STUDIJŲ KOKYBĖS VERTINIMO CENTRAS
CENTRE FOR QUALITY ASSESSMENT IN HIGHER EDUCATION

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INFORMATICS FIELD OF STUDY

Vytautas Magnus University

EXTERNAL EVALUATION REPORT

Expert panel:

1. Panel chair: Prof. dr. Steven Bradley ……………………….. (signature)
2. Academic member: Doc. dr. Torben Ægidius Mogensen
3. Academic member: Doc. dr. Jānis Pekša
4. Social partner: Andrius Plečkaitis
5. Student representative: Felix Ferchhumer

SKVC coordinator: Austėja Pliupelytė

Report prepared in 2024
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CONTENTS

I. INTRODUCTION

1.1. OUTLINE OF THE EVALUATION PROCESS

The field of study 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 field of study.

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 an HEI; 2) A site visit by the review panel to the HEI; 3) The external evaluation report (EER) production by the review panel; 4) EER review by the HEI; 5) EER review by the Study Evaluation Committee; 6) Accreditation decision taken by SKVC; 7) Appeal procedure (if initiated by the HEI); 8) Follow-up activities, which include the production of a Progress Report on Recommendations Implementation by the HEI.

The main outcome of the evaluation process is the EER prepared by the review panel. The HEI is forwarded the draft EER for feedback 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 an HEI disagrees with the outcome of the evaluation, it 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).

If the field of study and cycle were **previously accredited for 3 years**, the re-evaluation of the field of study and cycle is initiated no earlier than after 2 years. After the re-evaluation of the field of study and cycle, SKVC takes one of the following decisions regarding the accreditation of the field of study and cycle:

- To be accredited for the remaining term until the next evaluation of the field of study and cycle, but no longer than 4 years, if all evaluation areas are evaluated as exceptional (5 points), very good (4 points) or good (3 points).
- To not be accredited, if at least one evaluation area is evaluated as satisfactory (2 points) or 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. Steven Bradley (United Kingdom), Professor in the Department of Computer Science, Durham University;
2. Academic member: Doc. dr. Torben Ægidius Mogensen (Denmark), Associate Professor in the Department of Computer Science, University of Copenhagen;
3. Academic member: Doc. dr. Jānis Pekša (Latvia), Associate Professor in the Department of Management Information at the Institute of Information Technology, Riga Technical University;
4. Social partner: Andrius Plečkaitis (Lithuania), INFOBALT association project manager;
5. Student representative: Felix Ferchhumer (Austria), Bachelor student of Informatics, Johannes Kepler University; member of ESU Quality Assurance Student Experts Pool.

1.3. SITE VISIT

The site visit was organised on 22 April 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 the 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

Vytautas Magnus University (hereinafter VMU or the University) was established in 1922 and re-established in 1989. It is a classical public university based on the common beliefs and values of freedom, openness and dialogue, and orientated towards humanistic culture. The University provides degree studies of all three cycles – bachelor, master and PhD studies, which cover a broad spectrum of fields ranging from humanities, social sciences and arts to the fundamental sciences, environmental sciences and biotechnologies. There are 14 academic divisions at VMU: Faculty of Arts, Faculty of Catholic Theology, Faculty of Economics and Management, Faculty of Humanities, Faculty of Informatics, Faculty of Law, Faculty of Natural Sciences, Faculty of Political Science and Diplomacy, Faculty of Social Sciences, Agriculture Academy, Education Academy, Music Academy, Institute of Foreign Languages, Botanical Garden. VMU is a member of the international university alliance Transform4Europe.

Overview of the field of study

The University has offered studies in Informatics since 1990. Research is carried out in the fields of artificial intelligence, neuroscience, language technologies, virtual environment design and modelling, system risk and reliability analysis, and numerical methods for differential equations. The Faculty of Informatics of VMU (hereinafter referred to as VMU IF or Faculty) cooperates with VMU research institutes, in particular with the Research Institute of Natural and Technological Sciences and Academy of Education and the Educational Research Institute for training of teachers of informatics and mathematics, edtech research and development of applications, and Institute of Digital Resources and Interdisciplinary Research for research on natural language processing technologies.

