STUDIJŲ KOKYBĖS VERTINIMO CENTRAS
CENTRE FOR QUALITY ASSESSMENT IN HIGHER EDUCATION

CHEMISTRY FIELD OF STUDY

Vilnius University

EXTERNAL EVALUATION REPORT

Expert panel:

1. Panel chair: Prof. Dr. Jan Lundell ..... (signature)
2. Academic member: Prof. Dr. André RTS Araujo;
3. Academic member: Prof. Dr. Polonca Trebše;
4. Social partner representative: Renaldas Rimkus;
5. Student representative: Vėjas Strelčiūnas

SKVC coordinator: Dr. Ona Šakalienė

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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. Jan Lundell, professor of chemistry at Department of Chemistry at University of Helsinki and Director LUMA Centre (Finland);
2. Academic member: Prof. Dr. André RTS Araujo, professor of pharmacy at Department of Pharmaceutical Sciences Politécnico da Guarda (Portugal);
3. Academic member: Prof. Dr. Polonca Trebše, professor of chemistry at Department of Sanitary Engineering Faculty of Health Sciences the University of Ljubljana (Slovenia);
4. Social partner representative: Renaldas Rimkus, Joint-stock company “Sanobiotec“;
5. Student representative: Vėjas Strelčiūnas, First-year Master’s student in the Nanobiotechnology study programme, Faculty of Fundamental Sciences at the Vilnius Gediminas Technical University.

1.3. SITE VISIT

The site visit was organised on 29th of October, 2025, on-site in Vilnius.

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. Some stakeholders participated online in the interview session with alumni and social stakeholders.

1.4. BACKGROUND OF THE REVIEW

Overview of the HEI

Vilnius University (VU), founded in 1579, is the oldest and largest higher education institution in Lithuania, operating as a public university. Its governance structure is defined by the Statute of Vilnius University, with self-governance implemented through the Senate, the Council, and the Rector. VU comprises 15 core academic units, including 11 faculties, one institute, one centre, one academy, and one business school, as well as 12 core non-academic units. As of October 2024, the University employed 6,272 staff members, including 3,407 teaching staff and 805 research staff, and enrolled 24,134 students, of whom 2,581 were international students.

The University offers a wide range of study opportunities across humanities, social sciences, natural sciences, medical and healthcare sciences, and technological sciences. Its academic portfolio includes more than 90 bachelor's and integrated programmes, 110 master's and professional programmes, nearly 30 doctoral research fields, and over 60 residency programmes. Studies are organized within 12 study field groups and 60 study fields, ensuring comprehensive coverage of academic disciplines and research areas.

The Faculty of Chemistry and Geosciences (CHGF), established in 2016, is responsible for studies in Chemistry and related fields. It consists of two institutes – the Institute of Chemistry and the Institute of Geosciences comprising 11 departments and NanoTechnas, the Center of Nanotechnology and Material Science. CHGF employs 145 staff and serves 826 first- and second-cycle students and 50 doctoral candidates. Research activities focus on advanced materials, nanostructures, analytical methods, and environmental conservation. VU ranks among the top 501–550 universities worldwide in Chemistry (QS 2024), reflecting its strong academic and research performance.

Overview of the study field

Studies in the field of Chemistry at Vilnius University are organized within the Faculty of Chemistry and Geosciences (CHGF), which was established in 2016 following the merger of the Institute of Geosciences with the Faculty of Chemistry. The Faculty operates under the Statute of Vilnius University and its own regulations, with governance ensured by the Council, the Dean, two vice-deans responsible for study affairs, and two directors overseeing scientific and general matters. An advisory College of Studies supports academic decision-making. Chemistry studies have a long tradition at VU, dating back to 1944, and since 1997 have been structured into two cycles: Bachelor and Master.

The CHGF comprises two institutes, e.g. the Institute of Chemistry and the Institute of Geosciences, housing 11 departments and NanoTechnas, the Center of Nanotechnology and Material Science. The Institute of Chemistry includes six specialized departments focusing on areas such as analytical, inorganic, organic, physical, polymer, and applied chemistry. Research activities cover a wide range of topics, including synthesis and characterization of novel materials, nanostructures, advanced analytical methods, and environmental chemistry. The Faculty actively promotes research dissemination through local and international conferences and has achieved notable recognition, ranking among the top 501–550 universities worldwide in Chemistry according to the QS World University Rankings 2024.

Currently, the Faculty offers seven first-cycle programmes, including Chemistry, Chemistry of Nanomaterials, and Cosmetic Chemistry, and seven second-cycle programmes, including Chemistry and Nanochemistry and Entrepreneurship. In the evaluated study field, two undergraduate programmes (Chemistry and Chemistry of Nanomaterials) and one postgraduate programme (Chemistry) are active. The Master's programme in Nanochemistry and Entrepreneurship, introduced in 2024, reflects the Faculty's commitment to modernization by integrating business and management courses to meet evolving market needs. With 145 academic and administrative staff and over 870 students across all cycles, the CHGF combines strong research capacity, modern

infrastructure, and interdisciplinary approaches to maintain its relevance and competitiveness in the global academic landscape.

Currently, CHGF employs 145 staff members, including 28 professors, 36 associate professors, 11 assistant professors, 4 lecturers, 5 chief researchers, 4 senior researchers, 6 researchers, 1 research assistant, and 41 administrative staff. The Faculty serves 826 Bachelor's and Master's students and 50 doctoral students. CHGF offers Bachelor programmes in Chemistry, Chemistry of Nanomaterials, and Cosmetic Chemistry, as well as Master programmes in Chemistry and Nanochemistry and Entrepreneurship. All programmes are regularly updated to reflect market trends and technological advances. The new Cosmetic Chemistry programme, introduced in 2024, responds to growing demand in cosmetics and health-related industries, while the upgraded Master's programme in Nanochemistry and Entrepreneurship integrates business and innovation skills to prepare graduates for emerging challenges.

Previous external evaluations

The last external evaluation of the programmes of the study field was conducted in 2016. Programmes that were evaluated (Chemistry BA and MA, Chemistry of nanomaterials BA), for the purpose of accreditation were assessed positively and were accredited for 6 years, according to the SER.

Across all the three Chemistry programmes at Vilnius University, several common strengths and areas for improvement were identified. Each programme demonstrates clear and well-structured learning outcomes, supported by highly qualified, research-active faculty and access to modern laboratory infrastructure, which significantly enhances research opportunities and practical experience. Student engagement in research and mobility through Erasmus+ is consistently encouraged, and assessment practices during studies are generally clear. However, recurring challenges include the need to strengthen interactive teaching methods, improve effective use of virtual learning environments, and enforce laboratory safety protocols. Students across programmes express a desire for greater emphasis on English language skills and business or management-related electives to enhance employability. Internal quality assurance processes require improvement, particularly in systematic monitoring, documentation, and responsiveness to student feedback, as current practices result in slow progress on programme enhancements.

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
- Lists of participants and their scientific affiliations during the site visit
- Tour of the educational and research facilities on campus

Additional sources of information used by the review panel:

The following additional sources of information have been used by the review panel:

- Teaching staff list for the Cosmetic Chemistry study programme.
- A video representation of the new research and education facilities was delivered to the evaluation group before the on-site visit.

II. STUDY PROGRAMMES IN THE FIELD

First cycle/LTQF 6

Title of the study programme	**Chemistry**	**Chemistry of Nanomaterials**
State code	6121CX001	6121CX002
Type of study (college/university)	University studies	University studies
Study cycle	First cycle	First cycle
Mode of study (full time/part time) and nominal duration (in years)	Full-time, 4-year studies	Full-time, 4-year studies
Workload in ECTS	240	240
Award (degree and/or professional qualification)	Bachelor of Physical Sciences	Bachelor of Physical Sciences
Language of instruction	Lithuanian	Lithuanian
Admission requirements	High school education	High school education
First registration date	1997-05-19	2011-05-31
Comments (including remarks on joint or interdisciplinary nature of the programme, mode of provision)		

Title of the study programme	**Cosmetic Chemistry**
State code	6121CX020
Type of study (college/university)	University studies
Study cycle	First cycle
Mode of study (full time/part time) and nominal duration (in years)	Full-time, 4-year studies
Workload in ECTS	240
Award (degree and/or professional qualification)	Bachelor of Physical Sciences
Language of instruction	Lithuanian
Admission requirements	High school education
First registration date	2024-01-11
Comments (including remarks on joint or interdisciplinary nature of the programme, mode of provision)	

Second cycle/LTQF 7

Title of the study programme	**Chemistry**	**Nanochemistry and Entrepreneurship**
State code	6211CX003	6211CX004
Study cycle	University studies	University studies
Type of study (college/university)	Second cycle	Second cycle
Mode of study (full time/part time) and nominal duration (in years)	Full-time, 2-year studies	Full-time (2-years)
Workload in ECTS	120	120
Award (degree and/or professional qualification)	Master of Physical Sciences	Master of Physical Sciences
Language of instruction	Lithuanian	Lithuanian, English
Admission requirements	Bachelor's degree or equivalent Bachelor's qualification	Bachelor's degree or equivalent Bachelor's qualification
First registration date	1997-05-19	2011-07-11
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 *chemistry* field of study 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	3
5.	Teaching staff	3
6.	Learning facilities and resources	4
7.	Quality assurance and public information	3
	Total:	24

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

No.	Evaluation Area	Evaluation points[2*]
1.	Study aims, learning outcomes and curriculum	4
2.	Links between scientific (or artistic) research and higher education	5
3.	Student admission and support	4
4.	Teaching and learning, student assessment, and graduate employment	3
5.	Teaching staff	3
6.	Learning facilities and resources	4
7.	Quality assurance and public information	3
	Total:	26

1,2*

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

The number and scope of Chemistry study programmes at Vilnius University are determined by long-standing academic experience, societal and labour market needs, and the University's capacity in terms of qualified staff and resources. Chemistry is a foundational discipline for technological development and industrial growth, which are strategic priorities for Lithuania and the European Union. National and EU policies, including *Lietuva 2030* and the Lithuanian Innovation Development Programme (2021–2030), emphasize strengthening human resources, fostering science-based technologies, and promoting cooperation between academia and industry. These objectives directly align with the aims and learning outcomes of the Chemistry study field, ensuring that graduates contribute to innovation and economic competitiveness.

The study field currently includes three Bachelor's programmes (Chemistry, Chemistry of Nanomaterials, and Cosmetic Chemistry) and two Master's programmes (Chemistry and Nanochemistry and Entrepreneurship). These programmes provide a strong foundation in core chemistry and specialized knowledge in emerging areas such as nanotechnology and cosmetic chemistry, which address growing market demands. Development potential is supported by interdisciplinary flexibility, opportunities for personalized study tracks, and active involvement of research-oriented faculty. Future growth can be achieved through the introduction of new interdisciplinary tracks, integration of entrepreneurship and advanced technologies, and enhanced collaboration with industry to strengthen innovation and meet evolving societal needs.

