STUDIJŲ KOKYBĖS VERTINIMO CENTRAS
CENTRE FOR QUALITY ASSESSMENT IN HIGHER EDUCATION

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INFORMATICS FIELD OF STUDY

Vilnius University

EXTERNAL EVALUATION REPORT

Expert panel:

1. Panel chair: Prof. dr. Johann Gamper

2. Academic member: Prof. dr. Jyrki Nummenmaa

3. Academic member: Prof. dr. Vitalij Denisov

4. Social partner: Vilma Eidukynaitė

5. Student representative: Vytautas Kučinskas

SKVC coordinator: Aleksandras Kačanauskas

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Report language: English

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I. INTRODUCTION

1.1. OUTLINE OF THE EVALUATION PROCESS

The study field evaluations in Lithuanian higher education institutions (HEIs) are based on the following:

- Procedure for the External Evaluation and Accreditation of Studies, Evaluation Areas and Indicators, approved by the Minister of Education, Science, and Sport;
- Methodology of External Evaluation of Study Fields approved by the Director of the Centre for Quality Assessment in Higher Education (SKVC);
- Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG).

The evaluation is intended to support HEIs in continuous enhancement of their study process and to inform the public about the quality of programmes within the study field.

The object of the evaluation is all programmes within a specific field of study. A separate assessment is given for each study cycle.

The evaluation process consists of the following main steps: 1) self-evaluation and production of a self-evaluation report (SER) prepared by a HEI; 2) a site visit of the review panel to the HEI; 3) the external evaluation report (EER) prepared by the review panel 4) accreditation decision taken by SKVC and its publication; 4) follow-up activities.

The main outcome of the evaluation process is the EER prepared by the review panel. The HEI is forwarded the draft EER to report on any factual mistakes. The draft report is then subject to approval by the external Study Evaluation Committee operating under SKVC. Once approved the EER serves as the basis for an accreditation decision. If a HEI is not happy with the outcome of the evaluation, HEI can file an appeal.

On the basis of the approved EER, SKVC takes one of the following accreditation decisions:

- **Accreditation granted for 7 years** if all evaluation areas are evaluated as exceptional (5 points), very good (4 points), or good (3 points).
- **Accreditation granted for 3 years** if at least one evaluation area is evaluated as satisfactory (2 points).
- **Not accredited** if at least one evaluation area is evaluated as unsatisfactory (1 point).

1.2. REVIEW PANEL

The review panel was appointed in accordance with the Reviewer Selection Procedure as approved by the Director of SKVC.

The composition of the review panel was as follows:

1. Panel chair: Prof. dr. Johann Gamper
2. Academic member: Prof. dr. Jyrki Nummenmaa
3. Academic member: Prof. dr. Vitalij Denisov
4. Social partner: Vilma Eidukynaitė
5. Student representative: Vytautas Kučinskas

1.3. SITE VISIT

The site visit was organized on 14 May 2024 onsite.

Meetings with the following members of the staff and stakeholders took place during the site visit:

- Senior management and administrative staff of the faculty(ies)
- Team responsible for preparation of the SER
- Teaching staff
- Students
- Alumni and social stakeholders including employers.

There was no need for translation and the meetings were conducted in English.

1.4. BACKGROUND OF THE REVIEW

Overview of the HEI

The Vilnius University (VU) is the oldest and largest higher education institution in Lithuania and was founded in 1579. It operates as a state-owned public institution. The governance structure is specified in the Statute, stating that the self-governance of the University is exercised by the Senate, the Council, and the Rector according to their respective competences. In 2021, the Šiauliai University was incorporated as Šiauliai Academy (ŠA) into the VU. The ŠA is governed according to its own Statute. As of today, the University has a total of 15 Core Academic Units (11 faculties, 1 institute, 1 centre, 1 academy and 1 business school) and 12 core non-academic units, which all together implement the University's strategic plan, including study programmes and research activities.

Overview of the study field

The University offers study programs at all levels in the fields of humanities, social sciences, natural sciences, medicine, health and technology. More specifically, more than 90 Bachelor and integrated study programmes are offered, 110 Master and professional (pedagogical) programmes, as well as PhD programmes in almost 30 research fields. Additionally, resident students can choose from more than 60 residency study programmes. The study programmes in the field of Informatics are carried out at the Faculty of Mathematics and Informatics (MIF) and the Šiauliai Academy (ŠA). The main governing bodies for MIF are the Council and the Dean, while ŠA is governed by the Council and the Director.

The MIF has four institutes (Computer Science, Mathematics, Applied Mathematics, Data Science and Digital Technologies), a Cyber Security Laboratory, a Digital Science and Computing Centre, a Mathematical Education Centre, an Artificial Intelligence Laboratory, and the most powerful supercomputer in Lithuania, which is available for study and research. The main research areas related to the Informatics study field are computer modelling, combinatorics, formal modelling and verification of software systems, blockchain technologies, optimisation, cyber security, image and signal analysis. For several years, the faculty has developed measures to improve research, both in terms of quantity and quality.

The ŠA is divided into an Institute of Education and an Institute of Regional Development. The latter includes the study fields of Informatics, Mathematics, and Software Systems, which are relevant for this report. Additionally, ŠA has a Lifelong Learning Centre for retraining studies and a STEAM Open Access Centre.

The VU has 23,579 students and employs 2,604 teaching staff, 805 research staff, and 2,060 administrative staff. The MIF, which hosts the field of study, has a total of 2,228 students, 202 research and teaching staff (professors, researchers, teachers), and 69 administrative staff.

The number of students enrolled at ŠA is 1,557. The total number of administrative and academic staff employed by ŠA is 94 and 173, respectively. The academic staff is composed of 31 researchers and 142 teaching staff.

Previous external evaluations

The Informatics field of study was introduced at MIF in 1992, and underwent several modifications and extensions since then. The study programmes under evaluation were assessed positively in a previous accreditation process and were accredited for 3/6 years. The actions undertaken in response to the recommendations of this accreditation are reported in the SER.

Documents and information used in the review

The following documents and/or information have been requested / provided by the HEI before or during the site visit:

- *Self-evaluation report and its annexes*
- *Final theses*

Additional sources of information used by the review panel:

No additional sources of information have been used by the review panel.

II. STUDY PROGRAMMES IN THE FIELD

First cycle/LTQF 6

Title of the study programme	Bioinformatics	Information Technology	Informatics
State code	6121BX007	6121BX005	6121BX004
Type of study (college/university)	University studies	University studies	University studies
Mode of study (full time/part time) and nominal duration (in years)	Permanent	Permanent	Permanent
Workload in ECTS	240	210	240
Award (degree and/or professional qualification)	Bachelor of Computing	Bachelor of Computing	Bachelor of Computing
Language of instruction	Lithuanian / English	Lithuanian / English	Lithuanian / English
Admission requirements	Secondary education	Secondary education	Secondary education
First registration date	3 June 2005	24 April 2008	19 May 1997

Second cycle/LTQF 7

Title of the study programme	Informatics	Computer Modelling	Information Technology Management
State code	6211BX003	6211BX004	6211BX001
Type of study (college/university)	University studies	University studies	University studies
Mode of study (full time/part time) and nominal duration (in years)	Permanent	Permanent	Permanent
Workload in ECTS	120	90	90
Award (degree and/or professional qualification)	Master of Computing	Master of Computing	Master of Computing
Language of instruction	Lithuanian / English	Lithuanian / English	Lithuanian
Admission requirements	Bachelor's degree	Bachelor's degree	Bachelor's degree
First registration date	19 May 1997	14 June 2002	31 January 2017

III. ASSESSMENT IN POINTS BY CYCLE AND EVALUATION AREAS

The first cycle of the Informatics study field at the Vilnius University is given a **positive** evaluation.

No.	Evaluation Area	Evaluation points[1*]
1.	Study aims, learning outcomes and curriculum	3
2.	Links between scientific (or artistic) research and higher education	4
3.	Student admission and support	4
4.	Teaching and learning, student assessment and graduate employment	4
5.	Teaching staff	4
6.	Learning facilities and resources	5
7.	Quality assurance and public information	4
	Total:	28

The second cycle of the Informatics study field at the Vilnius University is given a **positive** evaluation.