Previous external evaluations

The current study programmes in Informatics are Informatics Systems and Multimedia and Internet Technologies (1st cycle), as well as Applied Informatics (2nd cycle), which were accredited for a maximum period of 6 years during the previous external evaluation. The external evaluation of the study programme Multimedia and Internet Technologies was carried out in 2014. The programme aims and learning outcomes, teaching staff, facilities and learning resources, study process and student performance assessment were evaluated with a score of 4, while the curriculum design and programme management were evaluated with a score of 3 (on a 4-point scale). The last external evaluation of the Informatics Systems (in 2018, the name of the programme was changed from Informatics to Informatics Systems) and Applied Informatics study programmes was carried out in 2016. The programme aims and learning outcomes of the Informatics Systems study programme were evaluated with a score of 4, while the other areas were evaluated with a score of 3 (on a 4-point scale). All assessment areas of the 2nd cycle study programme Applied Informatics were assessed with a score of 3 (on a 4-point scale).

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 (study plans, list of final theses/ scores, teaching staff);
- Module descriptors (over 40);
- Final theses examples;
- Mid-term tasks, Exam tasks, practical work examples;

- Assessment of Research and Development Activities report by Research Council of Lithuania (2023) including assessment of VMU Informatics and Natural Sciences R&D;
- Administrative documents (VMU-wide rules for compensation, sample of points allocation).

Additional sources of information used by the review panel

VMU and VMU IF webpages:
- https://www.vdu.lt/en/
- https://www.vdu.lt/en/studiju-programa/informatics-systems/
- https://www.vdu.lt/lt/informatikos-sistemos/
- https://if.vdu.lt/

Student enrollment/ graduation and dropout statistics for VMU and other HEI informatics programs since the 2017-2018 study year (SVIS data, in Lithuanian).

II. STUDY PROGRAMMES IN THE FIELD

First cycle/LTQF 6

Title of the study programme	Informatics Systems	Multimedia and Internet Technologies
State code	6121BX016	6121BX017
Type of study (college/university)	University	University
Mode of study (full time/part time) and nominal duration (in years)	Full time (4 years)	Full time (4 years)
Workload in ECTS	240	240
Award (degree and/or professional qualification)	Bachelor of Computing	Bachelor of Computing
Language of instruction	Lithuanian, English	Lithuanian, English
Admission requirements	Secondary education	Secondary education
First registration date	4 June 1997	18 April 2011
Comments (including remarks on joint or interdisciplinary nature of the programme, mode of provision)	-	-

Second cycle/LTQF 7

Title of the study programme	Applied Informatics
State code	6211BX012
Type of study (college/university)	University
Mode of study (full time/part time) and nominal duration (in years)	Full time (2 years)
Workload in ECTS	120
Award (degree and/or professional qualification)	Master of Computing
Language of instruction	Lithuanian, English
Admission requirements	Bachelor's degree
First registration date	4 June 1997
Comments (including remarks on joint or interdisciplinary nature of the programme, mode of provision)	-

III. ASSESSMENT IN POINTS BY CYCLE AND EVALUATION AREAS

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

No.	Evaluation Area	Evaluation points[*]
1.	Study aims, learning outcomes and curriculum	4
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	4
7.	Quality assurance and public information	3
	Total:	27

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

No.	Evaluation Area	Evaluation points[*]
1.	Study aims, learning outcomes and curriculum	4
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	4
7.	Quality assurance and public information	3
	Total:	27

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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]

IV. 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, topics and learning outcomes of the study programmes by VMU IF (1st cycle programmes - Informatics Systems; and Multimedia and Internet Technologies, and 2nd cycle programme Applied Informatics) are clearly defined and well aligned with the needs of the society, ICT/digital industry and development of the job market. Information about the study programmes is accessible in English at the VMU website. Employment opportunities and positions/roles for graduates are adequately explained in the publicly available VMU sources and are in line with the job market needs.

As a minor observation, the course descriptions do not always clearly outline the competences and practical skills that students are expected to acquire to qualify for the specified positions in their first job. In addition, mentions of some of the qualifications/roles as graduate employment opportunities may be misleading in terms of immediate employment in that role. For example, no graduate would be able to work as software architect upon graduation, as it would take a significant experience and career progression from junior, mid, senior developer/team lead to accomplish that qualification to the competence expected by the software industry; or, as another relevant example, no graduate could work immediately as quality assurance manager prior working as QA-software tester, and from the descriptor knowledge and skills from the course which is delivered would very likely not be sufficient to start a junior QA-tester role without additional learning and practical skills, comparable to those delivered in other learning formats (vocational, non-formal courses or self-paced online learning). Moreover, there are no systematic ways to find out the expectations of the employers, and there are no evaluations of employer satisfaction in terms of knowledge and skills of graduates; feedback from employers on these has been informal, which is valuable, however, not recorded, therefore, trends cannot be compared, and seizing opportunities for actionable insights is missing.