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

The Chemistry study programmes at Vilnius University are highly relevant to the needs of society and the labour market, both in Lithuania and across the European Union. Chemistry is a key driver of innovation, product development, and quality assurance in numerous sectors, including pharmaceuticals, cosmetics, advanced manufacturing, and environmental management. Europe is the second-largest chemical producer globally, and Lithuania's chemical industry continues to grow, creating significant demand for qualified chemists in research, regulatory compliance, and technology development. Investments in high-tech and cosmetics sectors further emphasize the need for specialists with interdisciplinary knowledge and practical skills.

The learning outcomes of these programmes are designed to correspond to national qualification frameworks and international standards, ensuring graduates acquire competencies aligned with industry expectations. Bachelor's programmes provide a strong foundation in core chemistry and practical laboratory skills, while offering specialization in nanomaterials and cosmetic chemistry to meet emerging market needs. Master's programmes build on this foundation by developing advanced research capabilities and problem-solving skills, with Nanochemistry and Entrepreneurship integrating scientific expertise with business competencies to prepare graduates for innovation and commercialization in global markets.

To maintain relevance, programme aims and outcomes are regularly reviewed and updated in collaboration with social partners, industry representatives, and academic experts. Benchmarking against national and international programmes, monitoring graduate employability, and incorporating feedback from stakeholders ensure continuous improvement. This dynamic approach guarantees that graduates are well-prepared for careers in high-value sectors and contribute to Lithuania's strategic goal of becoming a leading center for innovation in Northern Europe.

The professional activity areas of graduates from Chemistry study programmes at Vilnius University are highly relevant to labour market needs in Lithuania and the EU. First-cycle graduates can pursue careers in chemical laboratories, commercial enterprises, or teaching after completing parallel pedagogical studies, addressing the demand for qualified educators in science. Second-cycle graduates are essential for research institutes and R&D departments in industries such as pharmaceuticals, polymers, cosmetics, nanotechnology, and renewable energy. Their expertise supports innovation, product development, quality assurance, and regulatory compliance, while contributing to environmentally sustainable practices. Employment opportunities span leading companies in Lithuania's chemical and biotechnology sectors, state and private laboratories, and high-tech enterprises, ensuring graduates play a critical role in advancing industrial competitiveness and scientific progress.

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

The Chemistry study programmes are closely aligned with Vilnius University's mission to strengthen cognitive and creative potential, foster academic and social values, and educate responsible citizens and leaders. Programme aims and learning outcomes reflect these principles by emphasizing critical thinking, systematic problem-solving, ethical responsibility, and lifelong learning. Graduates are prepared to address societal challenges and contribute to public discourse, supporting the University's long-term objective of "Creating the society and the state."

The programmes directly implement the strategic priorities outlined in the 2021–2025 plan: improving study quality, strengthening research, investing in staff, and increasing societal impact. Interdisciplinary and international components, such as elective modules across faculties and opportunities for pedagogical qualifications, promote collaboration and global engagement. At the master's level, outcomes focus on advanced research skills, innovation, and interdisciplinary teamwork, aligning with the University's goal of fostering high-level international research and preparing graduates for leadership roles.

By integrating scientific knowledge with practical skills and ethical awareness, the programmes contribute to VU's ambition of producing graduates capable of solving societal problems and influencing policy-making. The inclusion of entrepreneurship-oriented content and international study options further supports the strategic direction of creating a collaborative and sustainable university. This alignment ensures that the study field not only meets academic standards but also advances VU's vision of societal impact and global competitiveness.

ANALYSIS AND CONCLUSION (regarding 1.1.)

The Chemistry study programmes at Vilnius University are strategically aligned with Lithuania's economic priorities and societal needs, as well as with the European Union's innovation agenda. Chemistry is a core discipline underpinning technological development and industrial growth, which are highlighted in national strategies such as *Lietuva 2030* and the Lithuanian Innovation Development Programme (2021–2030). These policies emphasize strengthening human resources, advancing science-based technologies, and fostering collaboration between academia and industry - objectives reflected in the aims and learning outcomes of the programmes. By offering Bachelor's programmes in Chemistry, Chemistry of Nanomaterials, and Cosmetic Chemistry, alongside Master's programmes in Chemistry and Nanochemistry and Entrepreneurship, VU addresses labour market demands for specialists in pharmaceuticals, cosmetics, nanotechnology, and advanced manufacturing. Graduates are equipped with practical laboratory skills, interdisciplinary knowledge, and entrepreneurial competencies, ensuring their contribution to innovation, sustainability, and economic competitiveness.

The programmes also demonstrate strong alignment with Vilnius University's mission and strategic goals of creating a collaborative, sustainable institution that fosters societal impact. Learning outcomes emphasize critical thinking, ethical responsibility, interdisciplinary teamwork, and lifelong learning, preparing graduates to solve complex societal challenges and assume leadership roles. Regular curriculum updates, integration of international and elective modules, and collaboration with

social partners ensure responsiveness to evolving market needs and global trends. At the master's level, the inclusion of entrepreneurship-oriented content and advanced research training supports VU's objectives of promoting high-level international research and innovation. This synergy between national priorities and institutional strategy positions the Chemistry study field as a key driver of scientific progress, industrial competitiveness, and societal development in Lithuania and beyond.

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 Chemistry study programmes at Vilnius University are fully compliant with all relevant national and institutional regulations governing higher education. They are designed and implemented in accordance with the *Description of the Lithuanian Qualifications Framework*, the *Description of General Requirements for the Provision of Studies*, the *Description of Study Cycles*, the *Description of the Chemistry Study Field*, and Vilnius University's Study Regulations. Additionally, the programmes follow the European Chemistry Thematic Network methodology, ensuring alignment with international standards. Both first-cycle and second-cycle programmes meet formal requirements regarding qualification levels, credit allocation, and structural components, guaranteeing that graduates achieve the competencies defined by Lithuanian and European frameworks.

First-cycle (Bachelor) programmes have a total scope of 240 ECTS credits, including at least 120 credits for field-specific modules, a minimum of 15 credits for internship, and 15–20 credits for the final thesis. Second-cycle (Master) programmes comprise 120 ECTS credits, with at least 60 credits allocated to field-specific modules and 30 credits to the final thesis. All course units comply with the requirement that credits are in multiples of five, and the workload per credit corresponds to 25–30 hours of student work. Contact hour ratios and self-study requirements also meet legal standards, ensuring sufficient time for knowledge acquisition and practical skill development. These provisions confirm that the programme structure is adequate for achieving intended learning outcomes.

The curriculum design, content, and teaching/learning methods are carefully structured to enable students to meet programme aims and learning outcomes effectively. Assessment methods are transparent, consistent, and aligned with legal provisions, supporting fair evaluation of student performance. Regular reviews and updates ensure continued compliance and relevance, while the integration of practical training, research components, and elective opportunities fosters professional competence and lifelong learning. Overall, the Chemistry study programmes provide a robust and legally sound framework for delivering high-quality education that meets both national and international standards.

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

The Chemistry study programmes at Vilnius University are designed to ensure coherence between programme aims, intended learning outcomes, and course unit objectives. Each module is mapped to programme-level outcomes through a competence matrix reviewed annually by the Study Programme Committee (SPC). This systematic approach guarantees that learning outcomes correspond to national qualification frameworks and cycle-specific requirements. Teaching and assessment strategies are selected based on Bloom's taxonomy, ensuring that students acquire both subject-specific knowledge and transferable skills necessary for further studies and professional practice.

Teaching methods combine traditional lectures and seminars with laboratory practice, consultations, and research projects, complemented by student-centered approaches such as problem-based

learning, case studies, and project tasks. Laboratory work is integral to all chemistry courses, reinforcing theoretical knowledge through practical application. However, feedback from students indicates a need for more individualized, hands-on experience with modern laboratory equipment and greater use of interactive teaching methods. Additionally, programme structures - particularly in Cosmetic Chemistry - require improved coherence, while clearer differentiation between Chemistry and Nanomaterials Chemistry programmes would enhance academic distinctiveness.

Assessment methods are designed to evaluate diverse learning outcomes through cumulative grading, incorporating interim tasks, laboratory reports, presentations, and final examinations. This ensures comprehensive measurement of knowledge, problem-solving ability, experimental skills, and general competences. Despite this robust framework, students have raised concerns about inconsistencies between workload and ECTS allocation, as well as content overlap between Bachelor's and Master's modules. Addressing these issues through modular restructuring and enhanced curriculum integration would improve efficiency and maintain alignment with programme aims. Continuous review and stakeholder feedback remain essential for ensuring quality and relevance in teaching, learning, and assessment.

1.2.3. Curriculum ensures consistent development of student competences

The Chemistry study programmes at Vilnius University are structured to guarantee systematic development of both subject-specific and general competences throughout the study period. The curriculum is designed with clear links between programme aims, learning outcomes, and course objectives, ensuring coherence and compliance with national and institutional standards. Competences are developed progressively through a balanced combination of theoretical instruction, laboratory practice, and research-based learning. Interactive methods such as case studies, group discussions, and project-based tasks complement traditional lectures, while laboratory sessions strengthen practical skills and scientific reasoning. Assessment strategies, including cumulative grading aligned with Bloom's taxonomy, ensure that students achieve intended learning outcomes across knowledge, analytical skills, and practical competencies.

The curriculum ensures consistent development of student competences through a structured progression that begins with foundational theory and research methods and advances to specialized topics and practical applications. Faculty research actively informs teaching, guaranteeing alignment with current scientific developments and reinforcing the academic rigor of the programmes. Competence mapping is systematically maintained through annual reviews by the Study Programme Committee, ensuring balanced coverage of all learning outcomes across modules. A diverse range of teaching methods - including lectures, seminars, laboratory work, and student-centered approaches such as problem-based learning and case studies - fosters critical thinking, analytical ability, and problem-solving skills. Assessment practices are transparent and multi-component, incorporating reports, presentations, and examinations to comprehensively evaluate both subject-specific knowledge and transferable skills, thereby supporting the achievement of programme aims and preparing graduates for further studies and professional careers.

The curriculum effectively supports competence development through its structured design, integration of research, and diverse teaching and assessment methods. However, areas for improvement include addressing inconsistencies in workload versus ECTS allocation, reducing content overlap between Bachelor's and Master's modules, and enhancing interactive, hands-on learning experiences. Cosmetic Chemistry and Nanomaterials Chemistry programmes would benefit from a more modular approach to improve coherence and resource efficiency. Overall, the curriculum demonstrates strong alignment with academic standards and labour market needs, but continuous refinement is necessary to maintain relevance and optimize student learning outcomes.

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

Students at Vilnius University have substantial opportunities to personalize their studies through various mechanisms, including individual study plans, participation in academic exchange programs,

internships, foreign language courses, and minor studies. These options enable students to align their learning with personal interests and career goals.

The allocation of credits for personalized learning has significantly increased since 2023. Undergraduate students now have up to 60 credits dedicated to individual studies, allowing them to select modules from their field of study, interdisciplinary modules, general university studies, and complementary internships. Additionally, up to 75 credits can be chosen freely across different institutes and faculties, which represents a notable enhancement compared to the pre-2023 structure.