No.	Evaluation Area	Evaluation points[2*]
1.	Study aims, learning outcomes and curriculum	3
2.	Links between scientific (or artistic) research and higher education	4
3.	Student admission and support	4

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[1]

1 (unsatisfactory) - the area does not meet the minimum requirements, there are substantial shortcomings that hinder the implementation of the programmes in the field.
2 (satisfactory) - the area meets the minimum requirements, but there are substantial shortcomings that need to be eliminated.
3 (good) - the area is being developed systematically, without any substantial shortcomings.
4 (very good) - the area is evaluated very well in the national context and internationally, without any shortcomings.
5 (exceptional) - the area is evaluated exceptionally well in the national context and internationally.
[2]

4.	Teaching and learning, student assessment and graduate employment	4
5.	Teaching staff	4
6.	Learning facilities and resources	5
7.	Quality assurance and public information	4
	Total:	28

III. STUDY FIELD ANALYSIS

AREA 1: STUDY AIMS, LEARNING OUTCOMES AND CURRICULUM

1.1.	Programmes are aligned with the country's economic and societal needs and the strategy of the HEI

FACTUAL SITUATION

1.1.1. Programme aims and learning outcomes are aligned with the needs of the society and/or the labour market

The aims and the expected learning outcomes of the study programmes under evaluation have been developed by considering the strategic objectives of Lithuania as well as the needs of the society and the labour market.

Informatics as the basis for technological development is one of the strategic priorities of Lithuania. This is expressed in various strategic documents, such as Lithuania's Progress Strategy Lithuania 2030 (with the aim at developing the country into an innovation hub for Northern Europe), the Smart Specialization Strategy 2021-2027 (which emphasise the importance of science, technology and innovation as a main pillar for economic competitiveness and social prosperity), and the Lithuanian Innovation Development Programme 2021-2030 (with the aim of a sustainable economy and increased international competitiveness based on scientific knowledge, advanced technologies, and innovation). More specific objectives targeting HEIs comprise the strengthening of human resources for the development of high-quality science, the generation of a high-quality scientific knowledge, the promotion of the cooperation between science and business, and the fostering of an entrepreneurial culture in research and study institutions.

There is a high demand for IT specialists in Lithuania, and more generally worldwide. According to the Lithuanian Digital Technology Association Infobalt, there is a shortage of 3,000 to 4,000 people in the country's IT sector every year. This need is confirmed by the fact that a large number of students start working before they finish their studies. A survey at MIF in 2021 revealed that 80% of first-cycle students in Informatics were employed during their studies.

In addition to the needs of the society and labour market, during the design and updating of the study programmes also best practices from prestigious foreign universities have been considered, as well as the guidelines specified in the ACM and IEEE Computing Curricula.

The need for graduates in the Informatics field emerged also during the meeting with the stakeholders. Companies hire VU graduates at all levels (BSc, MSc, PhD), and they particularly appreciate the solid and broad foundations and skills of the VU graduates. However, there was also the desire to have the possibility to provide more feedback about specific needs and skills required by the stakeholders, which could then be considered in the design and development of the study plans or individual courses.

1.1.2. Programme aims and learning outcomes are aligned with the HEI's mission, goals, and strategy

The aims and expected learning outcomes of the study programs are aligned with the mission of the VU, which, among others, strives to strengthen the cognitive and creative powers of Lithuania, to foster academic values, and to educate responsible citizens and leaders of the society. They are also in line with the VU Strategic Plan 2021-2025, which aims at focusing on the quality of studies, strengthening research activities, investing in the employees, and increasing public engagement and third mission activities.

All study programmes in informatics support the mission and goals of the VU specified in the Statute, such as implementing high quality study programmes at the highest international standards based on the unity of science and studies, upholding traditional academic values, and enabling students to acquire a universal education and to become responsible professionals.

The VU puts a strong emphasis on providing an education in an international and multicultural environment. This is implemented in the Informatics study programmes, for instance, by offering students the possibility to attend lectures taught by guest professors from foreign universities, delivering a number of subjects in English language at the Bachelor level, and an effort to attract strong international students at the Master level by delivering the whole study programmes in English.

In the context of strengthening research, the VU attempts to involve students in research activities as much as possible. This allows students to develop their skills as researchers and to form a solid basis for pursuing a higher level education at the PhD level.

ANALYSIS AND CONCLUSION (regarding 1.1.)

The aims and the expected learning outcomes of all study programmes under evaluation are in line with and support the strategic objectives of the Lithuanian country, the needs of the society and the labour market, and the vision and mission of the VU. There is a high demand for IT specialists in Lithuania, and these study programmes contribute to remedy this problem. The meeting with the stakeholders confirmed a high qualification of the VU graduates and revealed the desire for improving the feedback loop so that the needs and skills required in industry are better reflected in the design and update of the study programs.

1.2.	Programmes comply with legal requirements, while curriculum design, curriculum, teaching/learning and assessment methods enable students to achieve study aims and learning outcomes

FACTUAL SITUATION

1.2.1. Programmes comply with legal requirements

As far as the expert panel can judge, all study programmes under evaluation are fully compliant with and have been developed according to the legal framework, which comprises the Lithuanian Qualifications

Framework, the General Requirements for the Conduct of Studies, the Description of Study Cycles, the Order of the Minister of Education and Science of the Republic of Lithuania No. V-1995 approving the Description of the Group of Informatics Fields of Study, and the Description of the Procedure for Development, Execution and Improvement of Study Programmes of VU. Table 1 in the SER shows that all evaluated study programs meet the core formal requirements set by the law.

All study programmes are in line with the academic and professional requirements of the respective cycle in terms of aims, learning outcomes, structure, and content. They provide systematic, theoretical, practical, and research-based knowledge and skills according to the aims and objectives of the study programmes.

The mapping of ECTS to working hours is compliant with national and international standards. One year of full-time study corresponds to 60 credits, and one credit corresponds to a workload of 25-30 hours for the student.

1.2.2. Programme aims, learning outcomes, teaching/learning and assessment methods are aligned

The aims, learning outcomes, and teaching, learning and assessment methods of the study programmes are coherent and largely aligned (Annex 3 of the SER). This is ensured by a careful planning of the study plan and a regular yearly review by the study programme committee. However, we also noted significant differences in the granularity and the level of details in the description of some course units.

When preparing the course or module descriptions, the lecturers are guided by the aims, competences, and learning outcomes formulated in the programme description, which guarantees the achievement of the overall programme aims (see Annex 1 of the SER). The lecturer, in coordination with the study programme committee, can choose teaching and evaluation methods, which are appropriate to deliver the course content and to measure the student performance with respect to the specific learning outcomes.

The distribution of credits across the semesters is largely balanced as illustrated in detail in Table 2 of the SER. This guarantees an uniform distribution of the student workload across semesters and years.

The expert panel observed a lack of common principles regarding the learning outcomes granularity and the numbers allocated to a subject, resulting in some unbalances in the level of detail of course descriptions. For instance, in Annex 3 of the SER there are 3 learning outcomes for Mathematical Analysis 1 and 2 and more than 40 learning outcomes for General Biology.

1.2.3 Curriculum ensures consistent development of student competences

The content of the study subjects/modules and their scheduling in semesters ensures an incremental and coherent development of the students' competences, from the acquisition of basic and foundational knowledge and competences in the first semesters to the acquisition of specific competences and skills that are increasingly interconnected and application- or research-oriented in later semesters.

Students of first-cycle programmes gradually accumulate basic knowledge and related skills in the first six semesters, to deepen their knowledge and skills in a specific field through internships, special compulsory and elective subjects, and the preparation of a final thesis in the seventh and/or eighth semesters.

Starting from the first semester, second-cycle study programmes devote a significant amount of time to research work. The specific topic of interest can be freely chosen by the student in coordination with a

professor who serves as a tutor. Usually the chosen research topic remains the same over the semesters and culminates in the final thesis.