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

The evaluated study programmes are designed according to the Liberal Arts education profile. Such programme and study plan design provides students an opportunity to study more broadly themed rather than narrowly specialised, pre-defined subjects.

This is in line with the aims of VMU reflected in the strategy: "creating liberal learning conditions for an individual" (VMU Strategy), and supports the objectives very well, including those of self-governance, as well as international and interdisciplinary studies. The study plan exhibits a significant part (close to 50%) of the credits allocated to 'Group A' elective study courses which include an extensive list of choices from social sciences, humanities, and language courses.

In addition, there are 3 specialisations offered in both English and Lithuanian (including: Artificial Intelligence Systems, Business Informatics and Software Systems, in some cases translated as Programme Systems) which meet the dynamics of software and IT industry and job market at large. There is a fourth specialisation (IT teaching) in Lithuanian only, which is adequate as it is oriented towards people studying to become Lithuanian primary/secondary education system teachers of IT subjects.

ANALYSIS AND CONCLUSION (regarding 1.1.)

The alignment of the 3 study programmes with Vytautas Magnus University 2021-2027 Strategic Action Plan is clear and visible. The aims and the learning outcomes are consistent with the type and level of qualification and the degree offered, relevant to the digital industry and software-driven segment in particular, and the employer expectations as well as societal trends. Liberal Arts approach, interdisciplinarity, internationalisation and flexibility are distinctive features embedded in the programmes' design. It is important though that the freedom of choice and broad knowledge is adequately balanced with enabling students to build specific skills and meet the needs of the job market, by using environments and tasks in the coursework similar to those junior industry employees face.

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

The composition of the study programmes is in conformance with the General requirements of studies and the Descriptor of the group of study fields of Computing for ECTS, as well as with balance of contact and individual work. Programmes within the field demonstrate compliance relevant to the Descriptor of Study Cycles. The 1st cycle programmes - Informatics Systems and Multimedia and Internet Technologies, and the 2nd cycle programme 'Applied Informatics' have 240, 240 and 120 ECTS respectively. Study programmes meet the requirements for the total programme workload used in credits for the study field, which is aligned with the requirements for credits for practice-based learning and internship proportions.

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

The module descriptions provided as an annex show good alignment with the overall aims of each of the programmes as defined in the SER. During meetings, staff reported that there were adaptations to the means of assessment during the Covid pandemic, but that now the means of assessment has largely returned to the situation pre-pandemic. University guidelines on the use of ChatGPT and other large language models were helpful in guiding teachers in their assessment. Students on the first cycle programme appreciated the diversity of content offered within the programme, and second cycle students valued the hybrid approach to teaching, allowing them to study alongside their employment. Teaching methods were largely the same from module to module, and while there could be more variety this was not identified as an issue by students. An appropriate balance of theoretical and practical material and support is offered, although some students on the multimedia programme felt that the amount of maths was more than they expected. Across first cycle and second cycle programmes, there is little requirement for teamwork assessment, as suggested in the module outlines and confirmed by students and staff. The industrial trend of using the agile (scrum) method

for software development in teams has been highlighted in previous reviews but still not clearly articulated in the coursework; has been mentioned as a topic within project management. MS projects, Teams were mentioned as tools being used however no industry-relevant tools used in software development, requirements drafting and other teamwork, like Kanban board or Jira for task management, Jenkins for continuous integration/continuous development, or Github for code repository were referenced. This could helpfully be increased to develop students' team-working skills and better preparedness for employment.

1.2.3. Curriculum ensures consistent development of student competences

The module descriptions describe an appropriate sequencing of material to develop student competences. Students confirmed that they were happy with the relationship between the content of the modules offered, that prerequisite material was appropriately introduced, and that there was seldom inappropriate overlap between the material covered in modules. Students felt that they were very well prepared for employment, both in terms of technical competence and soft skills.

Employers had very positive reflections on graduate students' soft skills in particular. However, as a minor observation, the systematic process and effectiveness of finding and implementing internships within relevant industry/role was not clearly described, and given significant foreign graduates' unemployment (numbers provided for up to 30% range of the total graduates registering as unemployed), it raises some concerns. The scope and quality of practical learning and acquisition of skills are key to students' future employment positions, as well as student orientation of their career and professional development opportunities within the course modules was not fully convincing as module descriptors lack specific details.