In first-cycle programs prior to 2023, personalization was more limited, with only 15 credits allocated to general university studies and elective courses primarily focused on narrow specialization. The recent reforms have markedly expanded flexibility for undergraduate students.

Second-cycle programs remain more specialized in content and structure; however, personalization is achieved through elective courses and mandatory research projects. Students in these programs can prepare individual study plans and select relevant courses to complement their specialization.

The university's procedure for recognizing competences acquired through non-formal education or self-education further supports individual learning needs and promotes lifelong learning principles. This recognition broadens opportunities for students to integrate informal learning into formal academic pathways.

Despite these advancements, the degree of personalization varies by study cycle. Undergraduate programs offer extensive flexibility, whereas graduate programs provide moderate opportunities primarily through electives and research activities. Additionally, personalization often requires proactive student engagement and administrative approval, which may pose procedural challenges.

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

The preparation and defence of final theses at Vilnius University are governed by a robust regulatory framework that ensures consistency, transparency, and compliance with academic standards. Institutional documents, faculty-level guidelines, and practical instructions clearly define thesis structure, submission procedures, plagiarism checks, and defence protocols. These measures safeguard academic integrity and create a structured environment for students to demonstrate their research competence and achieve intended learning outcomes.

Final theses serve as capstone components for both Bachelor and Master programmes, reflecting progressive levels of complexity and independence. Bachelor theses emphasize foundational research skills, subject-specific knowledge, and structured supervision, culminating in public defence before qualified committees. In contrast, Master theses require advanced methodological sophistication, scientific novelty, and autonomy, supported by multi-semester research activities and evaluation by external experts. Comprehensive assessment methods like including written work, oral presentation, and independent reviews, ensure rigorous evaluation of students' ability to articulate objectives, apply methodologies, and present evidence-based conclusions.

Academic integrity and scientific relevance are reinforced through systematic plagiarism detection, ethical oversight, and strong links to faculty research projects and industry collaborations. Many Master theses contribute to peer-reviewed publications or commercialization initiatives, confirming their technological and professional significance. Together, these elements demonstrate that Vilnius University's thesis process fully aligns with national and European standards, fostering research excellence, critical thinking, and innovation across all study cycles.

During the evaluation, five randomly selected final theses from each study cycle and programme were analysed. The review revealed that the works are prepared in a technically accurate and well-structured manner. The methodologies applied are appropriate and comprehensive, and modern analytical instruments were employed in all cases, demonstrating compliance with the technological

standards of the chemistry field. The selected research topics are relevant and reflect contemporary scientific challenges and societal needs within the discipline of chemistry.

However, considering current trends in globalization and the emphasis on internationalization in higher education, a stronger integration of international cooperation would be beneficial. Although the University provides opportunities and resources for academic mobility and actively collaborates with foreign institutions through Erasmus programmes and internship schemes, systematic efforts to embed these opportunities into thesis preparation could further enhance the Faculty of Chemistry's position in the international academic landscape. Increased international collaboration would facilitate the exchange of knowledge and best practices, accelerate the development of research areas, and contribute to the advancement of study quality and scientific innovation.

ANALYSIS AND CONCLUSION (regarding 1.2.)

The Chemistry study programmes at Vilnius University fully comply with national and institutional legal requirements, including Lithuanian study cycle descriptors and chemistry field standards, while also aligning with European benchmarks. Programme structures meet formal credit and workload regulations, ensuring systematic competence development through a coherent curriculum that integrates theoretical instruction, laboratory practice, and research-based learning. Teaching and learning methods combine lectures, seminars, and extensive laboratory work with interactive approaches such as problem-based learning and case studies, fostering critical thinking and practical skills. Assessment strategies are transparent and enable comprehensive evaluation of subject-specific knowledge, hands-on competences and transferable skills. The final thesis process is rigorously regulated, serving as a capstone for achieving programme aims and demonstrating compliance with cycle-specific requirements. Bachelor theses confirm foundational research competence, while Master theses exhibit scientific novelty and independence, supported by plagiarism checks, structured supervision, and evaluation by qualified committees. Opportunities for personalization, mobility, and interdisciplinary learning further enhance student engagement and lifelong learning.

Overall, the programmes provide a legally sound and academically robust framework that effectively supports achievement of study aims and learning outcomes. While strong compliance and pedagogical quality are evident, areas for improvement include addressing workload-ECTS inconsistencies, reducing content overlap between cycles, enhancing interactive and hands-on experiences, and systematically integrating international collaboration into thesis preparation. These refinements would strengthen global competitiveness and optimize student learning outcomes.

AREA 1: CONCLUSIONS

AREA 1	Unsatisfactory - 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			X		
Second cycle				X	

COMMENDATIONS

1. The Chemistry programmes fully comply with Lithuanian and European legal requirements and align with national priorities to strengthen the chemical industry, ensuring structural integrity and relevance to labour market needs.

2. The curriculum emphasizes deep fundamental knowledge and progressive competence development through theoretical instruction, laboratory practice, and research activities, supported by interactive teaching methods and transparent, multi-component assessment strategies

3. Final theses and research components demonstrate strong scientific rigor and technological relevance, while systematic integration of international collaboration and mobility opportunities would further enhance global competitiveness and innovation.

RECOMMENDATIONS

To address shortcomings

1. Restructure logic by consolidating first-cycle programmes into a unified Chemistry degree focused on fundamentals and use second-cycle studies for specialization tracks such as Nanochemistry or Cosmetic Chemistry. Unify the three existing Bachelor programmes into a single, broader Chemistry programme to provide deeper, more comprehensive competences and reduce content overlap. Introduce clear specialization tracks at the second cycle (e.g., Cosmetic Chemistry) to align with strategic goals, rationalize resources, and enhance career opportunities.

2. Develop a long-term vision that incorporates interdisciplinary modules and pathways, ensuring coherence between first-cycle fundamentals and second-cycle specializations. Align Master's programmes more closely with doctoral studies to foster a stronger research and educational portfolio, creating multiple career options for graduates.

3. Simplify overlapping content, adopt modular structures for specialized programmes, and improve workload-ECTS consistency. Combine these changes with targeted outreach and marketing strategies to attract a diverse student body and increase international visibility, leveraging mobility programmes and partnerships.

For further improvement

1. Advance instrumental training by introducing core instrumental analysis earlier in the first cycle to meet labour market expectations and certify basic instrument competencies.

2. Integrate real business practice to strengthen the Nanochemistry & Entrepreneurship programme with case-based learning and company-cooperative projects covering technical and business operations.

3. Embed meta-skills - such as communication, teamwork, critical thinking, and problem-solving - into programme learning outcomes and make them visible in curricula. Map and assess these competences within modules through practical activities (e.g., group projects, presentations, interdisciplinary tasks), while streamlining content to reduce overlap and refining timelines to avoid assessment overload.

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 linkage between research and studies at Vilnius University's Faculty of Chemistry and Geosciences is strong and systematically embedded, indicating that the research base is sufficient to underpin the curriculum. Courses are delivered by active researchers with a high publication output in internationally recognized journals, and recent scientific advances are directly integrated into compulsory and elective modules. Students are involved in laboratory-based research from the outset, with particularly high standards observed in second-cycle theses, and they benefit from fellowships and industry-supported opportunities. This research-led model ensures that teaching content reflects current developments in chemistry and related technologies rather than static materials.

Quantitative and qualitative indicators further substantiate the sufficiency of the research environment. The faculty recorded 376 Web of Science-indexed publications in 2021–2023, up from 291 in 2018–2020, with 186 in Q1 journals and 52 in D1 journals, demonstrating sustained output and quality at the top tier. External benchmarking shows improvement in QS World University Rankings in Chemistry (from top 600 in 2023 to 501–550 in 2024), and the national comparative expert assessment (LMT, 2018–2022) awarded consistent 3.5 scores across the quality, impact, and development potential dimensions. The faculty has acted on panel recommendations by increasing PhD internationalization and mobility (79 visits, 20 long-term), strengthening collaborations (e.g., with VU's Life Sciences Center and Faculty of Physics, FTMC), expanding participation in international projects, and securing external funding (41 projects).

Areas for further enhancement are clearly identified and actively addressed. Experts noted that broad topic dispersion and limited coordination across Lithuanian units constrain the attainment of critical mass and international visibility in some subfields. The Faculty's response on focused research areas, deepening cross-unit collaboration, recruiting more international PhD students, and incentivizing high-impact outputs and patenting (three applications filed) is well-endowed. Continued consolidation of research themes, growth in industry-oriented outputs (including patents and joint projects), and systematic mapping of course learning outcomes to research competencies will further strengthen the integration. Overall, the evidence supports that the research level is sufficient and increasingly robust to sustain a contemporary, research-driven curriculum, while targeted focus and coordination can elevate competitiveness and impact.

Vilnius University demonstrates a strong research performance in the field of chemistry (N003), as confirmed by annual evaluations conducted by the Lithuanian Science Council. The university consistently achieved outstanding overall scores and the highest points per scientist among the institutions assessed, reflecting both the quality and productivity of its research activities. Comparative expert assessments further indicate that the level of research carried out at Vilnius University is fully adequate to support advanced studies and maintain its leading role in the development of the chemistry field nationally. These results affirm that the university's research base is robust and provides a solid foundation for integrating cutting-edge scientific knowledge into its study programs.

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

The curriculum at Vilnius University demonstrates a strong integration of research activities with teaching, ensuring alignment with the latest developments in science and technology. Courses are delivered by highly qualified academic staff, the majority of whom hold scientific degrees and actively publish in internationally recognized journals. Their research findings are incorporated into both compulsory and elective modules, such as Biochemistry and Organic Chemistry, which include recent advancements in genome analysis, epigenetics, organic synthesis, and supramolecular chemistry. This approach guarantees that students receive up-to-date knowledge rather than relying solely on traditional textbook content.

Research integration extends beyond theoretical instruction to practical and project-based learning. Students gain hands-on experience with advanced analytical techniques and specialized equipment, including FT-IR, NMR, LC/MS, and GC/MS, during laboratory sessions and thesis preparation.

Bachelor's and Master's theses are closely aligned with faculty research interests, and students frequently contribute to scientific publications and participate in national and international research projects. Seminars and workshops further reinforce this connection by requiring students to analyze and present recent research articles, fostering critical thinking and familiarity with contemporary scientific developments.

The relevance of the curriculum is maintained through systematic updates and quality assurance processes. Coordinating lecturers regularly review and revise course descriptions, reading lists, and supplementary materials to reflect current research trends and technological innovations. The Study Program Committee evaluates the novelty and research integration of modules during approval or revision stages. Additionally, students engage with recent scientific literature through presentations, term papers, and comprehensive literature reviews, which form key assessment criteria. These measures collectively ensure that the study programs remain research-driven, technologically advanced, and aligned with global scientific progress.

Participation in research groups and collaborative projects with external partners provides students with valuable practical experience, exposure to advanced technologies, and opportunities to apply theoretical knowledge to real-world challenges. These activities enhance technical skills, foster critical thinking, and often lead to co-authorship of scientific publications and involvement in high-profile conferences. By working alongside leading academic and industry experts, students gain professional networks and insights into current scientific and technological developments, significantly improving their academic outcomes and career prospects.