1.2.4 Opportunities for students to personalise curriculum according to their personal learning goals and intended learning outcomes are ensured

Students have various possibilities to personalise their studies. This includes an individual study plan, the participation in academic exchange programmes, the study of a variety of foreign languages, the choice of related studies, and a significant amount of credits (between 20% and 25% of the credits) that are allocated to individual studies and elective courses (Annex 2 and Table 2 in the SER). The faculty also has a procedure for the recognition of competences acquired by students through non-formal and informal learning. Finally, the internship and the final thesis provide additional opportunities to personalise the curriculum to the individual interests of the students.

1.2.5 Final theses (applied projects) comply with the requirements for the field and cycle

The preparation and defence of the final thesis follow a number of regulations, which define the requirements for the content of the thesis as well as information about the process of preparing and defending the thesis. Students are introduced to the requirements for the final thesis gradually, through independent work in previous semesters and through individual consultations once they have chosen a supervisor in the last year.

Students are free to choose a topic of their interest for the final thesis. The thesis can be written either in Lithuanian or in English.

Most first-cycle study programs require students to prepare coursework in the second half of their studies, which is then often extended towards a final BSc thesis. In some study programs the final thesis requires to develop a prototype and to upload its source code to a University site, which will then be considered during the final thesis defence.

Students of the second cycle programmes conduct a research study in the first semester, which is then gradually extended semester by semester to become a Master thesis. The methodological foundations for thesis preparation and solving practical scientific problems are taught in a first semester course, named "Research in Informatics". Additionally, research seminars are organized to teach students basic skills about conducting research, including paper writing, discussing and selecting topics, and how to raise issues and provide constructive feedback.

Throughout the thesis process, students are advised by their supervisor, who is a professor or researcher and monitors that the thesis meets the minimal requirements. Final theses typically involve practical applications and are evaluated based on the correct and creative use of theoretical knowledge.

Before the defence, final theses are uploaded to the Vilnius University Information System (VUSIS), which has an Electronic Plagiarism Identification System (EPAS), thus promoting academic integrity through formal means. The thesis is evaluated by a final thesis public defence committee, which is composed of researchers, academics, practitioners, and representatives of social partners from business, public institutions or other higher education institutions and universities. A list of final thesis titles is given in Annex 4 of the SER.

ANALYSIS AND CONCLUSION (regarding 1.2.)

The evaluated study programmes fully comply with national and University legal requirements. The content of the curricula and the teaching/learning/assessment methods are largely aligned and scheduled in a way to guarantee for students a coherent and gradual acquisition of competences in order to achieve the study aims and learning outcomes. However, there are significant variations in the level of detail of some course descriptions. Students have various opportunities to personalise their curriculum to their individual needs. The content, preparation, and evaluation of the final thesis is in line with the requirements for the field and cycle.

AREA 1: CONCLUSIONS

AREA 1	Negative - 1 Does not meet the requirements	Satisfactory - 2 Meets the requirements, but there are substantial shortcomings to be eliminated	Good - 3 Meets the requirements, but there are shortcomings to be eliminated	Very good - 4 Very well nationally and internationally without any shortcomings	Exceptional - 5 Exceptionally well nationally and internationally without any shortcomings
First cycle			3		
Second cycle			3		

RECOMMENDATIONS

To address shortcomings

1. There should be an agreement on common principles and a unified method/pattern on the granularity of the learning outcomes and the number of learning outcomes allocated to a subject, considering also the number of credits. These principles should be applied in the curricula design in order to avoid that some competences/course units are very detailed and others are very short. For instance, in Annex 3 of the SER there are 3 LO for Mathematical Analysis 1 and 2 and more than 40 LO for General Biology.
2. The study programme committee should systematically collect input about the competences and skills required by the stakeholders and discuss the study programme with them. This could, for instance, be done by organizing an annual meeting with the stakeholders, in which the current study programs are presented and feedback is collected.

For further improvement

1. The expert panel found no good reason for BSc and MSc study programmes of different size/lengths in terms of ECTS and years. While such differences are compatible with the legal framework, the MIF should consider to harmonise the study programmes towards a 3 + 2 model as in most other countries. This might not only simplify the administration of the study programmes, but would also facilitate the international student exchange.
2. There seem to be some overlaps in the following study programs: BA in Information Technology and BA in Informatics, as well as MA in Informatics and MA in Computer Modelling. It is recommended

to sharpen the respective profile to achieve a better distinction of the curricula or to merge these study programs, thereby saving resources which could be invested in improving the quality.

3. Unified method should be provided (pattern) for defining and numbering competencies for all study programmes in the informatics field (See Annex 1).

AREA 2: LINKS BETWEEN SCIENTIFIC (OR ARTISTIC) RESEARCH AND HIGHER EDUCATION

2.1.	Higher education integrates the latest developments in scientific (or artistic) research and technology and enables students to develop skills for scientific (or artistic) research

FACTUAL SITUATION

2.1.1. Research within the field of study is at a sufficient level

In 2017 Lithuania introduced a research evaluation system carried out by the Research Council of Lithuania. Over the past three years, the score of the VU in this annual research evaluation is constantly increasing with a significant increase in 2021. In addition, in an international research evaluation in 2022, the VU got as the only University in Lithuania a score of 4 points in Informatics. These results show the scientific potential of the VU in general, and in the Informatics study field in particular.

To strengthen quantity and quality in research, the VU MIF developed an action plan 2022-2024, which fosters the development of high-quality international research and tries to engage the academic staff in various scientific activities and networks, such as national and international research projects (e.g., EU HORIZON), collaborations with prestigious research centres (e.g., CERN), the organisation of national and international conferences (e.g., ICCTSAI 2021, ALTA 2021), and the organisation of regular scientific seminars. In terms of research output and publications, Table 4 in the SER shows a constant increase in the number of high ranked publications from 2020 to 2022.

2.1.2. Curriculum is linked to the latest developments in science, art, and technology

Lecturers are encouraged to include latest research results and references to relevant literature into their courses. The relevance and novelty of the research material incorporated into a course content is evaluated by the study programme committee, either at the stage of approving a new course/module or if it is updated by the lecturer.

The integration of new research results into the study plan and individual courses happens in different ways. Many subjects/modules are taught by professors and researchers who are active in research and try to integrate their own results as well as other state-of-the-art research results into their teaching activities. For instance, the content of some courses is heavily based on state-of-the-art research papers; in other courses a literature review of scientific publications on a specific topic is required; and the formulation of Master's thesis topics is often driven by an analysis of scientific papers.

Second cycle students are particularly exposed to and involved in research activites through various courses and the final thesis. The subjects and courses are more related to basic and applied science, and the students must demonstrate their ability to apply fundamental knowledge in practice, often also in interdisciplinary projects between the field of computer science and other sectors such as medicine. The list of final thesis projects provided in Annex 4 of the SER and the list of final thesis topics 2024 received from Siauliai Academy before the site visit reflect the topics in which professors and researchers are particularly active.

2.1.3. Opportunities for students to engage in research are consistent with the cycle

Students are engaged in research activities in various ways. For instance, students are required to carry out a thorough literature review on a specific topic in their coursework or final thesis, which ensures that they are up-to-date with the latest scientific developments in that area. Professors and researchers also try to actively involve students in running research projects. Thereby, students not only learn about the state of the art techniques in a specific area, but they are also involved in exploring and developing new techniques and methods that advance the state of the art as well as in describing research results in scientific papers. The SER lists five scientific articles in international outlets, where students contributed and appeared as co-authors.

ANALYSIS AND CONCLUSION (regarding 2.1.)

The expert panel observed an increasing sensitivity towards the importance of research as well as an increasing research performance over the past few years, which is evidenced by an increasing number of publications, research projects, and international collaborations. The VU MIF has several measures in place to systematically integrate research results into the study plan and course content, which is controlled by the study committee. Similarly, students are encouraged and have various possibilities to be engaged in research activities and to develop skills for scientific research.

