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.

It was not always evident that the content of the programme reflects the latest achievements in science, art and technologies. The references of the course programmes were not always most recent and did not always reflect the latest developments.

In summary, 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 SER indicates that the degree objectives are generally achieved. The meetings with the students revealed the positive value of the curriculum updates introduced, 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), suggesting a need to better involve students in the process of curriculum revision as another source of inputs for the process.

### ***2.3. Teaching staff***

The teaching staff of the KTU Bachelor in Informatics comprises 34 lecturers (7 lecturers, 19 associate professors, and 8 professors, as well as 22 additional lecturers for supplementary courses). From the supplied information (SER, as well as additional information supplied on the request of the Panel) it was not possible to determine who is a full-time or part-time teacher of the institution (here: KTU Informatics) and, in case of part-time, to what percentage. We think that such information should be included in the next SER Academic Staff Summaries. Of course, many of the teachers contribute not only to the (first cycle) Bachelor in Informatics program, but also to other study programs like the (second cycle) Master in Informatics (IMDP).

The age distribution of the teaching staff appears appropriate, though, in particular with respect to the rapid development (both scientific as well as technological) in the area, it would be very

desirable to increase the proportion of younger faculty members. Several steps in this direction have been taken already (in comparison to the previous report), but the Panel suggests this issue should remain on the agenda of the university and the department. It should be noted in this respect that the average age for the lecturers, as given in the SER, is 50.8yrs.

As judged from the information provided (SER), the legal requirements concerning the teaching staff are satisfied with 26 members of the teaching staff in receipt of a doctoral degree. The same conclusion applies to the requirement concerning the proportion of the number of study field subjects taught by teachers with a scientific degree (by a wide margin).

Looking at the qualifications of the teachers for the individual courses as well as for the study programme 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 adequate to ensure the learning outcomes, this comes with a serious proviso. The actual teaching load (as communicated in the meeting with staff and (hopefully) adjusted to the employment level seems to be 920h/yr, considerably more than the regular numbers. It should be noted that the teaching load can in principle be negotiated on an annual bases, depending on other income.

It should be noted here that, concerning the last few years and the staff of the study program, there has been significant staff turnover, with, in most cases, the goal to adapt to changes in the field and technology.

With respect to professional development, comments from the teaching staff were positive in general. The department and the university offer opportunities for professional development, internationalisation and the acquisition of research projects. The department has a project funded by EU, and many/most of the research projects are on the faculty/department level. Again, the challenge stated more or less unanimously, is the level of the teaching load which considerably hampers efforts to acquire and perform competitive research projects. It is therefore **recommended** that the Faculty should consider reducing the teaching load in order to free time for academic staff to pursue their R & D, personal development and focus more on the quality of the teaching and learning.

The department has a research budget of about 800 T€, including the Horizon project mentioned above. Most smaller projects have to do with projects connected with local industry (and, of course, specific courses), related to the study program.

In summary, the overall impression is positive, except for the fact (for which the faculty obviously cannot be blamed) of a teaching load which appears overly high. Given the general performance of the study programme (and its relevance to the IT academic education in Lithuania), serious efforts should be taken here, e.g. by providing additional financial support for hiring faculty.

#### ***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 size 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.

The Panel had the opportunity to visit several laboratories which appeared to be modern and 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 KTU has also the Distance Learning Technologies Research Laboratory both providing resources that enhance the teaching/learning experience of the teaching staff and 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 software developers.

KTU has adequate arrangements for students' practice. Practice may be performed also in 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.

There is a central library within the KTU, which on brief inspection appeared well organised, giving access both to print-based and electronic resources. Teaching materials (textbooks, reference books, monographs, periodical publications, databases) are adequate and accessible. KTU library belongs to the Lithuanian Academic Libraries Network (LABT) and can use their joint resources. KTU 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 material 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 also may 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 Panel therefore **recommend** KTU to consider creating additional student workplaces in the Library to provide opportunities for student efficient work, especially during the exam period.

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.

KTU has an intranet – Document Management System (DMS) which enables the teaching staff to manage the functions of the study 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 learning, KTU uses in addition to Moodle, the video conference system Vidyo, and the video lecture transmission systems Adobe Connect and ViPS. The lectures are not only broadcasted online, but also recorded. If students are not able to virtually participate in the class while it is broadcasted, they can watch the class at convenient time on the Internet. Adobe Connect and the ViPS system 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 all systems and resources, thus access to the study information system, Moodle, Vidyto, 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 to the studies is on a competitive basis. The criteria for admission include the performance in secondary education in mathematics (0.4), Lithuanian language (0.2), information technology (0.2) and foreign language (0.2) according to the SER [table No. 10]. Admission procedures are held under the LAMA BPO. International students must submit their applications via the KTU Application System. These students must pay a tuition fee to study the Informatics programme. The number of admitted students of Lithuania has increased during the last 5 years [SER figure Nr. 3]. According to the SER [figure 4 paragraph 110 numbers] of foreign students has decreased from 2015 to 2016.