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

Programme descriptions showed an appropriate amount of personalisation available to students, which is particularly strong at VMU, given the Liberal Arts perspective. Students were happy with the balance of subjects and choice available to them.

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

The final theses requirements for compliance with field descriptors and cycle requirements are met. Both Bachelor's and Master's final thesis are according to the requirements. Getting acquainted with the final thesis list of the three study programmes Informatics Systems, Multimedia and Internet Technologies and Applied Informatics, the average grades of the final theses in 2021, 2022 and 2023 were 9.0, 9.3 and 9.0, respectively, for the Information Systems programme, 8.6, 8.8 and 8.1 for the Multimedia and Internet Technologies programme, and 8.3, 8.5 and 8.1 for the Applied Informatics study programme according to SER. Final theses preparation is well described, committee formation is represented and the defence process of the final theses is well driven.

The numbers for internships with industry placement or other forms are not clearly registered for all students in their 4th year, including international students, and part of SER. It is not clear what kind of learning plan with internship task is offered by VMU IF to support those students who do not land an industry placement internship in the dedicated timeframe (8th semester). The internship outcomes are not sufficiently specific in the internship module descriptor and related to the role chosen. E.g., for a graduate choosing the software developer position/role, an outcome such as proposing a solution, writing a report and presenting it as in the

current module descriptor is not sufficient as an outcome of 400 hrs work, and some code development and a demo should take place instead. In such a case, if the student did not land an internship but has developed some code during the internship, at least a code review with feedback on code quality could be also expected. In other cases, e.g., if the student expects to get a job in project management or data analytics, a relevant internship topic and results should be drafted.

ANALYSIS AND CONCLUSION (regarding 1.2.)

Legal requirements of studies are met. The learning outcomes and methods of teaching and assessment align with the aims of the programme. While there are areas that could be further developed and refined, students and employers are happy with the subjects offered, the choices available, and the positive impact these have on employment outcomes.

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				■	
Second cycle				■	

COMMENDATIONS

1. The degree of personalisation offered to first cycle students is commendable, and the Liberal Arts approach is reflected well in the development of soft skills among the students.

RECOMMENDATIONS

To address shortcomings

No shortcomings were identified

For further improvement

1. The requirement for assessed group work within more course modules and relevant instructions and hands-on training on how to effectively self-organise in teams could help the students further develop their team working skills.
2. Register student internship data with industry placement (new to company/already employed) or internship in the faculty so that there is verifiable data and numbers available to reflect the trend of industry engagement in providing internships to VMU students as well as student and employer feedback in scores, and present those in the next SER. Define internship outcomes in the internship module descriptor in relation to the professional role chosen by the student.
3. The module descriptors and coursework including practical skills on demand in the software industry should be periodically reviewed with social partners or professionals and updated. There should be a process at VMU IF applicable to every such module (software development, testing, robotics etc.)

and action plans agreed with professionals from employers/industry partners suggestions and their actual assessment of employed graduate skills in the first months after internship/employment.

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

The number of publications is good, however, the areas of research are very applied, with little to no research in classical CS areas such as algorithms, theoretical computer science, programming languages, and computer architecture.

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

Modern tools for software development are used, and teaching in robotics and AI incorporates recent research; other topics, less so. It would benefit in particular students in the Information Systems programme to see other programming language paradigms than object-oriented programming, in particular, side-effect-free programming using a functional language such as F#, Haskell, or Scala. Also, it appears that standard code collaboration/versioning tools like Git are not used.

As previously noted, the research that is done is relevant for the programmes, but many of the fundamental courses (such as algorithms) are not taught by researchers in the area.

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

Students have opportunities to engage with research through their thesis work. Some students in the first cycle (16%) and 30% of 2nd cycle students contribute to publicly funded research related to their dissertation.

ANALYSIS AND CONCLUSION (regarding 2.1.)

Both research and curriculum follow modern trends, but both could benefit from more theoretical CS and more programming language paradigms. VMU IF demonstrates a commendable commitment to engaging students in research and innovation.

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				████	
Second cycle				████	

COMMENDATIONS

1. There is a good amount of research done in areas that are relevant for the programmes under consideration

RECOMMENDATIONS

To address shortcomings

   No shortcomings were identified

For further improvement

1. Strengthen research in classical and theoretical areas of computer science, such as algorithms and programming languages.
2. Introduce students to other programming paradigms than object-oriented programming (such as functional programming). This is particularly relevant for the Information Systems programme and the 2nd cycle programme.
3. ~~Introduce Git/GitHub or similar tools for programming collaboration and versioning.~~ Include the use of Git/GitHub or similar tools for programming collaboration and versioning within course descriptors where it is appropriate, e.g., in projects.