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

Students at the Faculty of Chemistry and Geosciences are introduced to research opportunities from the beginning of their studies and are encouraged to join research groups early. Many students begin participating in research projects as early as their second year, initially performing basic tasks to become familiar with laboratory equipment and methods. Over time, they progress to independent research activities, which frequently serve as the foundation for their final theses. This structured approach ensures that students gradually develop the skills and competencies required for advanced scientific work.

The faculty provides extensive opportunities for international mobility and collaboration. Students can participate in exchange programs such as Erasmus+ and Arqus Alliance, as well as benefit from scholarships offered by external institutions, including Taiwan's TEEP program. Research placements are also available in partner organizations and companies, such as FTMC, Thermo Fisher Scientific Baltics, and Sanobiotec, which allow students to gain practical experience in diverse research environments. These opportunities significantly enhance students' academic development and global exposure.

For Master's students, engagement in laboratory research is mandatory from the first semester, ensuring full participation in scientific activities. Many continue research topics initiated during their first-cycle studies, publish scientific papers, and may qualify for distinctions such as the Magna Cum Laude diploma. Institutional support further strengthens research involvement, with financial assistance provided through the Research Council of Lithuania. Between 2021 and 2023, 49 funded applications supported student research, including 15 summer internships and 34 semester projects. These measures collectively create a highly supportive environment that promotes research excellence and prepares students for successful careers in chemistry and related fields.

Across 2020–2024, first-cycle student involvement in research is stable and moderate, averaging 22.9% (range 22.3–23.3%), which corresponds to approximately 9–10 students per cohort and minimal year-over-year variation, indicating consistent participation. By contrast, second-cycle engagement is higher but more volatile, averaging 45.6% with wide fluctuations (30.0–70.5%) driven by small and varying cohort sizes, yielding around 11 students involved per year on average and an aggregate of approximately 45 across the period. Combined across both cycles, there are 248 students in total and an estimated 81 involved in research, resulting in a weighted average involvement rate of 32.5%; accordingly, priorities should include sustaining the second cycle's higher

participation while stabilizing its variability and incrementally raising first-cycle involvement above the ~23% plateau.

ANALYSIS AND CONCLUSION (regarding 2.1.)

The research conducted at Vilnius University's Faculty of Chemistry and Geosciences is at a sufficient and robust level to support research-based higher education in chemistry. Evidence shows strong integration of research into teaching, with courses delivered by active researchers who publish in high-impact international journals and embed recent scientific advances into the curriculum. Students are involved in laboratory research from the beginning of their studies, and second-cycle theses demonstrate particularly high standards. Furthermore, the faculty actively addresses expert recommendations through internationalization, mobility, collaboration, and patenting initiatives. Overall, the research environment is sufficiently advanced to sustain a contemporary, research-driven curriculum and provides a solid foundation for integrating cutting-edge scientific knowledge into higher education.

The links between research and education at Vilnius University's Faculty of Chemistry and Geosciences are strong and systematically embedded, ensuring that the curriculum remains aligned with the latest developments in science and technology. Courses are taught by active researchers who publish in high-impact journals and integrate their findings into both compulsory and elective modules, while practical learning is reinforced through laboratory sessions using advanced analytical techniques and equipment. Students engage in research from early stages of their studies, progressing to independent projects and theses closely aligned with faculty research interests, often contributing to publications and participating in international projects. Institutional mechanisms, such as regular curriculum updates, quality assurance processes, and opportunities for mobility and collaboration with industry partners, further strengthen this integration. Overall, the evidence demonstrates that research activities are deeply interwoven with teaching, providing students with up-to-date knowledge, practical skills, and exposure to cutting-edge scientific advancements, thereby supporting a research-driven higher education environment.

Overall, the faculty provides a robust and dynamic research foundation that ensures a contemporary, research-driven learning experience aligned with global scientific developments.

AREA 2: CONCLUSIONS

AREA 2	Unsatisfactory - 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				X	
Second cycle					X

COMMENDATIONS

1. The Faculty of Chemistry and Geosciences maintains a strong research-teaching integration, with active researchers embedding cutting-edge findings into courses and providing students with early and structured research involvement.
2. High publication output, international collaborations, and consistent national evaluation scores confirm that the research level is sufficient to sustain a research-driven curriculum and support advanced studies in chemistry.

3. Opportunities for practical training, thesis alignment with faculty research, and mobility programs ensure that students gain relevant skills and exposure to global scientific developments, enhancing both academic quality and career readiness.

RECOMMENDATIONS

To address shortcomings

None

For further improvement

1. Ensure a better balance between research excellence and educational priorities by strengthening support for teaching quality and student-centred learning alongside research achievements. Align career development, funding strategies, and institutional culture to value both research and pedagogical effectiveness equally.

2. Increase first-cycle research participation by developing targeted initiatives, such as early research internships and structured mentoring, to raise first-cycle student involvement above the current ~23% plateau.

3. Enhance international visibility and focus to consolidate research themes to build critical mass in priority areas and expand high-impact collaborations to strengthen global competitiveness.

4. Promote industry-oriented outputs to intensify partnerships with industrial and social stakeholders to generate more applied research projects, patents, and technology transfer opportunities for students.

AREA 3: STUDENT ADMISSION AND SUPPORT

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

FACTUAL SITUATION

Admission to the Chemistry study field at Vilnius University follows national regulations and is carried out through the centralised LAMA BPO system for bachelor programmes, while master's studies use the University's internal admission platform. Admission requirements, competitive score components, subject prerequisites, and criteria for state-funded and non-funded places are publicly available on institutional websites and national admission portals.

Across the evaluation period, the number of applicants fluctuated in line with national demographic trends and varying popularity of chemistry-related fields. Traditional chemistry programmes attract stable interest, while more recent interdisciplinary programmes, such as the Chemistry of Nanomaterials and Cosmetic Chemistry, show more variability. The SER indicates that admitted students enter with sufficiently strong academic backgrounds in mathematics, chemistry, and natural sciences, though differences in prior preparation occasionally require additional academic support during the first study year.

The University provides clear information on admission procedures through faculty websites, public outreach events, school visits, and online consultations as well as social media platforms. International applicants receive guidance through VU International Relations Office, which supports document submission, recognition of foreign qualifications, and integration into academic studies to make sure students encounter no problems regarding integration into a new academic environment. Recognition of foreign credentials and prior learning is implemented according to VU regulations, which follow national frameworks and ensure transparent and consistent decision-making.

Dropout monitoring is carried out at Faculty level. According to SER, student withdrawal is most common during the first year and is addressed through individual consultations, academic advising, and proactive communication with at-risk students. Following the collection of statistical data, study programme committees are responsible for analysing dropout reasons and proposing curriculum or support improvements. The institutional system ensures clear, accessible, and standardised admission procedures, which align with programme learning outcomes and promote equal access to studies.

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

The student selection and admission criteria applied by the Faculty of Chemistry and Geosciences are clearly defined and consistently implemented, ensuring that admitted students meet or exceed the minimum academic requirements. The average admission grade for first-cycle programs remains above 7.5, with the highest grades exceeding 10 due to additional achievements, which demonstrates that entrants are academically prepared and motivated. State-funded places constitute the primary mode of admission, reflecting both accessibility and fairness, while non-state-funded places are limited and attract only a small number of candidates due to comparatively high tuition fees. The option for students in non-state-funded places to transfer to state-funded positions after the first semester, when vacancies arise, further illustrates the flexibility and equity embedded in the admission process.

Admission requirements and procedures are systematically published and widely disseminated through official university channels, including the institutional website, national admission platforms such as LAMA BPO and AIKOS, and various promotional initiatives. These include school visits, study fairs, social media campaigns, and interactive programs such as “Student for One Day” and the Young Chemists’ Laboratory, which collectively ensure that prospective students receive accurate and comprehensive information. The Faculty’s proactive engagement in outreach activities, including preparatory lectures and extracurricular programs, reinforces transparency and helps prospective applicants understand both the academic expectations and the opportunities available within the field of chemistry.

Although enrolment in certain programs, such as Chemistry and Chemistry of Nanomaterials, has declined in recent years, these trends are attributable to external factors rather than deficiencies in admission procedures. The decline in Chemistry program admissions from 34–37 students in previous years to 23 students in 2023 reflects documented European trends of reduced interest in pure sciences, demographic shifts, and growing competition from interdisciplinary programs. Similarly, the decline in Master’s program enrolments following 2020 reflects pandemic-related disruptions and labour market dynamics, including employment opportunities that diverted graduates from postgraduate studies. Despite these challenges, the admission system remains robust, transparent, and aligned with academic standards, ensuring that student selection continues to uphold quality and fairness. Notable, according to SER, the intake to Master-level studies is overwhelmed by in-house students from the preceding Bachelor-level graduates.

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

Recognition of foreign qualifications at Vilnius University (VU) is centralized and managed by designated administrative units in strict compliance with national legislation and institutional procedures. The process operates under the authority granted by the Minister of Education, Science and Sports of the Republic of Lithuania and adheres to international standards, including the Lisbon Recognition Convention. Applicants are provided with clear and comprehensive information regarding documentation requirements, evaluation stages, and expected timelines. According to the Self-Evaluation Report (SER) and student feedback, decisions are made consistently and without significant delays, confirming the efficiency and reliability of the system.

VU enables the recognition of prior learning, including formal, non-formal, and informal learning, through established regulations applicable for both admission and credit transfer. Study periods completed abroad are recognized through pre-arranged learning agreements, ensuring smooth

credit transfer upon return. Students participating in international mobility programs have reported no difficulties with credit recognition, indicating that the procedures function effectively and support academic continuity. These practices demonstrate that the system is transparent, student-oriented, and aligned with the principles of fostering mobility and diverse entry pathways.

The University provides detailed information on recognition procedures, required documentation, and application processes through its official website and related platforms, ensuring accessibility for all applicants. Recognition decisions are evidence-based and individualized, assessing whether foreign qualifications or prior learning outcomes meet Lithuanian academic standards. To maintain academic rigor, VU applies clear limits: up to 75% of a program may be credited for prior formal studies and up to 50% for non-formal or informal learning, excluding final theses and examinations. These provisions safeguard quality while offering flexibility. Overall, VU's recognition framework is legally grounded, transparent, and academically sound, ensuring fairness and consistency in all recognition processes.

ANALYSIS AND CONCLUSION (regarding 3.1.)

Admission procedures for the Chemistry study field at Vilnius University are well-structured, transparent, and fully aligned with national regulations and programme learning outcomes. Bachelor-level admissions are conducted through the centralized LAMA BPO system, while master's admissions use the University's internal platform, ensuring consistency and fairness. Admission requirements, competitive score components, and criteria for state-funded and non-funded places are publicly accessible on institutional websites and national portals, complemented by extensive outreach activities such as school visits, fairs, and online consultations. International applicants receive dedicated support for document submission and qualification recognition, and mechanisms such as transfers from non-state-funded to state-funded places further enhance equity. The use of standardized competitive scores and clear communication ensures equal access and maintains the quality of entrants, who generally demonstrate strong academic preparation.