AREA 2: CONCLUSIONS

AREA 1	Negative - 1 Does not meet the requirements	Satisfactory - 2 Meets the requirements, but there are substantial shortcomings to be eliminated	Good - 3 Meets the requirements, but there are shortcomings to be eliminated	Very good - 4 Very well nationally and internationally without any shortcomings	Exceptional - 5 Exceptionally well nationally and internationally without any shortcomings
First cycle				4	
Second cycle				4	

COMMENDATIONS

1. There is a clear improvement in the research performance from 2020 to 2022.

RECOMMENDATIONS

For further improvement

1. While research quantity and quality are increasing, the expert panel got the impression that this is due to the contribution of a few professors only. The panel advises the VU MIF to continue with the specification of an action plan for research and to engage step-by-step more professors and research units in order to make this development scalable and sustainable.
2. There are still several research activities and outputs that are mainly oriented towards a local target, e.g., journals edited by and conferences organised by the VU. While this is certainly helpful in an initial phase, for a medium to long-term positioning of the VU at the European level it is essential to

aim for international benchmarks and publish in internationally recognized top-level conferences and journals that are indexed in Scopus and/or Web of Science.

3. The MIF action plan for research should also be rolled out to the VU ŠA.
4. To further improve the research activities and output, investing in a strong PhD programme, potentially with an international participation, might be worthwhile.

AREA 3: STUDENT ADMISSION AND SUPPORT

3.1. Student selection and admission is in line with the learning outcomes

FACTUAL SITUATION

3.1.1. Student selection and admission criteria and procedures are adequate and transparent

The admission system for the bachelor studies is based on the standard Lithuanian admission system, which is in accordance with the LAMABPO guidelines. Detailed regulations are established by the VU Senate and are accessible to the public. The program is open to individuals who have completed secondary education. In the field of Informatics, the matriculation examination with the highest coefficient is mathematics, with a coefficient of 0.4. The second most important examination is Lithuanian language (0.2), which is also mandatory. The remaining examinations have a greater degree of flexibility in their choice of subjects.

The admission scores to the bachelor studies are in line with national requirements and the rules adopted by the University.

Admission to Informatics study programs at the master's level is available to individuals who have completed first-cycle studies in Informatics or have earned a Bachelor's degree in another subject area. The competition score is determined by a formula that combines the average marks from the Diploma Supplement with the grade from the Bachelor's thesis or final examinations. The regulations have been approved by the Senate, which affords the University greater latitude to implement its own procedures.

Drop-out rates were not commented on in the section on student enrolment.

3.1.2. Recognition of foreign qualifications, periods of study, and prior learning (established provisions and procedures)

VU recognizes education and qualifications from foreign countries and international organizations based on the national system, as authorised by the Minister of Education and Science of the Republic of Lithuania.

In the past three academic years, most individual study plans in Informatics have been created to substitute subjects, switch to a related program, or credit partial study outcomes, with no cases of non-recognition. Despite a decline in enrollments due to global issues like the pandemic and the war in Ukraine, part-time study popularity is expected to rise. Students receive guidance for part-time study abroad, ensuring credit through trilateral agreements. Transfers, program changes, and study resumptions are managed with individual credit plans. Second-cycle students often extend their studies due to work or heavy workloads.

ANALYSIS AND CONCLUSION (regarding 3.1.)

The admissions system of Vilnius University, as well as the system for recognizing foreign qualifications and other prior learning outcomes, appear to function effectively and meet the needs of students at both the institutional level and within the context of the field of study of Informatics.

3.2. There is an effective student support system enabling students to maximise their learning progress

FACTUAL SITUATION

3.2.1. Opportunities for student academic mobility are ensured

The International Relations Office of the University manages study abroad and international cooperation processes at the University. At the Faculty of Mathematics and Informatics, these responsibilities fall to the International Studies Coordinator and the Vice-Dean for Academic Affairs.

Students who intend to study abroad part-time must have completed at least one first-cycle course or one semester of the second cycle before their planned study abroad begins.

MIF has 97 Erasmus and other agreements with foreign universities in the field of Informatics. During the review period, 54 students from the study programs in this field participated in the Erasmus+ exchange program for partial studies.

However, according to the data provided in the report, the number of outgoing students is comparatively low compared to the number of incoming students. For the academic year 2022-2023, there were 10 outgoing students (7 in the first cycle and 3 in the second cycle) compared to 75 incoming students (60 in the first cycle and 15 in the second cycle).

3.2.2. Academic, financial, social, psychological, and personal support provided to students is relevant, adequate, and effective

All students, regardless of their field of study, have access to various support services: academic information and counselling, career and mentoring services, IT services, library services, financial aid, accommodation, cultural, sports, and leisure activities, student involvement opportunities, psychological services, academic pastoral care, support for students with special needs, and integration assistance at the start of their studies.

Between the 2019 and 2023 academic years, Informatics students received 556 incentive scholarships, 41 social scholarships, 10 community support payments, and 61 one-time targeted payments.

Furthermore, nominal scholarships may be awarded to students pursuing this field of study. For instance, during the 2021-2023 academic years three scholarships of the Jonas Kubilius Nominal Scholarship, established in 2014 by VU MIF and the VU MIF ALUMNI, were awarded to Informatics students. The Academician Vytautas Statulevičius Nominal Scholarship, that recognizes students for their academic excellence, research capabilities, and involvement in scientific work, was awarded in 2021, and two were awarded in 2022.

3.2.3. Higher education information and student counselling are sufficient

Students who are admitted to the field of study are initially introduced to their study programs through freshmen camps organized by VUSR.

As part of an Integration week, VU MIF arranges a "home day" at the buildings located at 47 Didlaukio Street and 24 Naugarduko Street. During this event, students are introduced to the study and research resources available, including the supercomputer, which has garnered significant student interest, and the library.

Comprehensive information regarding the study process including the study calendar, lecture and exam schedules, options, evaluation procedures, retake policies, partial studies abroad, study fees, scholarships, and study financing is provided to students through various channels at VU units. This includes the Study Departments, meetings with the Vice-Dean of Academic Affairs (MIF) or the Deputy Director of Studies (ŠA), heads of study program committees, and academic advisors. Regular updates are posted on the units' websites, Facebook and Instagram accounts, and distributed via email. Additionally, students receive information about the study process through VUSIS.

During the pandemic, the MIF administration began utilising the VLE environment to manage research papers, final theses, and professional internship processes, and to communicate with students and lecturers. It also allowed MIF to become one of the first faculties at VU to completely transition away from collecting printed versions of research papers, fulfilling a long-standing student request.

ANALYSIS AND CONCLUSION (regarding 3.2.)

In all three areas evaluated, the situation at Vilnius University appears to be appropriate and beneficial to students, both in terms of the University's general situation and the field of informatics studies. However, it would be beneficial to pay closer attention to the balance of outgoing and incoming students. To address this imbalance, the University should focus on creating more opportunities and incentives for outgoing exchanges to ensure a more equitable exchange experience for all students. Additionally, continued assessment of the effectiveness of student support services and their responsiveness to evolving student needs will be crucial for maintaining and enhancing the overall quality of the student experience.

AREA 3: CONCLUSIONS

AREA 1	Negative - 1 Does not meet the requirements	Satisfactory - 2 Meets the requirements, but there are substantial shortcomings to be eliminated	Good - 3 Meets the requirements, but there are shortcomings to be eliminated	Very good - 4 Very well nationally and internationally without any shortcomings	Exceptional - 5 Exceptionally well nationally and internationally without any shortcomings
First cycle				4	
Second cycle				4	

COMMENDATIONS

1. In all areas assessed, Vilnius University stands out for its strong focus on these issues. This undoubtedly influences the fact that the system established at the institutional level has a positive effect at the faculty level.

RECOMMENDATIONS

1. Closer attention should be paid to the balance of outgoing and incoming students. The University should develop a strategy to not only attract a greater number of high-level international students but also to encourage more students to participate in outbound exchange programs.