The study process and examinations are well organised. Students have the possibility to retake exams in cases of failure or non-attendance. The individual work of the students is sufficiently mentored. Students also have opportunities for independent learning through the virtual learning system MOODLE. Student attrition is about 41%, according to the SER [paragraph 113]. The main reason is personal choice with other reasons to include, poor academic performance, tuition fees, unsuccessful attempts to coordinate their studies and work commitments.

The students of the Study Programme are encouraged to participate in applied research activities: in practical science conferences, contests, prepare and read reports at conferences.

The Faculty encourages the students to embark on visits to foreign institutions through the organisation of contests and ERASMUS programmes, and in particular the Life Long Learning programme. However, as stated in the SER students of this study programme do not participate

in mobility programmes because the majority of them have jobs. The number of students has gradually decreased from 2014-2015 (13) to 2015-2016 (7) on the outgoing programme.

In terms of social matters and sports, KTU offers adequate psychological, health and cultural, career support (career centre). KTU has provided opportunities to get various scholarships, taken from the State and KTU funds. According to the SER, those students that achieve high levels of achievements in their study field could obtain a scholarship.

During the meetings with the students, they confirmed, that the assessment system of students' performance is clear, adequate and publicly available. The criteria for student assessment are announced at the beginning of the semester in the first lessons.

Overall, the organisation of the study process ensures an adequate provision of the programme and achievement of the learning outcomes.

The panel however **recommend** to promote mobility programmes and to encourage students to participate by talking about the benefits of these programmes, how they can help students' careers, how they can improve their learning and language skills and how the exposure to other societies and cultures can help them to develop social skills.

## ***2.6. Programme management***

Responsibility for decisions and monitoring of implementation of the programme are clearly allocated as set out in the SER. The Vice Rector has ultimate administrative and quality assurance oversight of programmes supported by the Studies Office including the Departments of Study Management, Study Quality Assurance and Development, Student Affairs and other administrative units. Senate holds ultimate responsibility for the approval or closure of programmes as advised by the Studies and Academic Culture Committee. Essential changes to a programme are confirmed by the University Study Programme Committee, and Studies Office in conjunction with approval by Faculty Council.

The University Study Programme Committee consists of no more than 9 members representing all the study fields and chaired by the Vice-Rector for Studies reviews the quality of existing programmes and overseas new programmes [Doc A507-UNIVERSITETINIO STUDIJŲ PROGRAMŲ KOMITETO NUOSTATAI].

In 2015 the university introduced the Faculty Fields Study Programme Committee (IF SPC), which were formally adopted in 2016. The IF SPC is coordinated by an elected Manager and comprises faculty members, social partners and students. The IF SPC is responsible for the content and quality of the programme and also of the process of annual review the structure and content of programmes as set out in the Regulations of the IF SPC [Doc KTUSC2015].

At the Faculty level the Council of the Faculty of Informatics, comprising 17 members of which 20% are students has responsibility for the approval of new programmes. Study subjects are certified by the Heads of Department with the IF SPC and its manager.

During the visit the Panel confirmed the organisation and nature of the deliberative committee structures and their composition [Meeting Senior Management, Staff responsible for SER]. The Panel was satisfied that the committee's work as expected and noted the adhoc nature of the field committee enables senior management to be responsive to day to day issues with no set agenda. The Vice Dean also produces a report that can be presented to the IF SPC however this does not happen on a systematic basis. It is therefore **recommended** that a report evaluating the programme, based on a standard template is produced for presentation to the field committee as part of a set agenda item.

Information and data on the implementation of the programme are regularly collected and analysed. For example, stakeholder feedback is collected mid semester, end of semester and after graduation from students, graduates, teachers and employers at the University level to evaluate study subjects, programmes teachers and aspects of academic life. The teaching staff, Alumni, Employers and Social Partners met all indicated that they do have some opportunities to feed into the programmes, with Alumni completing a survey. Similarly the students met confirmed they provide feedback though module reviews and mid-term questionnaires although were less clear if changes had been made in response to their feedback.

Round table feedback from students is also considered by Faculty Administration and members of the Study Programme Committee. The Senior Managers and students met during the evaluation visit confirmed these take place and changes in response to student feedback had taken place, for example materials were now place on Moodle.

The Academic Information System (AIS) on the University website is one of the main repositories for the collection and storing of feedback from students with access provided to teachers, IF SPC Managers and Faculty Administrators. The website was clearly accessible by staff however the students met gave mixed responses to their ability to access this form of

information. It is appreciated that this might not be the appropriate platform for students to see their feedback however the Panel would therefore suggest the programme leader consider introducing a formal “you said, we did” mechanism. (See also section on study process and study assessment)

The programmes undergo periodic certification, which can be from 1-3 yrs. The programme was evaluated in 2013 by the Higher Education Quality Assessment Centre, culminating in accreditation for three years. Improvements have been made based on the recommendations of that report to include a better working environment for the teaching staff (see previous section on staffing), modernisation of facilities (see previous section on facilities and learning resources) and the introduction of a single learning platform (see previous section on study process and student assessment).