Recognition of foreign qualifications, periods of study, and prior learning is centralized, legally grounded, and aligned with international standards, including the Lisbon Recognition Convention. Procedures are evidence-based, individualized, and clearly communicated through official platforms, with defined limits to preserve academic rigor: up to 75% of a programme may be credited for prior formal studies and up to 50% for non-formal or informal learning. Students report smooth credit transfers for mobility periods, confirming that the system supports academic continuity and diverse entry pathways. Overall, the panel concludes that admission and recognition processes at VU are robust, transparent, and student-oriented, with only minor improvements recommended - such as strengthening orientation activities or introducing bridging modules - to address variability in prior preparation and further facilitate successful academic progression.

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

FACTUAL SITUATION

Vilnius University provides a well-structured academic support system for students in the Chemistry study field, ensuring guidance throughout the entire study cycle. Support measures include orientation events, student mentoring programs, consultations with lecturers and program coordinators, and access to laboratory supervisors during practical and research activities. Students are informed about program structures, assessment procedures, and learning outcomes at the beginning of their studies and receive ongoing assistance during the semester. Learning resources are comprehensive and discipline-specific, comprising shared chemistry laboratories, an open-access creativity centre, active research groups, library services, and virtual learning tools. Furthermore, the planned completion of a new faculty building by 2026 will significantly enhance laboratory capacity and create additional opportunities for advanced project-based learning.

Financial support is provided through merit-based and social scholarships, one-time allowances, mobility grants, and targeted assistance for students with disabilities. To reduce the financial burden for non-state-funded students, tuition fees can be paid in instalments when necessary. Social support is reinforced through mentoring systems, student organizations, and non-formal education activities that foster a sense of community and engagement. Career development services are coordinated by the VU Career Centre, which offers consultations, job fairs, and employer networking opportunities, enabling students to make informed decisions regarding their professional paths and future employment.

Psychological support is accessible through VU counselling and psychological services, which provide free individual consultations and group sessions. In addition to these formal services, administrative staff, mentors, and lecturers offer personal guidance when needed, ensuring multiple points of contact for students who may require assistance. These measures collectively create a supportive environment that addresses academic, social, financial, and emotional needs, enabling students to maximize their learning progress and successfully complete their studies.

3.2.1. Opportunities for student academic mobility are ensured

Study programmes of the chemistry field offer students multiple forms of international mobility, such as semester-long Erasmus+ exchanges, internships abroad, bilateral partnerships, summer schools, and blended intensive programmes. Information about mobility opportunities is regularly published on the University website, Moodle platform, and through direct communication from mobility coordinators. Crucially, students receive individual support when completing mobility applications, preparing learning agreements, and transferring credits upon return and have expressed no concerns regarding credit transfer assessment in their experience.

Participation rates in mobility programmes vary across study programmes, for example chemistry study programme students engage in mobility more regularly, while students in Chemistry of Nanomaterials participate less frequently, one of the reasons for that could be scheduling constraints and stricter attendance requirements applied in these particular programmes. Some students reported that mobility is difficult to plan when several major laboratory modules run in consecutive semesters. Despite participation differences, all structural conditions for mobility are in place, credit transfer procedures are clear, and all students report smooth academic reintegration upon return from mobility programmes.

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

Academic support is provided consistently through consultations, feedback sessions, and meetings with programme committees, where a student representative is also involved. Lecturers introduce expected learning outcomes during the first lecture of the semester and provide ongoing guidance, including additional consultations before certain assessments or during laboratory projects. Some mentioned that particular programmes actively integrate research-oriented support, including involvement in research groups and consultations with project supervisors. Students reported good access to laboratory supervisors and valued the professionalism of teaching staff, although certain courses were described as overly intensive or having overlapped theoretical content - this leads to organisational shortcomings regarding the planning of study curriculum.

As well as academic, financial support mechanisms are comprehensive - students may receive merit scholarships, increased scholarships for high academic achievements, social scholarships, targeted support for disabilities, and grants for mobility. A significant proportion of students also benefit from state-funded study places.

Social support includes mentoring systems, faculty-level coordination, integration activities, and participation in student clubs and scientific societies. Interdisciplinary programmes such as Cosmetic Chemistry benefit from broader cross-faculty academic environments, though students noted uneven involvement of staff across faculties, leading to academic difficulties for students.

Psychological and personal support is provided through VU's central counselling service, offering free personal consultations as well as therapeutic group sessions, and preventive mental health initiatives. Students may also receive personalised guidance from lecturers and administrative staff regarding academic difficulties, study planning, or future career progression, which is an important factor in overall well-being of students at VU.

3.2.3. Higher education information and student counselling are sufficient

Information about programmes, curriculum structure, assessment rules, and study progression is available through multiple channels, such as faculty websites, the intranet, the virtual learning environment, orientation weeks, and programme committee meetings etc. Students receive structured information at programme introductions during the first lecture and ongoing updates during the semester.

The Faculty systematically collects student feedback twice per year, at the end of each semester, which are later discussed by the study programme committee and the results are presented back to the students in a systematic way. Teaching staff are evaluated every five years, and student evaluations are part of this appraisal. The University's Education Centre provides training opportunities for lecturers in teaching methods, learning design, and digital pedagogy.

Students indicated that counselling is generally effective, however, a good number of students pointed out some flaws regarding the curriculum architecture. Such problems include several exams clustering in one week therefore creating stress and could benefit from improved coordination or earlier communication. Another example of curricular imperfections is the fact that the workload of some of the study modules far exceeds the amount of hours dedicated for it. Such instances are with analytical chemistry in particular - most of the students expressed this concern and also pointed out that the problem has been hovering for years, which leads to conclude not only a flaw in curriculum design but also in the way changes are adapted and the voice of the students is heard. Another important point to raise is that the distinction between *Chemistry* and *Chemistry of Nanomaterials* is not very clear. *Chemistry of Nanomaterials* study programme students expressed a desire to have more nanoscience and nanomaterial related topics in their studies, since these topics were only present for the first year of their studies.

Social partners also noted that graduates would benefit from more systematic guidance in the development of entrepreneurship, soft skills, and knowledge of regulatory frameworks, indicating potential areas for enhancement in counselling systems.

ANALYSIS AND CONCLUSION (regarding 3.2.)

The expert panel concludes that Vilnius University provides a broad, well-developed, and institutionally mature student support system for the Chemistry study field, meeting the requirements and contributing positively to students' academic progress, well-being, and preparation for professional careers. Students benefit from extensive academic consultations, access to high-quality laboratory infrastructure, well-established psychological services, diverse financial support mechanisms, and structured career guidance. The University's mechanisms for collecting and responding to student feedback demonstrate a clear institutional culture of continuous improvement. Strong research environments within the Faculty of Chemistry and Geosciences and interdisciplinary collaboration with other VU faculties create valuable opportunities for the development of research competencies. Students particularly value access to laboratory supervisors and the openness of staff to provide personalised academic guidance. Support structures such as mentoring, tutoring, and the Career Centre further enhance student integration and career planning.

Nevertheless, the analysis also reveals several areas where support effectiveness is constrained by organisational or curricular issues rather than by the availability of services. Students consistently reported examples of uneven study workloads, such as analytical chemistry modules with excessive demands relative to assigned ECTS, overlapping content across multiple courses, and instances where several examinations are scheduled within the same week. These recurring patterns indicate

shortcomings in curriculum coordination and suggest that feedback mechanisms, although formally in place, are not always translated into timely curricular adjustments.

In interdisciplinary programmes, such as Chemistry of Nanomaterials and Cosmetic Chemistry, students reported challenges related to uneven engagement of academic staff from different faculties and insufficient integration of specialised content. This leads to uncertainty regarding programme identity and contributes to academic difficulties. While these issues do not undermine the availability of support mechanisms, they do reduce their perceived effectiveness and may hinder the full realisation of programme learning outcomes.

International mobility opportunities are structurally well supported, with clear application processes and smooth credit recognition; however, participation remains uneven across programmes. Laboratory-intensive curricula and rigid module scheduling limit students' practical ability to benefit from mobility, suggesting a need for more flexible curriculum planning or additional mobility windows.

Feedback from social partners further highlights the need to strengthen student support in the development of entrepreneurship, regulatory awareness, and soft skills such as teamwork, problem-solving, and communication. While such competencies are present indirectly within programmes, more systematic integration - supported by targeted counselling or co-curricular activities - would better align graduates' skills with labour market expectations.

Overall, the panel evaluates student support in both the first and the second cycle of the Chemistry field at VU as very good. The support infrastructure is comprehensive, accessible, and well-functioning, and students confirm its general effectiveness. Targeted improvements - particularly in curriculum coordination, responsiveness to recurring student concerns, interdisciplinary programme coherence, and support for soft-skills development - would further enhance student experience and maximise learning progress across all study programmes.

AREA 3: CONCLUSIONS

AREA 3	Unsatisfactory - 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				X	
Second cycle				X	

COMMENDATIONS

1. The admission and recognition systems at Vilnius University are highly structured, transparent, and aligned with national and international standards, ensuring fairness and academic integrity for all applicants.
2. Student support services are comprehensive and effective, covering academic, financial, social, psychological, and career needs, and are reinforced by strong research environments and mobility opportunities. These mechanisms significantly contribute to student success and well-being across both study cycles.

To address shortcomings

None

RECOMMENDATIONS

For further improvement

1. While the overall framework is robust and rated very good, recurring issues in curriculum coordination, interdisciplinary programme coherence, and soft-skills development highlight areas for improvement. Addressing these gaps would enhance the student experience and better align outcomes with labour market expectations.

2. Develop systematic training for academic and administrative staff to strengthen intercultural communication skills and teaching in English, ensuring that international students receive high-quality support and inclusive learning experiences.

3. Establish structured partnerships with industry and social partners to inform recruitment strategies and align study programs with labour market needs. Integrate student-centered teaching methods and diversify learning approaches to foster active engagement and adaptability.

4. Increase faculty-level support for extracurricular initiatives such as entrepreneurship workshops, soft-skills development, and interdisciplinary projects. These activities should complement formal studies and enhance students' readiness for global careers and innovation-driven environments.

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

The teaching and learning approach in the described programmes demonstrate a strong alignment with student needs by integrating theoretical knowledge with practical application. The curriculum is structured to balance lectures, seminars, laboratory work, projects, and internships, ensuring that students acquire both subject-specific expertise and transferable skills. Opportunities for personalization, such as elective courses and individual study plans, further support student motivation and career readiness. The inclusion of research-based teaching and modules on academic literacy and data analysis reflects responsiveness to the evolving demands of the labour market and scientific progress, thereby preparing students for diverse professional contexts.

The programmes employ a student-centred paradigm that emphasizes active engagement, independent learning, and responsibility for personal progress. Coherence between learning outcomes, teaching methods, and assessment is maintained through approved course descriptions and cumulative evaluation systems. Interactive methods such as case studies, simulations, and flipped classrooms foster critical thinking, problem-solving, and decision-making in complex situations. Regular feedback and consultations, both in-person and online, ensure continuous monitoring of student progress. These practices collectively enable students to achieve intended learning outcomes by developing analytical, practical, and communication skills essential for professional independence.