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 procedure is described on the VMU website, with selection criteria clearly stated, both for international and Lithuanian students. The total number of students admitted to first cycle programmes has declined slightly over recent years, in line with national demographic trends, although the number of students starting Informatics Systems has increased slightly. Average admission scores have remained stable. The number of students admitted to second cycle Applied Informatics has grown strongly over the last two years.

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

Foreign qualifications of students are assessed by the staff of the International Cooperation Department. Procedures are transparently laid out in several documents and forms.

For admission, qualifications can either be fully recognised (thus granting the right to study), not recognised (refusing entry to the study) or partially recognised. In the last case, a test on the subject matter or an additional year of study is offered.

The recognition of university courses at other universities is organised by the responsible faculty and is based on the course equivalence. Students in study exchange programs use pre-agreed learning agreements to ensure that courses can be accredited.

The possibility to recognise non-formal learning exists and the procedure is performed free of charge, on its own platform. Courses done in partnerships with Coursera are recognised. No such recognition took place in 2021-2023 for the field of study, however, the administration believes that this is due to most students starting their studies directly after school.

ANALYSIS AND CONCLUSION (regarding 3.1.)

The procedures for admission and recognition are transparently explained. First cycle programmes are sustainable in the current situation, with growth evident in the second cycle. While sufficient systems for the recognition of non-formal learning exist, they appear to not be used much.

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

Students at VMU are provided with ample opportunities to go abroad: other than the usual Erasmus+ program for exchange semesters and internships, cooperations with many other partner institutions also exist and are supported financially with VMU mobility scholarships. The University is also part of the *T4EU Alliance* which facilitates mobilities in the form of student weeks at participating universities. International summer schools etc. are also offered and funded by VMU.

Exchange opportunities are promoted in various ways, such as social media or in the form of events (VMU Erasmus days, Erasmus+ competitions). Students report that they feel very well informed about offers to go abroad, and are fully supported by the University and the relevant study programme. Recognition of credits is liberal and students are very flexible in choosing their subjects abroad.

Outgoing part-time students (2020-2023 total): 29 (upwards trend); incoming part-time students: ca. 30 per year; incoming full-time students (2020-2023 total): 35% (first cycle - upwards trend), 29 % (second cycle).

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

Academic information is provided online (website, Moodle, newsletters); consultation hours can be requested from teachers. VMU IF administration hosts periodic meetings with students and consults on questions. Financial aid is given to students in different ways: multiple Scholarships exist, some are for students in difficult situations or for students with above-average grades. Payment of tuition fees might be deferred on a reasoned request, for many students their amount might also be reduced. Similarly, accommodation prices can be reduced. Activities of student organisations are financially compensated, as are some costs to attend scientific conferences etc. Students feel well-informed about scholarships. VMU offers free psychological counselling. Students with disabilities are assisted by a disability coordinator. Students are informed about career opportunities through various consultations and events of the VMU Career Center.

3.2.3. Higher education information and student counselling are sufficient

Each year, 1st cycle first year students receive important information on various study-related topics during an introductory week. On the Faculty Day, the modalities of their specific study are explained in more detail. Students are also provided with a first year study guide and are supported by trained student mentors. For second-cycle students, a similar information week is hosted as well.

Further information about the study is provided via Moodle, the VMU website, a dedicated online student portal and via email. A centralised student service centre can also be contacted with questions. Lecturers allocated specific consultation time to answer questions and give introductions to all courses.

ANALYSIS AND CONCLUSION (regarding 3.2.)

Students feel well-informed and supported by the University. They know where to find information on scholarships and exchange opportunities and are assisted in their pursuit.

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				███████	
Second cycle				███████	

COMMENDATIONS

1. Students felt well-informed via the detailed information booklets provided by the University.
2. Students think it is easy to go abroad and appreciate the exchange opportunities the University provides.

RECOMMENDATIONS

To address shortcomings

> *No shortcomings were identified*

For further improvement

1. Monitor the process of recognition of non-formal learnings to ensure they are not hampered by administrative barriers.