Programme teams had benchmarked their programmes against other national Lithuanian institutions and ACM, however the team would **recommend** that greater use could have been made of international benchmarks.

A recommendation from the previous evaluation report for the programme requires the further engagement of teaching staffs in the decision making process [Annex 9.6]. The SER further notes that lecturers who are not part of the FSPC or Deans Office receive feedback though Departmental meetings. The staff met confirmed that if they had a new idea for a programme they would discuss with the Head of Department and suggestions for minor changes could be discussed at programme committee. Example of changes were given therefore the team were satisfied that staff were making a greater contribution to the decision making process.

The Panel heard of the involvement of companies for the confirmation of changes to a programme, providing new facilities and giving lectures, however would suggest greater use could be made of their views on curriculum content during design, re-design and the review processes.

Internal Quality Assurance oversight is governed by the KTU Quality Guide, which considers areas such as the management and administration, student support, infrastructure and human resources, research and applied activities monitoring, and analysis and improvement process. The Quality Guide further describes a University's quality assurance model based on the higher education quality assurance guidelines and regulations as well as their importance and appropriateness for the European Foundation for Quality Management Excellence Model (EFQM TM) criteria [Doc UQGR2014].



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

### ***2.6. Examples of excellence***

1. The equipment, hardware as well as software available for the students in the laboratories provide good support for learning and teaching.

### III. RECOMMENDATIONS

1. The Focus of the programme would be sharpened by having fewer learning outcomes and a somewhat more realistic set of objectives for certain modules as already highlighted above. In this context, it is essential that the students fully understand the concept of learning outcomes and their importance throughout the study process.
2. Adapt learning outcomes to the EQANIE requirements;
3. The teachers of the study programme should be made aware of alternative teaching and learning 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. The Faculty should also periodically verify that teachers do use the most effective teaching and learning strategies and approaches for their courses and that these activities are effectively aligned with the learning outcomes;
4. Consider reducing staff teaching load in order to free time for academic staff to pursue their Research and Development personal development and focus more on the quality of teaching and learning;
5. KTU should consider creating additional student workplaces in the Library to provide opportunities for student efficient work, especially during the exam period.
6. Better promotion of mobility opportunities amongst the students and to encourage students to share their experience and the benefits of these programmes;
7. International benchmarking should take place as part of the evaluation process;
8. Production of a regular report evaluating the programme, based on a standard template, should be produced for presentation to the review panel;
9. The Faculty should set up procedures to periodically and systematically assess the effectiveness of its study programmes, quality assurance processes and organisational structures and develop a strategic plan indicating when important milestones will be reached.

#### **IV. SUMMARY**

The Study Programme's aims and intended learning outcomes are well defined and suitable and adequate for the Bachelor's level study programme of Informatics. The programme's aims and Learning Outcomes are defined with respect to the public needs and those of the labour market. This is noted in particular with respect to the fact that quite a number of students of the programme go to industry even without pursuing a Master's Degree program. The panel nonetheless is suggesting some improvements and opportunities of development for the future.

The comments from the students, the teaching staff as well as the alumni and including the self-assessment report indicates that the degree objectives are achieved. For a number of other issues, for example, improvements of the work conditions for the teaching staff (with its many aspects), but also the promotion and support of international activities of the teaching staff, the goals have not been attained and definite efforts are encouraged in these directions. For most of the other items listed in the Recommendations section in 2013, steps have been undertaken, and improvements have been achieved (but also see the items mentioned before).

The study programme is provided by staff meeting the legal requirements, and their qualifications are adequate to ensure the achievement of the programme and courses intended learning outcomes. Overall, staff members of the programme are pedagogically equipped and scientifically competent, having a Ph.D. and degree in their own research field. The Panel also note (contrary to a remark in the 2013 report) that the gender issue has improved (but could so even more).

Learning facilities (in terms of type and quantity) are sufficient to achieve the learning outcomes of the Study Programme. The Panel feels that the study programme provides sufficient opportunities for practical work.

The organisation of the study process ensures an adequate provision of the programme and the achievement of the expected learning outcomes. The University ensures an adequate level of academic and social support. Students confirmed that they receive adequate and timely feedback on their assessments and examinations. A small number of students have taken advantage of the opportunity to study abroad within the ERASMUS programme. The Panel suggests to promote mobility programmes among students and to encourage students to share their experience and the benefits of these programmes.

## V. GENERAL ASSESSMENT

The study programme *Informatics* (state code – 612I10004) 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	3
3.	Teaching staff	3
4.	Facilities and learning resources	4
5.	Study process and students' performance assessment	3
6.	Programme management	3
	<b>Total:</b>	<b>19</b>

\*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