Experiential learning through internships and research projects plays a pivotal role in bridging academic knowledge with real-world application. Internships, supported by partnerships with leading institutions and formalized through structured agreements, cultivate professional competencies such as teamwork, ethical reasoning, and adaptability. The preparation of final theses and integration of research tasks across modules further enhance students' ability to plan, conduct, and present

scientific work. Additionally, the successful adaptation to distance learning during the COVID-19 pandemic demonstrates institutional flexibility and commitment to maintaining quality education under challenging circumstances. These elements collectively ensure that teaching and learning not only meet student needs but also equip graduates with the skills required for lifelong learning and career success.

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

Vilnius University operates under the Diversity and Equal Opportunities Strategy 2020–2025, which sets clear objectives for promoting accessibility, inclusion, and non-discrimination within the academic environment. The strategy addresses key areas such as disability support, gender equality, cultural diversity, and social vulnerability, ensuring that students with individual needs can fully participate in the study process. Practical measures include adapting physical spaces, providing compensatory equipment, and enabling individualized study plans tailored to specific requirements. These initiatives reflect the University's commitment to creating an inclusive learning environment aligned with international best practices.

Students requiring special accommodations can study according to individualized plans based on specialist recommendations. The Disability Affairs Coordinator plays a central role in assessing needs, advising faculties, and ensuring that teaching and assessment methods are appropriately adapted. Common adjustments include accessible learning materials, timetable flexibility, extended assessment time, and alternative formats for assignments. During the analysis period, one Chemistry field student utilized an individualized study plan, demonstrating the practical implementation of these measures. Additional support is provided through faculty contact persons and student volunteers, who assist with orientation and academic tasks, further strengthening the inclusivity of the study process.

Beyond disability-related adaptations, Vilnius University offers a wide range of services to socially vulnerable students, including academic counselling, career guidance, mentoring, psychological support, and financial assistance. Scholarships and one-off social grants help mitigate economic barriers, while integration support at the start of studies facilitates smooth adaptation for international and disadvantaged students. Special provisions have been made for students affected by geopolitical crises, such as Belarusian and Ukrainian students, ensuring continuity of education under exceptional circumstances. These combined measures demonstrate a holistic approach to equity and inclusion, enabling all students to access higher education and succeed academically.

ANALYSIS AND CONCLUSION (regarding 4.1.)

The teaching and learning approach at Vilnius University demonstrates a high level of effectiveness in meeting student needs and achieving intended learning outcomes. The curriculum is comprehensive and well-balanced, integrating theoretical knowledge with practical application through lectures, seminars, laboratory work, projects, and internships. Student-centered methods, including interactive learning and personalized study options, foster critical thinking, problem-solving, and independent learning. Research integration and experiential opportunities further enhance professional competencies, while the successful adaptation to distance learning during the COVID-19 pandemic reflects institutional resilience and commitment to quality education. These measures collectively ensure that graduates possess both subject-specific expertise and transferable skills essential for lifelong learning and career success.

Vilnius University maintains a strong commitment to inclusivity and equal access through its Diversity and Equal Opportunities Strategy 2020–2025. The University provides comprehensive support for socially vulnerable groups and students with individual needs, including individualized study plans, adapted learning environments, and compensatory resources. The role of the Disability Affairs Coordinator, combined with financial aid, psychological services, and mentoring, ensures that students receive tailored assistance to overcome barriers. Special provisions for students affected by geopolitical crises further highlight the institution's responsiveness to exceptional circumstances.

These initiatives create an inclusive academic environment that promotes equity, supports diverse learning needs, and guarantees equal opportunities for academic success.

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

Monitoring of student learning progress at Vilnius University is systematic and multi-tiered, encompassing course, year, and programme levels. At the course level, lecturers apply cumulative assessment methods and provide both formative and summative feedback, enabling continuous tracking of student performance and identification of areas for improvement. The use of Virtual Learning Environments (VLE) enhances this process by offering automated testing, progress tracking, and self-assessment tools, which allow students to monitor their own achievements and adjust learning strategies accordingly. At the institutional level, administrative bodies analyze year-level performance trends and intervene when patterns of underperformance or exceptional results are detected. Programme committees further review academic outcomes, internship feedback, and thesis defence results annually, ensuring that monitoring informs curriculum development and quality enhancement.

Feedback to students is regular, transparent, and delivered through multiple channels, including in-person consultations, remote communication, and digital platforms. Lecturers introduce assessment criteria at the start of each course and provide detailed comments on assignments, clarifying common errors and offering guidance for improvement. This structured feedback system promotes active student engagement with learning materials and encourages self-assessment, enabling learners to plan their academic progress effectively. Student surveys indicate high satisfaction with feedback quality and support services, although concerns about workload have been noted. Especially workload-related issues compared with ECTS points appear not unambiguous between courses or between theory and experimental studies, according to on-site visit discussions. Importantly, feedback data is systematically used to refine teaching strategies and adjust curricula, such as increasing elective flexibility, which demonstrates responsiveness to student needs.

The integration of monitoring and feedback mechanisms into the academic process reflects a coherent and student-centred approach. Monitoring outcomes are not only used to identify individual learning gaps but also to inform institutional decisions on curriculum adjustments and support measures. SACO's dropout prevention initiatives, which include targeted communication and counselling for students at risk, further illustrate the proactive nature of the system. By combining structured progress tracking, timely feedback, and responsive curriculum development, Vilnius University ensures that monitoring of learning progress and feedback provision is systematic, comprehensive, and aligned with the goal of promoting self-assessment and continuous academic improvement.

While Vilnius University provides mechanisms for individualizing studies to accommodate diverse needs, students attempting to design a personalized study plan may face several risks, including administrative delays in approval, inconsistent implementation across faculties, limited awareness of available options, resource constraints, and dependence on individual teacher practices. To overcome these challenges within a semi-strict framework as experimental science faculty tend to have, students maintain proactive communication with faculty representatives to ensure timely adaptation. Additionally, leveraging centralized information resources, requesting clear timelines for plan implementation, and opting for blended solutions - such as flexible scheduling without isolating collaborative activities - can help maintain academic continuity, student agency and social integration while ensuring compliance with institutional requirements.

4.2.2. Graduate employability and career are monitored

Vilnius University has established a systematic and multi-layered approach to monitoring graduate employability and career progression. The Career Tracking Information System (karjera.lt) serves as the central tool, integrating objective data from state registers such as the student register, citizen register, and SoDra, alongside subjective data collected through graduate surveys. This dual-source methodology ensures both quantitative and qualitative insights into employment outcomes, professional integration, and career satisfaction. Objective indicators are updated twice annually for five years post-graduation, providing longitudinal visibility, while surveys conducted at one, three, and five years after graduation capture graduates' perspectives on employability and career development.

The monitoring system offers a robust foundation for tracking graduate careers; however, limitations in the scope of objective data for Lithuanian higher education institutions are acknowledged. To address these gaps, Vilnius University supplements karjera.lt data with internal sources such as SVIS and programme-level reviews. This triangulation approach enhances reliability and informs curriculum adjustments. Despite these limitations, the system effectively identifies trends in employment, further study, and job quality, enabling evidence-based decision-making for programme improvement and alignment with labour market needs.

Employment outcomes within one year of graduation are consistently strong, with SVIS data indicating over 95% employment for first-cycle graduates and approximately 96% for second-cycle graduates in Chemistry-related programmes. Internal VU data shows slight variations, with employment rates ranging from 70.6% to 89.3% depending on the programme, while continuation to further studies is substantial, particularly among first-cycle cohorts. The proportion of graduates employed in positions requiring higher education qualifications remains high for second-cycle graduates but shows variability for first-cycle graduates, reflecting increased progression to advanced studies. Income levels close to the national average and minimal reliance on Employment Services further confirm strong employability.

Graduate monitoring is complemented by employer feedback and alumni engagement, which highlight graduates' problem-solving skills, independence, and motivation as key strengths. These insights, combined with survey data and internship evaluations, inform curriculum updates such as increased elective flexibility. Employer perspectives confirm that graduates are well-prepared for professional roles, particularly at the Master's level, and recommend continued collaboration to align competencies with evolving industry needs. Overall, the monitoring system is systematic, comprehensive, and responsive, ensuring that graduate employability and career development remain central to programme quality assurance and strategic planning.

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

Vilnius University has clearly defined and comprehensive policies to uphold academic integrity, tolerance, and non-discrimination. These principles are embedded in key institutional documents such as the University Statute, the Code of Academic Ethics, and the Diversity and Equal Opportunities Strategy 2020–2025. The regulations governing academic ethics and dispute resolution at both central and faculty levels provide structured mechanisms for addressing breaches. The presence of specialized commissions and clear procedural guidelines ensures that violations are handled transparently and in accordance with established norms, reflecting a strong institutional commitment to ethical conduct and inclusivity.

The University actively implements these policies through practical measures aimed at prevention and monitoring. Academic integrity is reinforced via cumulative assessment systems, impartial invigilation during examinations, and the use of plagiarism detection tools such as EPDS for written work and theses. Students are informed about ethical standards at the start of their studies, and teaching staff employ diverse assessment methods to minimize opportunities for misconduct. The availability of a confidential Helpline for reporting violations and the organization of impartial

observation initiatives further demonstrates proactive efforts to foster a culture of fairness and respect within the academic community.

Evidence from the analysed period indicates that these policies are effective, as no cases of expulsion or reprimand for academic dishonesty were recorded, and only a minimal number of appeals and complaints were submitted, all of which were resolved through established procedures. The absence of reported violations related to discrimination or intolerance suggests that the University's preventive and support measures are functioning well.

Overall, Vilnius University not only has robust policies in place but also ensures their practical implementation, creating an academic environment characterized by integrity, mutual respect, and equal opportunities for all members of the community. Notably, no students were penalized for dishonesty during the evaluation period.

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

Vilnius University ensures academic integrity, tolerance, and non-discrimination through a comprehensive regulatory framework grounded in the University Statute, the Code of Academic Ethics, and the Diversity and Equal Opportunities Strategy 2020–2025. Breaches of these principles are addressed in accordance with the regulations of the Central and Core Academic Ethics Commissions and the Dispute Resolution Commissions. The Code of Academic Ethics sets clear norms for teaching, learning, and research, prohibiting cheating, plagiarism, fabrication, bribery, and aiding dishonest activity. Preventive measures include informing students of ethical standards at the outset of studies, applying cumulative assessment systems, deploying impartial invigilators during examinations, and using the EPDS plagiarism detection tool for written papers and theses. During the analysed period, no expulsions or reprimands for academic dishonesty were recorded, indicating effective implementation of these measures.