AREA 4: TEACHING AND LEARNING, STUDENT ASSESSMENT, AND GRADUATE EMPLOYMENT

4.1. Students are prepared for independent professional activity

FACTUAL SITUATION

4.1.1. Teaching and learning address the needs of students and enable them to achieve intended learning outcomes

At the University, studies are carried out in accordance with the descriptions of the study programmes and study subjects (modules). The target competences and learning outcomes are focused not only on the acquisition of subject knowledge, but also on the development of the general competences needed for further studies, self-directed learning and the modern labour market, and for a successful independent professional career. Social partners, employers and graduates are actively and consistently involved in their formulation.

The studies in this field have a permanent form. The main modes of study and teaching (learning) methods are contact ones (lectures, seminars, consultations) and non-contact ones (independent study of literature, writing essays, development of application systems, specific assignments by lecturers, etc.). As mentioned in the SER, some 80 different study methods are used to teach the subjects of the Informatics field of study programmes.

Since the introduction of quarantine in Lithuania in the spring semester of 2019- 2020, distance learning (lectures, seminars, evaluation, consultations, etc.) has been used in response to the COVID-19 global pandemic. Virtual teaching (learning) methods, which are an effective complement to classroom and self-directed work, have certainly survived and are used in some cases.

Feedback on student performance is provided throughout the course of learning to ensure consistent and deep student learning that enables them to make maximum progress in the subject/module and, at the same time, helps to bring out their personality and talent.

The study methods specified by the SER in the teaching process meet academic and professional standards.

4.1.2. Access to higher education for socially vulnerable groups and students with individual needs is ensured.

The SER report states that the study process is adapted to socially vulnerable groups and students with special needs. The Diversity and Equal Opportunities Strategy, adopted on February 18, 2020, outlines the University's commitments until 2025. This strategy aims to enhance accessibility by investing in the University environment, providing compensatory technology, advising on accessibility issues, and offering individualised study plans. Vilnius University adopted the Open University for Persons with Disabilities strategy back in 2017, which is a university-wide, long-term commitment to systematically work towards equal opportunities for persons with disabilities.

Central to these efforts is the Community Welfare Unit, which employs a Disability Coordinator. This coordinator is tasked with analysing and monitoring the needs of students with disabilities, which include mental health conditions, autism spectrum disorders, attention and learning disorders, and temporary health

issues. The coordinator is responsible for organising and coordinating appropriate study and working conditions to ensure the inclusion of these students in the University community.

The individualization of studies is governed by the Procedure for Individualisation of Studies According to Individual Needs Arising from Disability. Students can submit relevant documentation and specialist recommendations to the Disability Coordinator, who assesses their needs and makes recommendations for adapting the study process. Based on these recommendations, a designated staff member within the unit drafts and implements an individualization plan.

Financial support mechanisms are in place for other socially vulnerable groups. These include one-off social grants for emergencies such as the death of a relative, natural disasters, illness, and VU nominal scholarships for students from economically disadvantaged families. A comprehensive range of services, including psychological counselling and spiritual support, is also available.

Gender equality is another significant focus, as evidenced by the Gender Equality Plan 2021-2025. This plan has led to the establishment of a network of gender equality coordinators, responsible for developing anti-discrimination policies and practices, monitoring equality in study processes and working conditions, and advising on equality and diversity matters.

The University accommodates students who are temporarily unable to continue their studies due to significant reasons, such as illness. These students may be allowed to suspend their studies for up to one year or be granted an academic leave of absence due to personal reasons, sickness, pregnancy, or childcare.

The University has demonstrated flexibility in response to specific political and humanitarian crises. For example, Belarusian students persecuted for civil and political reasons have been given opportunities to transfer to VU and continue their studies. Following the outbreak of the war in Ukraine, the University has admitted Ukrainian students for free and recruited lecturers from the country.

During the reporting period, students with severe visual impairment, hearing impairments, paraplegics and quadriplegics, speech disorders, and socio-psychiatric disorders and their diversity were enrolled in computer science. The University has identified the problems faced by students with disabilities and the teachers who teach them, although not all of them can be solved. Seminars and conferences are regularly organised to raise awareness of the University community about disabled students and their integration. These events focus on different disabilities, such as hearing impairment, psychosocial disabilities and autism, and discuss the challenges and solutions to higher education.

ANALYSIS AND CONCLUSION (regarding 4.1.)

The study methods described in the SER that are applied in the teaching process meet the required academic and professional standards. A variety of interactive, inclusive, active and technology-based traditional, distance and blended learning methods are used taking into account the individual and different needs of students and enabling them to achieve the intended learning outcomes. The cumulative score evaluation system ensures the implementation of the principle of transparency and motivates students to study all the time.

The study process at Vilnius University is inclusive, providing tailored support for socially vulnerable groups and students with special needs through strategies like the Diversity and Equal Opportunities Strategy and the Open University for Persons with Disabilities strategy. This includes investment in the university

environment, compensatory technology, individualised study plans, and financial support mechanisms. The University employs a Disability Coordinator within the Community Welfare Unit to address the needs of students with disabilities, ensuring appropriate study and working conditions.

4.2.	There is an effective and transparent system for student assessment, progress monitoring, and assuring academic integrity

FACTUAL SITUATION

4.2.1. Monitoring of learning progress and feedback to students to promote self-assessment and learning progress planning is systematic

As mentioned in the SER, the University monitors the progress of students in the field of study at several levels – subject (module), course, and study programme.

At subject/module level, student progress is assessed by the subject/module lecturer(s). In cumulative assessment of a subject (module), the lecturer provides feedback on the assignments completed, assesses the student's progress, and gives advice on what to look out for. Lecturers use the VLE Moodle system (emokymai.vu.lt) to organise and to evaluate the study process. The overleaf.com platform is used to monitor the progress of students' research work and cooperation with the Supervisor, which helps both the lecturer and the supervisor to view, comment, and version the template and content of the theses.

The monitoring of students' progress at course level is carried out by the Study Administration Unit.
The Student Services and Career Unit monitors student attrition and implements the action plan to prevent it. This plan provides for the monitoring of student achievement as required.

At the level of the field of study programme, the progress of students is monitored by the study programme committee. Once per academic year, the SPC: evaluates the progress made by students during their professional internship, by gathering feedback from the institutions where their students have taken professional internship; evaluates the results of the graduation thesis defence and the proportion of students who have defended their thesis on time (and improves the process of preparing and defending the thesis in the light of its findings); assesses the distribution of the final achievement results in the subjects/modules included in the study plan; determines the level of students' underachievement in the subjects/modules of study; and assesses the number of students enrolled in the study programme and the number of students who have been suspended or withdrawn from the study programme and the reasons for this.

The aim is to provide continuous and effective feedback to students throughout their studies. Student progress is assessed by the lecturer of the specific study subject (module). The assessment is based on the cumulative grade system: the cumulative grade of intermediary and final assessments (exam or thesis/project defence). Lecturers provide feedback on the student achievement using various ways, which are closely linked to the structure of the subject (lectures, workshops, seminars, and laboratory work), the assessment strategy (structure of the final assessment) and the types of self-directed work assignments. Students are given the opportunity to see the corrected and assessed work and, if the feedback already given was not sufficient, to make further enquiries about the assessment. At the programme level, the student representative attends the SPC meetings and is informed about the results of the evaluation of the programme subjects and the development of the programme.

The SER states that based on student surveys and market needs, the study programme is updated and improved by revising the scope and content of study subjects (modules), assessing the possibility of adding new modules to the study programme, and sharing information about the ongoing changes with the students through the student representative in the SPC. During the onsite visit, the students mentioned that not all professors/teachers consider the feedback.

4.2.2. Graduate employability and career are monitored

Career monitoring of graduates is carried out using the tools available in the Career Management Information System (KMIS) karjera.lt. Two types of indicators are used to monitor careers: objective indicators of state information systems, state or departmental registers and subjective sociological survey indicators.

The system currently interfaces with the student register, population register and national insurance fund SoDra. Objective indicators on graduates' careers are obtained from public information systems, national or departmental registers for five years after graduation and are updated twice a year. Subjective indicators are collected three times, by surveying graduates one, three and five years after graduation.