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

There are a variety of teaching methods used, including case studies, experimentation, and individual and (some) group projects, and there is a mix of theoretical and practical subjects. Moodle is used for course organisation. The number of contact hours exceeds the requirements. Mandatory group work could be introduced earlier, in particular in the Informatics 1st cycle programme. There is good support for finding internships, and the expert panel was informed that no students have failed to find placement.

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

Extensive policy exists that outlines how the University can accommodate students with disabilities, including individual study schedules and adaptations of exam modalities. Infrastructure (such as buildings) is barrier-free, specific equipment is provided. A disability coordinator assists with the implementation of policies. University members are trained to provide an inclusive environment. Socially vulnerable groups are provided with scholarships.

While the actual share of female students is comparatively high for studies in the field with ca. 29% across both cycles, no clear systems to monitor it and support underrepresented groups exist.

ANALYSIS AND CONCLUSION (regarding 4.1.)

Teaching methods and quality appear to be good. The policies and services for disabled students are outstanding and must be commended. The demographic of students (particularly in regards to gender balance) is not monitored strongly enough.

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

Students are monitored for course registration and exams, and students who have difficulties during terms (fail to submit assignments) are contacted. Feedback on assignments is given through Moodle, for large courses feedback is collective, but for smaller courses (~20 students) individual feedback is given. In a few cases, students are allowed to submit assignments after feedback is incorporated. Students are invited to discuss their grades with examiners before these are finalised.

On the other hand, the dropout rate the panel was informed by the SER team is ~15% which would be significantly lower than the average in the field of Informatics in Lithuanian universities (~48% factual drop-out, data from 2020; during the last 3 years average relative dropout /admission to Informatics studies in Lithuanian universities was 58% data by SVIS, data for VMU for the same period displays an average relative drop-out of 53%). This is in line with other universities but hints at a lack of monitoring and awareness of the drop-out scale in the faculty, also reasons and possible actions VMU IF could take to increase student engagement, satisfaction with studies and reduce the share of dropouts.

4.2.2. Graduate employability and career are monitored

Graduate employment monitoring numbers were provided by other institutions and the VMU itself. The main sources of information, as described in the SER, are the alumni survey conducted by VMU, and statistics provided by the Lithuanian Public Employment Service as well as information provided by the Government Strategic Analysis Centre (STRATA). Education Management Information System (ŠVIS) data from the National Education Agency (NŠA) on the employability of 2020-2022 graduates is provided in the SER.

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

Policies are in place for non-discrimination and academic integrity. Students are informed about plagiarism policies. The potential use of LLMs is taken into account when formulating assignments, so LLMs are unlikely to provide adequate answers to the questions. No cases of academic misconduct have been reported in three years. This can be explained by extensive information about academic integrity, a relatively small number of students in the programmes, and that students are allowed to rewrite submissions that do not properly cite their sources.

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

Students can in most cases appeal assessments. An exception is the assessment of final work, which is done by a three-person committee that includes external people. Two cases exist where late submission was granted due to illness, but no cases of other forms of appeals or complaints are mentioned in the SER. The expert panel is given to understand that appeals are often handled informally without formal paperwork.

ANALYSIS AND CONCLUSION (regarding 4.2.)

There is good feedback to students and good communication with teachers about grades etc. There are detailed policies about academic and social conduct, and students are well-informed about these. Complaints and dispensations are mostly handled informally, which can potentially lead to unequal treatment.

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				███	
Second cycle				███	

COMMENDATIONS

1. The policies and services for disabled students are outstanding and should be continued.

RECOMMENDATIONS

To address shortcomings

No shortcomings were identified

For further improvement

1. Clearly monitor and address the underrepresentation of groups within the students' demographic, particularly in regard to gender imbalance.
2. A lot of situations are handled informally, but it might be better to have more formalised procedures to ensure equal treatment.
3. The dropout rate (per programme/study year) currently is not adequately monitored and is not part of the SER, thus, it should be closely monitored and included in future SERs. There should be a regular process defined and performed annually, and clear responsibility established for monitoring the drop-out scale in the faculty, also possibly including open discussions with students on reasons and possible actions VMU IF could take to increase student engagement, satisfaction with studies and reduce the share of dropouts.

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 is sufficient to achieve learning outcomes

There are 51 academic staff involved in teaching informatics programmes at VMU, giving a ratio of 9.88 students for each staff member. The majority of the staff hold a PhD in a directly related field and have recently published relevant academic research. The majority of the academics work for the university more than 0.5 WTE and there is a very good range of experience within the teaching staff. The average length of employment of academic staff is high at 16.8 years, which is helpful in terms of having very experienced staff, but indicates a lack of younger staff. Of the teaching staff 46% are women.