The University maintains structured, transparent procedures for handling appeals and complaints related to the study process. Students may submit reasoned appeals regarding final course assessments within seven calendar days of grade publication, while appeals concerning interim assessments, examinations, or thesis defence procedures must be lodged within three working days; faculty Dispute Resolution Commission decisions are final for grade-related appeals, with other decisions appealable to the Central Dispute Resolution Commission, and enforcement of contested actions suspended pending resolution. The CAU Dispute Resolution Commission, composed of three faculty representatives and three student representatives, also addresses disputes related to research and study activities and may extend submission deadlines up to six months for justified reasons. During the analysed period, the CAU Commission received two applications from first-cycle students (2021 and 2022), both concerning final assessments, and the lecturers' evaluations were upheld; no complaints were submitted by second-cycle students. The CAU Academic Ethics Commission received no complaints, and the University operates a confidential Helpline providing prompt psychological and legal assistance for reports of ethics, tolerance, and non-discrimination violations.

ANALYSIS AND CONCLUSION (regarding 4.2.)

Vilnius University has implemented an effective and transparent system for student assessment and progress monitoring at course, year, and programme levels. Cumulative assessment methods combined with formative and summative feedback ensure continuous evaluation of student performance, while Virtual Learning Environments provide automated testing, progress tracking, and self-assessment tools that promote learning autonomy. Institutional oversight through administrative reviews and programme committees strengthens the system by identifying trends, addressing underperformance, and informing curriculum improvements, reflecting a structured and student-centred approach.

Academic integrity and fairness are upheld through clear policies and preventive measures. Students are informed of assessment criteria at the start of each course, and feedback is delivered regularly through multiple channels to support transparency and self-assessment. Measures such as impartial

invigilation, plagiarism detection tools (EPDS), and cumulative evaluation systems reinforce ethical standards. Evidence from the review period - no recorded cases of academic dishonesty and minimal complaints - demonstrates the effectiveness of these practices. Feedback data is systematically used to refine teaching strategies and adjust curricula, ensuring responsiveness to student needs.

Procedures for appeals and complaints are well-defined, accessible, and time-bound, safeguarding fairness and accountability. Students may submit appeals within specified deadlines, and decisions of faculty-level Dispute Resolution Commissions are final for grade-related cases, with other decisions appealable to the Central Commission. Additional mechanisms, including the CAU Academic Ethics Commission and a confidential Helpline, provide further support for resolving disputes and reporting violations. The very low number of appeals and absence of ethics complaints during the analysed period confirm the robustness and transparency of the system for assessment, progress monitoring, and integrity assurance.

AREA 4: CONCLUSIONS

AREA 4	Unsatisfactory - 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			X		
Second cycle			X		

COMMENDATIONS

1. Vilnius University is commended for delivering a curriculum that combines strong theoretical foundations with practical skills through lectures, seminars, laboratory work, and internships. This approach ensures graduates are highly valued in the labour market for their scientific knowledge and professional readiness.

2. The University is recognized for its commitment to inclusivity through the Diversity and Equal Opportunities Strategy and individualized study plans for students with special needs. Dedicated coordination and support services create an equitable and student-centred learning environment.

3. Vilnius University is commended for its systematic progress monitoring and transparent feedback practices at all academic levels. Regular formative and summative assessments, supported by digital tools, foster self-assessment and continuous academic development.

RECOMMENDATIONS

To address shortcomings

1. Although individualized study plans are available, the University should actively promote these options through orientation sessions, targeted communication, and advisor-led guidance to ensure students with specific needs or preferences can benefit from personalized learning pathways.

2. Student feedback highlights concern about heavy workload, overlapping tasks, and inconsistencies between ECTS credits and actual workload. A systematic review of course scheduling, workload distribution, and task alignment should be conducted to reduce bottlenecks and improve balance without compromising learning outcomes.

For further improvement

1. While the Diversity and Equal Opportunities Strategy is in place, evidence of measurable outcomes is limited. The University should implement clear performance indicators and publish annual reports on inclusivity initiatives, ensuring transparency and demonstrating progress in supporting socially vulnerable groups and students with individual needs.

2. As globalization accelerates, Vilnius University should deepen collaboration with employers to manage labour market transitions and expectations. Joint initiatives such as employer forums, competency mapping, and tailored internships will help graduates integrate effectively into both local and international markets.

3. Although feedback mechanisms are strong, systematic guidelines for active learning approaches are not fully visible. The University should formalize and scale interactive teaching methods, such as problem-based learning, flipped classrooms, and collaborative projects, across all programmes to further enhance student engagement and skill development.

4. To strengthen evidence-based decision-making, the University should integrate karjera.lt data with SVIS, employer feedback, and alumni surveys into a unified dashboard. This will provide comprehensive insights into graduate employability, diversity outcomes, and academic performance trends, supporting continuous curriculum improvement.

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

The number and composition of teaching staff in the Chemistry study programmes at Vilnius University are sufficient to achieve the intended learning outcomes. At the time of evaluation, 73 lecturers deliver the programmes, with a balanced gender distribution and a high proportion of qualified personnel. Most staff are permanent or long-term employees of the Faculty of Chemistry and Geosciences, ensuring stability and continuity in programme delivery. Interdisciplinary expertise is provided by lecturers from other faculties for subjects such as mathematics, physics, and academic English. The lecturer-to-student ratio remains appropriate, averaging 0.29–0.33 across first- and second-cycle programmes, and staffing for the new Cosmetic Chemistry programme is planned at a level that guarantees adequate coverage.

The qualifications and competencies of the teaching staff meet institutional and national requirements and are regularly assessed through transparent recruitment and systematic evaluation processes. A significant majority (86.9%, increasing to 94.7% from 2024) hold doctoral degrees, and more than 60% in first-cycle and over 80% in second-cycle programmes occupy senior academic ranks. On average, lecturers have 14.5 years of academic experience and nearly 20 years of professional experience, with many actively engaged in research institutions such as the Centre for Physical Sciences and Technology and the Centre for Innovative Medicine. Furthermore, 17% of staff have direct industry experience, complemented by guest lectures and field trips that strengthen the applied dimension of studies. Language proficiency is high, with 95.6% of staff demonstrating English skills at B2 level or above, supporting international collaboration and mobility.

The scientific and didactic competence of the teaching staff is reinforced by their active involvement in research, curriculum development, and professional training. Faculty members integrate current scientific advances into teaching, supervise theses in collaboration with research institutions, and

participate in national and international projects. Continuous quality assurance measures, including student feedback, annual performance reviews, and structured meetings, ensure responsiveness to evolving trends. Numerous awards for scientific and pedagogical excellence confirm the high level of expertise and commitment among staff. These distinctions, including Lithuanian Science Prizes and international fellowships, highlight the faculty's strong academic reputation and research capacity.

Overall, the combination of sufficient staff numbers, high academic qualifications, and recognized scientific and teaching achievements provides a robust foundation for achieving the learning outcomes of the Chemistry study programmes at both first and second cycles. The presence of professors and associate professors in key positions ensures advanced pedagogical quality and effective supervision of research work. The integration of junior researchers and assistants into teaching roles promotes continuity and innovation in educational practices. Collectively, these factors demonstrate that the teaching staff composition, qualifications, and competencies are fully adequate to deliver high-quality, research-driven, and practice-oriented education.

ANALYSIS AND CONCLUSION (regarding 5.1.)

The Chemistry study programmes at Vilnius University are supported by a sufficient number of highly qualified teaching staff, ensuring the achievement of intended learning outcomes. At the time of evaluation, 73 lecturers deliver the programmes, with most being permanent or long-term employees of the Faculty of Chemistry and Geosciences. The lecturer-to-student ratio remains appropriate across first- and second-cycle studies, and staffing for the new Cosmetic Chemistry programme is planned to maintain adequate coverage. The majority of staff hold doctoral degrees, and senior academic ranks dominate both cycles, guaranteeing strong pedagogical and research capacity. Interdisciplinary expertise, industry experience, and high foreign language proficiency further enhance the quality and international dimension of the programmes.

The teaching staff demonstrate advanced scientific, didactic, and professional competence through active research engagement, curriculum development, and collaboration with industry. Many lecturers participate in national and international projects, integrate current scientific advances into teaching, and supervise theses in partnership with research institutions. Continuous quality assurance measures, combined with numerous awards for scientific and pedagogical excellence, confirm the faculty's strong academic reputation. Overall, the combination of sufficient staff numbers, high qualifications, and recognized achievements provides a robust foundation for delivering research-driven, practice-oriented education aligned with institutional and national standards.

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

Vilnius University demonstrates a strong commitment to enhancing the research, pedagogical, and professional competences of its teaching staff through structured mobility programmes, participation in conferences, and engagement in international networks. Academic mobility is primarily facilitated through ERASMUS+, NORDPLUS, ISEP, and bilateral agreements, offering opportunities for teaching visits, training courses, and study visits abroad. These initiatives are supported by EU funding and University budget allocations, while faculty coordinators provide organizational assistance and schedule adjustments to encourage participation and integration of international experience into teaching practices.

The analysis indicates that staff mobility within the Chemistry study programmes has recovered post-pandemic and shifted markedly from learning-focused visits to teaching-focused engagements, with total visits rising from 4 in 2020–2021 to a peak of 15 in 2022–2023 before declining to 10 in 2023–2024, and the teaching share increasing from 0% to 90% in the final year; across a pool of 73

teachers, this equates to 42 cumulative visits (0.575 per teacher over four years; 0.144 per teacher per year), demonstrating modest overall participation, concentrated among a subset of staff, and underscoring the need to broaden inclusion, balance learning and teaching mobility to sustain pedagogical renewal, and institutionalize targets and support measures such as tracking unique participation, setting annual coverage goals, and expanding partnerships to enhance the impact on research, didactic, and professional competences while strengthening the programmes' international visibility and curricular innovation.

Professional development is reinforced by systematic certification every five years, where research output, conference participation, and training activities are key evaluation criteria. Staff also benefit from project-based activities funded by the Research Council of Lithuania and other external sources, which promote international collaboration, joint publications, and the adoption of global best practices. Feedback from mobility experiences is shared within the faculty, fostering knowledge exchange and continuous improvement of teaching and learning methods.

Despite the positive impact of mobility initiatives, participation varies due to workload constraints and limited partnerships. Between 2020 and 2024, 42 teachers engaged in international mobility, mainly through short-term visits to European institutions, with fewer teaching visits compared to learning visits. Activities resumed after pandemic-related restrictions, including visits to academic and industry partners in Poland, Italy, and Turkey. To increase participation, the Faculty plans to expand partnerships, strengthen administrative support, and position mobility as a strategic priority. These measures ensure that teaching staff maintain high professional standards, integrate international perspectives into curricula, and contribute to the global competitiveness of study programmes.

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

Vilnius University ensures comprehensive opportunities for teaching staff development through structured initiatives aimed at enhancing research, pedagogical, and professional competences. The Faculty of Chemistry and Geosciences actively engages in international collaboration by inviting foreign experts to deliver lectures and seminars on advanced topics such as nanotechnology, sustainable energy, and supramolecular chemistry. These activities expose staff to global scientific trends, foster interdisciplinary learning, and strengthen research skills through innovative methods and real-world applications. Faculty members also organize and participate in major international conferences, creating platforms for knowledge exchange, networking, and curriculum modernization, which reinforce international partnerships and promote scientific achievements.