According to the data of ŠVIS, in Lithuania one year after graduation the number of VU Informatics graduates who were employed in the main groups of the LPK or started working independently was: 81% of graduates of the first cycle graduating in 2020; 88% in 2021; 68% in 2022; 71% of graduates of the second cycle graduating in 2020; 79% in 2021; and 80% in 2022.

The meeting with the stakeholders confirmed that 60-70% of 1st and 2nd year students are already working. Companies hire VU graduates at all levels (BSc, MSc, PhD), and they particularly appreciate the solid and broad foundations and skills of the VU graduates. If students need specific knowledge, this is quickly acquired thanks to a solid foundation.

In the meeting with alumni and employers during the onsite visit, it was confirmed that computer science graduates from the VU are highly valued.

4.2.3. Policies to ensure academic integrity, tolerance, and non-discrimination are implemented

While maintaining a wide range of viewpoints, receptiveness to new concepts, mutual regard, confidence, tolerance, independence, and responsibility to the state and society within the academic community, the University grounds its operations and interactions among community members on the principles outlined in the Statute of Vilnius University, the Vilnius University Code of Academic Ethics, the Vilnius University Diversity and Equal Opportunities Strategy, and other documents.

Vilnius University lecturers and students are obliged to follow the Vilnius University Code of Academic Ethics, which defines the general norms of academic, teaching, study and research ethics. The VU Regulations of Studies stipulate that students who violate academic ethics may be reprimanded and expelled from the University.

Cases of violation of the principles of academic integrity, tolerance and non-discrimination are dealt with at the University in accordance with the Regulations of the Central Academic Ethics Committee of Vilnius University and the Regulations of the Academic Ethics Committee of the Core Academic Unit of Vilnius University, as well as with the Regulations of the Central Disputes Committee of Vilnius University and the Regulations of the Disputes Committee of the Core Academic Unit of Vilnius University.

The VU has a dedicated helpline where any member of the community can report violations of the principles of academic ethics, tolerance and non-discrimination. These referrals are confidential, and the applicant receives prompt support from a dedicated team of psychologists and lawyers.

VU has implemented the Electronic Match Recognition System (EMRS) for final theses and written work, which allows checking for matches of a particular author's work with the works in the database.

4.2.4. Procedures for submitting and processing appeals and complaints are effective

The procedure for appeals is defined in the Regulations of the Disputes Committee of the Core Academic Unit. Those who disagree with the examination procedure or scores may appeal in writing to the CAU Board of Appeals within five working days of the announcement of the scores. The decision of the Board of Appeals on the assessment is final, while the decision on the examination procedure can be appealed to the VU Disputes Committee.

The Disputes Committee normally deals with complaints relating to the assessment of a student's progress. This means that in most cases, students complain about the grade they have received on the basis of procedural irregularities. Special boards are set up to retake the assignment in case of assessment or procedural irregularities.

ANALYSIS AND CONCLUSION (regarding 4.2.)

Graduate employment and career monitoring at Vilnius University utilises both objective data from state information systems and subjective data from sociological surveys conducted one, three, and five years post-graduation. These comprehensive approaches ensure a detailed understanding of graduates' employability, workplace success, and overall career satisfaction.

Vilnius University operates on principles of academic ethics, diversity, and equal opportunities as outlined in its official documents. Violations of academic integrity, tolerance, and non-discrimination are handled through designated committees, with possible repercussions including reprimands and expulsion. The University also provides a confidential helpline for reporting ethical breaches and uses the Electronic Match Recognition System (EMRS) to check final theses and written work for plagiarism.

There were no cases of dishonest student practices or appeals in the field of Informatics during the period under review, which indicates an adequate policy of monitoring and compliance with these principles.

AREA 4: CONCLUSIONS

AREA 1	Negative - 1 Does not meet the requirements	Satisfactory - 2 Meets the requirements, but there are substantial shortcomings to be eliminated	Good - 3 Meets the requirements, but there are shortcomings to be eliminated	Very good - 4 Very well nationally and internationally without any shortcomings	Exceptional - 5 Exceptionally well nationally and internationally without any shortcomings
First cycle				4	
Second cycle				4	

COMMENDATIONS

1. The VU grounds its operations and interactions among community members on the principles outlined in the Statute of Vilnius University, the Vilnius University Code of Academic Ethics, the Vilnius University Diversity and Equal Opportunities Strategy and other documents. It makes the study process transparent, fair, objective and reliable.

RECOMMENDATIONS

For further improvement

1. The VU should implement a comprehensive policy for the use of AI tools for teaching purposes, which is not yet in place.
2. It is suggested to improve the feedback system of the teacher evaluation by the students in order to guarantee a transparent dissemination of the results. Also, measures should be defined to guarantee that professors and teachers use the results to improve their teaching performance.
3. It seems that many optional courses are announced in the study plan, but then only a few of them are activated every year; too few according to the students. Think about activating more courses or providing a clear communication to the students.

AREA 5: TEACHING STAFF

5.1. Teaching staff is adequate to achieve learning outcomes

FACTUAL SITUATION

5.1.1. The number, qualification, and competence (scientific, didactic, professional) of teaching staff meets the requirements and is sufficient to achieve learning outcomes.

The teaching staff is recruited in a competitive manner, and they are also certified, with certification carried out every five years to determine whether the qualifications of research and teaching staff are appropriate for their posts. Assessment is based on the number of scientific articles they have published, participation in conferences, research supervision, lecturing, preparation of methodological materials, participation in doctoral studies, supervision of students' research work, and their expert, organizational, and other research activities, that is, the assessment has a very wide basis. There are also visiting teachers, and they have to fulfil appropriate requirements.

The teaching staff to students ratio is reasonable, with figures ranging from 1:7 to 1:8 for the first cycle, and 1:1 to 1:2 for the second cycle. There has been some turnover of the staff, primarily due to retirements but also for other reasons.

Judging also from the employers' point of view, they were very happy with graduates, which obviously implies that the situation is also good with the teaching staff. The students did not have complaints or negative statements on the staff.

ANALYSIS AND CONCLUSION (regarding 5.1.)

The situation is good overall. There are quality measures and certification for the staff, and the teaching staff to students ratio is good, in particular in the second cycle. The site visit also gave a good impression on the situation with the teaching staff.

5.2. Teaching staff is ensured opportunities to develop competences, and they are periodically evaluated

FACTUAL SITUATION

5.2.1. Opportunities for mobility of teaching staff are ensured.

Academic exchanges take place through ERASMUS+, NORDPLIUS, ISEP and bilateral agreements are among There are earmarked funds and organisational support for the exchange. A fair number of teaching visits (23) and learning visits (13) were done in the years 2022-2023.

5.2.2. Opportunities for the development of the teaching staff are also ensured.

Scientific research achievements are appropriately rewarded. While the overall situation is satisfactory, It seems that there is not big pressure to participate in research or mobility, this is more on the reward basis,

which may leave some teachers outside of the development, while of course the ones who take the opportunities do have an effect on the rest.

Some staff members have a relatively high research activity, but there are in particular lecturers who do not seem to be active in research. The students were generally happy about the teaching staff. Meeting with the teaching staff gave a positive signal of the teaching staff - they apparently very well follow the developments e.g. with AI systems and large language models, where the attitude of the staff seemed very appropriate.

ANALYSIS AND CONCLUSION (regarding 5.2)

The staff overall gave a good impression. The means for staff development exist and are being used. The VU is quite successful in research, however there are teachers (lecturers) that do not seem to be active in research.

AREA 5: CONCLUSIONS

AREA 1	Negative - 1 Does not meet the requirements	Satisfactory - 2 Meets the requirements, but there are substantial shortcomings to be eliminated	Good - 3 Meets the requirements, but there are shortcomings to be eliminated	Very good - 4 Very well nationally and internationally without any shortcomings	Exceptional - 5 Exceptionally well nationally and internationally without any shortcomings
First cycle				4	
Second cycle				4	

COMMENDATIONS

1. VU supports research activities in general, and Vilnius University is doing well in international comparisons.
2. VU gives possibilities for professional development and exchange.