ANALYSIS AND CONCLUSION (regarding 5.1.)

The staffing levels, qualifications and competence are more than sufficient to enable students to achieve the learning outcomes specified within the programmes. Staff gender balance is excellent.

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

FACTUAL SITUATION

5.2.1.   Opportunities for academic mobility of teaching staff are ensured

Staff have opportunities for mobility under the Erasmus+ scheme. Although there were some limitations to uptake of the scheme because of the Covid pandemic, these opportunities have been taken up by at least some of the staff, and numbers have recovered to a good level.

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

Opportunities for staff development are good through the VMU Institute of Innovative Studies, the VMU Institute of Foreign Languages, Erasmus+ and MOOCs. These have been enhanced since 2022 through the foundation of the VMU Professional Development Fund and the T4EU Alliance.

ANALYSIS AND CONCLUSION (regarding 5.2.)

Teaching staff are provided with very good mobility and development opportunities, both internally and through Erasmus+.

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				███	
Second cycle				███	

COMMENDATIONS

1. The gender balance within the academic staff of the department is very close to 50/50.

RECOMMENDATIONS

To address shortcomings

No shortcomings were identified

For further improvement

1. Continue to improve staff uptake of Erasmus+.
2. Monitor the impact of the VMU Professional Development Fund and the T4EU Alliance.

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 number of lecture halls and classrooms is sufficient and well-equipped. Specialised equipment for virtual reality and robotics is available in labs.

Software is available for students. Disabled access and support equipment is excellent. There is good access to online textbooks and other publications. The number of on-campus study places for individual and especially group work is still somewhat low (but there are plans for expansion). The cafeteria offers a variety of good food at reasonable prices.

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

The resources have been upgraded, and it appears that this is an ongoing process.

ANALYSIS AND CONCLUSION (regarding 6.1.)

The teaching facilities are good, but more space is needed for students to work in groups (in places where talking is not frowned upon).

AREA 6: 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				████	
Second cycle				████	

COMMENDATIONS

1. The lecture and classrooms are sufficient and well-equipped.
2. Online access to publications is improved.

RECOMMENDATIONS

To address shortcomings

No shortcomings were identified

For further improvement

1. Expand the number of easily accessible on-campus workspaces for individual and especially group work by students.

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

Quality processes are described both in the SER and on the University website, and these are appropriate and robust. Staff and students were able to identify clear recent examples of how review processes led to improvement of the provision. Teaching is carried out by staff within the VMU IF and also the Faculty of Arts, but these different staff work well together and ensure integrated provision. Most issues that arise are dealt with informally and quickly through discussion between the students and the teaching staff.

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

Students, teachers and social partners are present in various committee meetings and can directly share their views there. They, as well as alumni, are also invited to participate in multiple electronic surveys: Surveys exist for new first-cycle students to gauge their expectations, for graduates exit studies exist, alumni are surveyed about the labour market and teachers about their teaching environment. At the end of each semester, students are also queried about their courses.

Students are trained and delegated to commissions by the VMU Student Representative Council. Alumni are represented by the VMU IF Alumni Association and make up a large portion of the social partners' representatives as well.

While students have a place in relevant committees and communication with them and other stakeholders is good, committees do not have a clear policy to regulate decision making structures. According to the administration, decisions are generally made by consensus of all members.

Students generally feel listened to and think that their feedback is acted on.

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

Study quality survey results are published on the VMU website, but these are not broken down by programme or field of study. Students and staff confirmed that study quality survey results are shared and discussed internally with students. External evaluation reports for Informatics were not available on the University website. Staff indicated that this was an oversight and would be dealt with, although previous external reviews would have been at the level of a programme rather than a field of study.

7.1.4. Student feedback is collected and analysed

Student surveys on teaching and studying are centrally collected by both the University and the Faculty and shared with the Study Programme Committee. Teaching is evaluated high, with an average grade of slightly more than 9/10 across all three programmes.

Student participation in surveys has been increasing in the last year but is still at only 21-26%. Surveys are advertised via emails and the University portal

Student satisfaction with their programme is good, with Informatics systems at ca. 79% (slight drop) and Applied Informatics at 90%. Satisfaction with Multimedia and internet technologies has dropped (72% from 83% since the 2021-2022 survey). Based on student feedback, the best lecturers are selected. According to the SER, students feel that study methods are not varied enough. However, this is data from the centrally conducted study quality survey, and the VMU IF student sample is quite low (~21% of all students of the faculty for 2022-2023); it also is not programme-specific to make any conclusions or insights about the program quality.