RECOMMENDATIONS

For further improvement

1. It should be monitored that all teaching staff participate, if possible, in visits, exchange and professional development.
2. There should be ways to activate the more passive staff members to do research. This could be done, e.g., by fostering collaboration with other researchers or research groups.

AREA 6: LEARNING FACILITIES AND RESOURCES

6.1.	Facilities, informational and financial resources are sufficient and enable achieving learning outcomes

FACTUAL SITUATION

6.1.1. Facilities, informational and financial resources are adequate and sufficient for an effective learning process.

The faculty is dispersed into several sites, all accessible by public transportation. The teaching rooms are well equipped. There is a rather big investment project "Modernisation of the infrastructure of Educational Sciences and Social Welfare Studies" at VU Šiauliai Academy. Notably the expert group did not visit Šiauliai. The building where the expert team visited is rather old, however it was well equipped. The students had a working area with 24/7 access. The students with special needs are also taken into account.

All buildings have wireless internet access for students and staff of the University. The students can work with Linux and Windows operating systems, with a good selection of software. Better yet, students and academic staff can also use the faculty supercomputer free of charge, with 500 CPU hours and 60 GPU hours per month. If the default resources are not enough, one can apply for more.

The important electronic libraries and databases are available. They are available through Vilnius University VPN system also from home.

On the site visit, the students were happy with the situation and the staff who maintained the system appeared very competent, and, overall the situation looked very good.

6.1.2. There is continuous planning for and upgrading of resources.

There is an annual process for improving the resources. The faculty allocates annually a budget for equipment and software updates. As an example of recent development, the faculty upgraded its supercomputer infrastructure at a cost of around €2.5 million. Scientific databases naturally make up a large part of that money, exceeding €1 million in 2022.

ANALYSIS AND CONCLUSION (regarding 6.1.)

The electronic and computational resources are really good and the way the servers and computers are maintained and kept up to date seems to be excellent. The resources are very good overall and there is a process to maintain them up to date. The site visit gave a very good impression.

AREA 6: CONCLUSIONS

AREA 1	Negative - 1	Satisfactory - 2	Good - 3	Very good - 4	Exceptional - 5
	Does not meet the requirements	Meets the requirements, but there are substantial	Meets the requirements, but there are	Very well nationally and internationally	Exceptionally well nationally and internationally

		shortcomings to be eliminated	shortcomings to be eliminated	without any shortcomings	without any shortcomings
First cycle					5
Second cycle					5

COMMENDATIONS

1. The computational resources were really good and the way the servers and computers are maintained and kept up to date seemed to be excellent. There is a good selection of electronics and databases.

RECOMMENDATIONS

For further improvement

1. It would be an improvement to get the faculty premises on the same campus, close to each other.

AREA 7: QUALITY ASSURANCE AND PUBLIC INFORMATION

7.1.	The development of the field of study is based on an internal quality assurance system involving all stakeholders and continuous monitoring, transparency and public information

FACTUAL SITUATION

7.1.1. Internal quality assurance system for the programmes is effective

The internal quality management system for studies at Vilnius University is implemented in accordance with the European Framework for Quality Assurance in Higher Education and carries out a wide range of different internal processes and quality assurance procedures, from the development and approval of the curriculum to monitoring and analysis of feedback, evaluation and continuous improvement of the quality of studies.

The primary responsibility for ensuring the quality and continuous improvement of computer science study programs rests with study programme committees (SPK). The SPC ensures that the program's objectives and content are up to date and monitors its implementation. To do this, the committee analyses feedback from faculty departments, students, alumni, lecturers and social partners, discusses concerns, problems and opportunities for improvement with both the faculty management and program teachers.

The promotion of teaching and research positions and the allocation of material resources for programs is a shared responsibility of the SPC with other governing bodies of the Faculty of Mathematics and Informatics, including College of Studies, Institutes, Dean's office, and Faculty Council. Since the Faculty (CAU) currently runs 6 informatics programs, all proposed changes are also communicated to the College of Studies to ensure that the number of programmes is rational and their aims, learning outcomes and content are unique and consistent. Finally, the program renewal process is overseen by the VU Study Quality and Development Unit, and administrative support is provided by the CAU Study Unit.

Such a mixed management structure with shared responsibility seems flexible enough to ensure the effectiveness of the internal quality assurance system of informatics studies.

7.1.2. Involvement of stakeholders (students and others) in internal quality assurance is effective

Each study programme committee consists not only of selected lecturers of the programme but also includes representatives of social partners and students. These representatives not only take part in regular meetings of the SPC (up to six meetings per academic year), but are also actively involved in resolving disputes between students and lecturers (together with the Disputes Committee which also involves a student representative). In general, student representatives are actively involved in student and academic affairs at VU. In addition to the units already mentioned, they are members of the MIF Council, the Training College, the Academic Ethics Committee, the Teacher Certification Committee and various working groups performing specific tasks. The SER provides specific examples of course updates and changes in lecturers made in response to student requests.

Not only students but also other social partners contribute to the internal quality of the assessed study programs. They participate in thesis defence committees, give guest lectures, organise and carry out student internships, provide the opportunity to use their material resources for studies and research (e.g. UAB "Cherry Service"), participate in the publicity and promotion of the study program (e.g. Šiauliai Industry and

Chamber of Crafts). More than ten different surveys are carried out at VU in order to collect periodic feedback from students, residents, postgraduates, alumni and employers.

The SER report states that students who graduate from the University's degree programmes have a higher level of preparation than those who graduate from colleges or retrain. This was also approved at the meeting of experts with alumni and social partners, where the latter confirmed that graduates of VU MIF informatics study programs are highly valued in the labour market, as the knowledge and skills acquired during their studies allow them to successfully cope with incompletely defined problems and quickly master new technologies and unfamiliar platforms.

7.1.3. Information on the programmes, their external evaluation, improvement processes, and outcomes is collected, used and made publicly available

The University Study Information System (VUSIS) is the main information base for the management of the field-of-study programmes. VUSIS connects several applications intended for different categories of users, the main of which are Study program administration and Student administration applications. The former allows study administrators to create and manage study program plans, while the latter manages all student-related information. Data on entrants competitions and admissions as well as student and study statistics on various parameters are available for further analysis. Lecturers have their electronic workspaces where they have permanent access to their courses and students studying their particular subject, and receive feedback.

As mentioned in the SER, the results of the external expert evaluation of studies are made public on the University's website (vu.lt), on the websites of the Faculty (CAU), Institutes and Departments, as well as on the intranet of the University. Plans and progress reports on the development of the study fields are published on vu.lt and on the intranet. Students are also made aware of this information through the activities of the SPC.

The report presents specific cases that illustrate how the information collected by the program executors about the implementation of the study program and the evaluation of interested persons is actually used to improve the first-cycle (Bioinformatics SP) and second-cycle study programs (Computer Modelling and ŠA Information Technology Management). In addition, some examples of best practices for improving the effectiveness of feedback are presented by the SPC of the Information Technology program. This SPC not only uses survey data from the Central Administration, but also monitors the labour market and employer surveys, directly engages students, and encourages faculty to update their courses to meet market needs.

7.1.4. Student feedback is collected and analysed

The SER document highlights the importance of collecting students' opinions on the quality of informatics studies at Vilnius University through surveys conducted by the University itself. In general, at VU the information on the quality of studies and stakeholder feedback is collected in accordance with VU's procedure for organising social stakeholder feedback to improve the quality of studies and is linked to the indicators of the VU Strategic Plan. The surveys of students are carried out using VU's electronic survey system linked to VUSIS, and they are conducted twice per academic year at the end of each semester with an aim to gather feedback from students on specific subjects studied during the semester and their overall satisfaction with the semester. It should be mentioned that periodic feedback through surveys is collected at the University not only from students, but also from residents, postgraduates and alumni.

The results of these surveys are used for various purposes, including improvement of the study programmes or their specific subjects (modules), certification of lecturers, ongoing quality assurance and decision making both at the CAU (i.e. MIF faculty) level and at the level of a particular SP. All that mentioned ensures that student feedback plays an important role in evaluating teaching quality, and, together with the opinions of other stakeholders, is used for continuous enhancement of study programmes and overall academic experience at the University.

The results of the feedback collected from the students of the informatics field of study are provided in section 7 of the report. The data presented show that students positively perceive the quality of the study content and the quality of teaching to be similar across all evaluated programmes in both cycles, giving a score of 4 out of 5. Only the second cycle programme Information Technology Management at ŠA is rated slightly lower, potentially due to limited data available for drawing general conclusions. These ratings directly correlate with other results of the survey presented in the report and were also confirmed during the site visit meeting with students. In summary, it is also worth mentioning that the percentage of students who would recommend their study program to others is about 75 % on average, which is really high value for this field of study.

Meanwhile, some aspects of implementation of the study programmes were evaluated with lower marks. In particular, some discrepancies between the description of Master's studies and the actual implementation were noted, some lecturers received lower marks for teaching quality, with issues such as inconsistent teaching methods and poor communication skills impacting students' evaluations. Finally, the transition to distance learning during the lockdown posed challenges, including problems with examinations and difficulties in adapting to new teaching methods.

ANALYSIS AND CONCLUSION (regarding 7.1.)

A mixed management structure with shared responsibility of the SPC with other governing bodies of the Faculty of Mathematics and Informatics seems flexible enough to ensure the effectiveness of the internal quality assurance system of informatics studies.

Information related to the implementation of training has been continuously and actively collected in recent years through periodic student surveys, regular SPC meetings, surveys of program teachers, Study Fair events, etc. All these measures continue to contribute to improving the quality of teaching and learning, content and quality of study programs, which makes them more attractive to applicants.

The comprehensive approach applied, taking into account not only the results of student surveys but also the views of different stakeholders, ensures that multiple perspectives are considered in evaluating and improving the quality of studies at the University.

AREA 7: CONCLUSIONS

AREA 1	Negative - 1 Does not meet the requirements	Satisfactory - 2 Meets the requirements, but there are substantial shortcomings to be eliminated	Good - 3 Meets the requirements, but there are shortcomings to be eliminated	Very good - 4 Very well nationally and internationally without any shortcomings	Exceptional - 5 Exceptionally well nationally and internationally without any shortcomings
First cycle				4	
Second cycle				4	

COMMENDATIONS

1. The internal quality management system for studies at Vilnius University is implemented in accordance with the European Framework for Quality Assurance in Higher Education and carries out a wide range of different internal processes and quality assurance procedures, from the development and approval of the curriculum to monitoring and analysis of feedback, evaluation and continuous improvement of the quality of studies.
2. More than ten different surveys are carried out at VU in order to collect periodic feedback from students, residents, postgraduates, alumni and employers.

RECOMMENDATIONS

For further improvement

1. The amount of student work in different subjects must be consistent with the number of credits allocated to the subject and should not vary significantly in subjects with the same number of credits. VU SA students also mentioned that a better balance of student workload between different semesters is needed.
2. The content of the study programs, including their LO, should be checked with stakeholders on a more regular basis to better reflect the market needs, and their input should be more systematically collected, for instance, by organising an annual meeting with the stakeholders.
3. Based on student feedback, the quality of teaching in English should be further improved. Apparently, it would be useful to involve teachers in more intensive practical English language training, especially for teachers who belong to older age groups.
4. Social partners could be more involved in the study process, in particular, as teachers with current practical experience, especially in the later semesters, where they could not only suggest more topics for students' coursework and theses, but also guide or advise them. As the Bioinformatics study program successfully implements the similar recommendation of the previous assessment, this good practice could also be applied to other evaluated informatics study programs.
5. It is advisable to give students more practical opportunities to individualise their study plan and choose the subjects they want. Students mentioned that they are not always able to choose the electives they want because only a small number of subjects on the list are activated.

IV. SUMMARY

First of all, the expert panel wishes to thank the VU and all who worked hard to compile a coherent, detailed, and well written SER. It provided valuable insights into the institution, its strategies, and the study programmes under evaluation. The onsite visit was well prepared and happened in a friendly, transparent and cooperative atmosphere, demonstrating a positive team spirit with the objective to continuously improve the study programmes delivered by the institution.

The VU is the oldest and largest higher education institution in Lithuania and offers six study programmes in the field of Informatics. Based on the SER and the onsite visit, the overall impression about the University, the faculty, and the study programmes under evaluation gathered by the expert panel is very positive. The recommendations from the previous evaluation have largely been considered, and there are already measures in place to move towards a recognized higher education institution in Europe. Along this way, the expert panel identified a few aspects that call for further improvements and are summarised below.

The evaluated study programmes comply with the legal frameworks at all levels, and the aims and the expected learning outcomes are in line with the strategic objectives of the Lithuanian country, the needs of the society and the labour market (characterised by a high demand for IT specialists), and the vision and mission of the VU. The content of the curricula and the teaching/learning/assessment methods are largely aligned and scheduled in a way to guarantee a coherent and gradual acquisition of competences. To further improve the quality of the study programmes, the expert panel recommends developing common guidelines on the granularity of the learning outcomes and their assignment to subjects as well as a systematic way to gather feedback from the stakeholders. It is also advisable to rethink about the different lengths of the study programmes and potential overlaps.

A growing number of scientific publications, research projects, and international research collaborations witness a clear improvement in the research performance over the past few years. There is also the attempt to systematically integrate research and teaching and to encourage students to be engaged in research activities. To further intensify and improve research, the expert panel suggests to motivate as many professors as possible to become active in research, including the VU ŠA, and to gradually shift the target for publications towards prestigious international conferences and journals. A strong international PhD programme might also be a valuable instrument towards these objectives.

Student admission and support seem to be at a very high level in all regards. The selection of students is in line with the learning outcomes, and the services delivered to the students work effectively. For further improvements, the expert panel suggests developing some measures to attract more highly qualified students from abroad.

The study methods meet the academic and professional standards to prepare independent professionals with comprehensive knowledge and skills. The very high quality of the VU graduates was also attested in the meeting with alumni and stakeholders. Adequate measures are in place to support socially vulnerable groups and students with special needs. The overall study process and assessment seems transparent, fair, and objective. To further develop this area, the expert panel suggests to elaborate a policy for the use of AI tools, to ensure that the results of the teachers' evaluation is disseminated in a transparent way and taken into consideration, and to improve the communication regarding optional courses.

The overall situation regarding the teaching staff is good with quality measures in place and a good teacher-student ratio, so as to guarantee the achievement of the learning outcomes. There are also several

possibilities for staff development and exchange. Since currently only a few professors exploit these options, it is advisable that more teaching staff take advantage of the development and exchange offers.

The facilities and the equipment are generally very good and adequate for an effective learning process. In particular, the computational resources, their maintenance, the access for the students, and the selection of electronic databases are excellent, which was also confirmed by the students. The fact that the faculty is dispersed into different sites is not an ideal situation. Having the faculty premises on the same campus close to each other would certainly be helpful.

The internal quality assurance system follows the European Framework for Quality Assurance in Higher Education. It comprises a large number of procedures, measures, surveys, etc., involving all relevant stakeholders, in order to ensure a continuous monitoring and improvement of the overall study process. The expert panel identified several aspects, which should help to further improve the quality management and the quality of the study programmes. The alignment between subjects, learning outcomes, and workload shall be better balanced for some courses. It is also advisable to regularly collect feedback from the stakeholders on the market needs. The discussion with the students revealed a lack of English skills among some teachers. A closer engagement of social partners in the later semesters might be helpful in order to gain more practical experience and hot topics for thesis projects.

As a final note, the expert panel hopes that the feedback and suggestions provided in this evaluation report will be motivating and helpful for the VU to continue along the path initiated in the past and to strive for an internationally recognized University with a strong teaching and research track.

V. EXAMPLES OF EXCELLENCE

The computational resources, including students' access to HPC, were really very good. The strategy applied to maintain the servers and computers and to continuously update the whole IT infrastructure seemed to be excellent. The students were completely satisfied by the current situation, and the ICT admin staff appeared to be very competent.