Exit and graduate surveys show that students generally rated all programmes highly, and areas of improvement have been identified. International student graduate survey is planned by the Faculty 12 months post graduation.

ANALYSIS AND CONCLUSION (regarding 7.1.)

Stakeholders feel well-represented and have a say in relevant committees, however, committees lack clear policies on voting structures to ensure disadvantaged members (such as students) are heard. Number of survey respondents is very low for most surveys. Survey results are generally acted on, good teachers are rewarded and bad teachers are replaced.

There was no quantitative data included in the SER on the Faculty-level surveys on specific courses. The faculty-level surveys were mentioned by VMU IF senior management and administration staff as well as the SER group during the meetings, that they as taking place every semester. Still, there is little clarity about the regular process, tools used, data collected, actual results, their communication to students and teachers, actionable insights and follow-up actions, except in some critical cases (students and teachers could both recall that a bad survey result for a lecturer resulted in a change of teachers for a subject). There should be a clear process and timeline described for the latter in SER, with overall satisfaction about the courses and key programme components presented in a structured fashion in the SER per programme, as well as presenting the data to all students taking that specific course within the last semester.

Collecting student feedback on satisfaction with studies and specific courses happens every semester based on the interview onsite. This is visible on the VMU level for results of general satisfaction of learning and teaching by a survey of all faculties, however, not the Faculty level. Student participation in providing feedback to surveys on course quality is too low (just above 20% of the total students at the Faculty complete the VMU level questionnaire). It is not clear what is the level of detail in student feedback in the VMU IF surveys, and how actionable insights are derived from it in terms of a specific course/programme advancement.

VMU IF should focus more on collecting student feedback on the Faculty level surveys, and a clear process should be described, approved, and monitored with clearly defined responsibilities and timelines. Study programme quality surveys should be organised and their results should be made available to students on the course level, to reflect the quality review process outputs, inform applicants of the students' perspective on the quality of provision and provide actionable insights to VMU IF staff for improvement, and make sure students see their vote counts, and there is a follow-up action if needed.

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			███		
Second cycle			███		

COMMENDATIONS

1. Informal and formal mechanisms for improving the quality of provision are working well.

RECOMMENDATIONS

To address shortcomings

1. The University should ensure that all external reviews are published on the University's website.
2. Create a clear structured process description on how Faculty-level study programme quality surveys should be implemented and promoted in the VMU IF to students and teachers.
3. At least 50% participation in the quality surveys of the target students' audience should be aimed by the VMU IF at least in the Faculty-level surveys at the specific course level.

For further improvement

1. Define clear policies on voting structures in committees to ensure that students' voices are also heard in the future.
2. Try to find out why student survey numbers are so low, e.g., by creating a meta survey about issues with the current surveys. E.g., consider evaluation events to promote participation in surveys.
3. Include clearly separated descriptions of the VMU-level and Faculty-level student survey process and their actual results, including facts and insights on improvement actions and satisfaction trends, in the SER.

V. SUMMARY

The results of the evaluation are very positive in general. There is evidence of good positioning in the Lithuanian market of studies in Informatics, with highly professional teaching staff, satisfied students, employers and the well-structured modern content of programmes.

The strengths of VMU IF programmes in the Informatics field of study are:
- 'Liberal arts' approach and alignment with other areas of study at VMU;
- Built-in flexibility to broaden the learning horizon of students in cooperation with other faculties in VMU, with elective subjects as well as specialisations in study programmes;
- High-quality infrastructure in computer classes;
- Significant support and positive attitudes by employers;
- Very good support and positive feedback from students in general, good accessibility and international exchange opportunities;
- The successful attraction of international students, particularly in the Informatics Systems programme.

There were areas for improvement identified during the evaluation with non-critical observations which still may be helpful to ensure better satisfaction by students, teaching staff and employers. Those were:
- Higher student engagement in feedback collection on the quality of specific courses and programme structure;
- Better communication and regular online publishing of student feedback and evaluation results;
- Closer dropout monitoring and analysis, including addressing risk factors like students' preference for online and low engagement;
- More focus towards employment profiles of alumni and their career monitoring, in particular for international students, and stronger support in the orientation of students towards future professional development, including well-defined internship structure and outputs, whether within industry or Faculty.