Pedagogical development is systematically supported through a formal competence framework introduced in 2018, integrating pedagogical requirements into recruitment and certification processes. The Centre of Educational Competence plays a central role in delivering targeted training programmes, including induction courses for new staff and workshops on active learning, ICT integration, blended learning, and student motivation. The Centre responds proactively to emerging needs, as demonstrated during the COVID-19 pandemic when extensive online training on hybrid and remote teaching was offered. All training costs are covered by University funds, and recorded sessions are made available for flexible access, ensuring inclusivity and continuous learning.

Further opportunities for pedagogical improvement include participation in international MOOCs such as ARQUS Alliance's Challenge-Based Learning and courses from McMaster University and the University of Michigan. Since 2023, financial incentives and the EdTech project have significantly increased engagement, promoting digital competence and educational innovation. Faculty members who completed EdTech training updated their courses to incorporate virtual learning environments and advanced technologies, ensuring alignment with modern teaching practices. Continuous improvement is reinforced through institutional mechanisms, including funding for course updates and active learning materials, while platforms such as Moodle and MS Teams remain integral to teaching processes.

Research and professional competence development is equally prioritized. Faculty members regularly attend national and international conferences, participate in collaborative research projects, publish in peer-reviewed journals, and serve on editorial boards, reinforcing academic rigor and

global engagement. Professional skills are enhanced through public lectures, commissioned activities, and foreign language training offered by the VU Institute of Foreign Languages, supporting internationalization and English-taught courses. General competences, including communication, leadership, and stress management, are addressed through training organized by the Personnel Department, with costs covered by University funds. Collectively, these initiatives reflect a comprehensive and well-resourced strategy that ensures continuous improvement and positions the teaching staff to meet the demands of modern higher education.

ANALYSIS AND CONCLUSION (regarding 5.2.)

Vilnius University demonstrates a strong commitment to enhancing the research, pedagogical, and professional competences of its teaching staff through structured mobility programmes, international collaboration, and targeted training initiatives. Mobility opportunities supported by ERASMUS+, NORDPLUS, and bilateral agreements have resumed post-pandemic, with a growing emphasis on teaching-focused visits. Faculty development is further reinforced by project-based activities, conferences, and systematic certification processes, ensuring continuous improvement and alignment with global best practices.

Pedagogical advancement is supported through the Centre of Educational Competence, which offers induction courses, workshops on active learning, ICT integration, and blended teaching, complemented by international MOOCs and the EdTech project promoting digital innovation. Additional measures include funding for course updates, language training, and general competence development, creating a well-resourced system that fosters adaptability, innovation, and high-quality, research-driven education aligned with international standards.

AREA 5: CONCLUSIONS

AREA 5	Unsatisfactory - 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			X		
Second cycle			X		

COMMENDATIONS

1. Internal teamwork in laboratories and the informal mentoring system within the faculty foster peer learning and knowledge exchange. These practices complement formal training and mobility initiatives, ensuring continuous improvement in pedagogical and research competences while promoting a collaborative academic culture.

2. The integration of mobility outcomes, guest lectures, and collaborative practices into course content supports curriculum modernization and innovation. These measures collectively enhance teaching staff adaptability, global engagement, and capacity to deliver high-quality, research-driven education aligned with international standards.

RECOMMENDATIONS

To address shortcomings

1. Develop a formal succession and talent pipeline strategy to ensure continuity in research and teaching by mapping critical roles, planning for retirements, and creating tenure-track and bridge positions in priority areas. Implement mentoring and co-supervision between senior

and junior staff alongside accelerated promotion tracks to secure future leadership and maintain programme quality.

2. Shift to a balanced mobility portfolio by moving from mostly teaching visits to a 50:50 mix of learning and teaching, emphasizing training weeks, job shadowing, pedagogy exchanges, and method clinics in partner labs. This approach fosters didactic innovation, introduces fresh methods into curricula, and boosts staff participation rates.

3. Formalize workload buffers and teaching relief to enable broader staff participation in mobility and project collaboration, with a focus on mid-career and junior faculty. This approach promotes wider diffusion of international practices, continuous pedagogical renewal, and reduces the concentration of opportunities among a small subset of staff.

For further improvement

1. Encourage and expand international mobility opportunities for teaching staff to strengthen professional competencies, language and intercultural skills, and academic networking. Combining mobility with regular engagement from visiting scholars through lectures and seminars can significantly enrich teaching quality and enhance the international dimension of study programmes. These initiatives should be complemented by collaborative practices such as teamwork in laboratories and informal mentoring systems to foster peer learning and continuous professional development.

2. Scale digital pedagogy by sharing EdTech resources across programs, enabling virtual exchanges, micro-credentials, and integrating visiting scholars into co-taught modules and online masterclasses, while expanding English-medium components where feasible. This enriches the international dimension without relying solely on physical mobility, while improving accessibility, quality, and global visibility.

3. Establish a research-driven educational development framework that integrates evidence-based teaching innovations into curricula, supported by structured faculty development programs and administrative incentives for pedagogical excellence. This strengthens the link between cutting-edge research and teaching quality, enhances student learning outcomes, and positions the faculty as a leader in globally competitive, research-informed education.

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 of Chemistry and Geosciences (CHGF), Institute of Chemistry (CHI), provides a well-equipped infrastructure for teaching and learning, including auditoriums, laboratories, and specialized rooms suitable for lectures, seminars, and practical work. Ten auditoriums can accommodate up to 489 students simultaneously, ensuring sufficient capacity for teaching activities. All auditoriums have wireless internet access, and most are equipped with stationary multimedia systems, while portable devices such as laptops, projectors, tablets, and cameras are available from the Dean's office. Advanced facilities include the ASA classroom, which features high-definition streaming and recording capabilities, and smaller specialized rooms at the National Center for Physical Sciences and Technology, primarily used for second-cycle studies.

The Faculty of Chemistry and Geosciences (CHGF), Institute of Chemistry (CHI) possesses adequate physical, informational, and financial resources to support field studies across all study cycles. Ten auditoriums with a combined capacity of 489 students are equipped with wireless internet, stationary multimedia projectors, and LAN connections, with additional portable devices available from the Dean's office. Advanced multimedia systems for streaming and recording are installed in selected rooms, and smaller seminar spaces are available at the National Centre for Physical Sciences and Technology for second-cycle studies. The faculty maintains modern, fully equipped teaching laboratories tailored to different chemistry fields, complemented by a newly established Didactics Centre with 16 workstations. All laboratories comply with safety standards, are supervised by technical staff, and replenished with consumables each semester. These resources ensure uninterrupted delivery of lectures, seminars, and practical work, supporting high-quality implementation of study programs.

To ensure continuity of studies and uninterrupted scientific research, the Faculty of Chemistry and Geosciences allocates dedicated funds for equipment repair and modernization. For instance, in 2024, a new scanning electron microscope was purchased to enhance research and learning opportunities, complementing the repair of the existing SEM, which cost €53,742 (CHGF share: €5,375; VU fund share: €48,367). Annual expenditures on material assets and inventory repairs have varied significantly, with notable increases in 2024 for equipment acquisition (€230,468) and repairs (€59,800), reflecting strategic investment in infrastructure. The faculty operates nine specialized teaching laboratories and multiple research labs equipped with advanced instruments such as FTIR and Raman spectrometers, ICP-OES, X-ray diffractometers, NMR spectrometers, and chromatographs. These resources are actively used for student coursework, theses, and collaborative research, ensuring high-quality practical training and scientific output.

Modern teaching laboratories and specialized labs support practical and advanced courses, with strict safety protocols enforced through mandatory training and registration procedures. Departments regularly invest in upgrades, replenish consumables each semester, and repurpose older research equipment for teaching purposes, ensuring flexibility and resource efficiency. Financial support for infrastructure maintenance and development is provided through an annual budget, complemented by significant investments in advanced equipment, such as the acquisition of a new scanning electron microscope in 2024.

In addition to teaching laboratories, advanced practical work and Master's theses are conducted in research laboratories at the National Centre for Physical and Technological Sciences, located at Saulėtekio av. 3. Opened in 2016, this 27,000 m² facility is the largest and most modern research base in Lithuania and the Baltic region, housing 46 laboratories and accommodating over 700 scientists and students simultaneously. The centre was established with an investment of €69 million and provides infrastructure for academic and business collaboration. Of this space, 1,785 m² is allocated to the Faculty of Chemistry and Geosciences, Institute of Chemistry, which operates laboratories for Organic Chemistry, Polymer Chemistry, Inorganic Functional Materials, Chemical Analysis and Sensors, Electrochemical Material Science, and Active Coatings. These modern facilities significantly enhance research capacity and student access to cutting-edge experimental environments.

Vilnius University provides comprehensive informational and methodical resources to support first- and second-cycle Natural Science studies. The Scholarly Communication and Information Centre (SCIC), the main library for Natural Sciences, offers 6,085 books and over 17,000 publications in open stacks, alongside 22 study spaces, computer-equipped workstations, and modern amenities such as scanning facilities, group rooms, and accessibility features for students with disabilities. SCIC operates 24/7 and includes over 800 workstations, 137 of which are computerized, as well as specialized facilities like a 3D printer and IT laboratory. The Faculty of Chemistry and Geosciences also maintains a dedicated Chemistry Reading Room with 32 workstations and a collection of approximately 64,000 items aligned with its study programs. Students have access to extensive electronic resources through the VU Virtual Library, which provides a "one-stop shop" for printed and digital materials, including 106 subscribed databases and over 260,000 e-books. Information literacy training is actively provided, with 248 academic hours delivered in 2022 to around 2,000 students, ensuring effective use of scientific resources and ethical citation practices. These resources

collectively ensure that students have modern, accessible, and well-curated materials for learning and research.

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

The Faculty of Chemistry and Geosciences has consistently invested in upgrading its teaching and learning infrastructure to ensure a modern and safe study environment. Between 2019 and 2024, significant refurbishments were completed, including LED lighting installation in all teaching rooms (€8,000), furniture upgrades in the Analytical Chemistry laboratory (€5,000), and the establishment of a new classroom (TChA) costing approximately €20,000. Advanced multimedia streaming systems were installed in the ASA classroom (€6,500), and heating systems were improved in multiple auditoriums (€3,500 in 2021 and €700 in 2022). Major investments include the creation of the Didactics Centre in 2023 with a laboratory featuring 16 workstations (~€150,000) and ventilation system redesigns for several laboratories. Additional improvements such as air conditioning installation, stair repairs, and infrastructure upgrades were also implemented, totalling tens of thousands of euros. These enhancements, combined with access to licensed software and IT services, ensure high-quality teaching conditions and support for both in-person and remote learning.

A new CHGF CHI building is planned on the Saulėtekis campus by 2027, covering 13,000 m², with one floor for auditoriums and three for laboratories and staff rooms. This will boost student mobility and provide additional modern equipment.

ANALYSIS AND CONCLUSION (regarding 6.1.)

The Faculty of Chemistry and Geosciences demonstrates a strong commitment to maintaining and upgrading its physical and technological infrastructure, ensuring high-quality teaching and learning. Modern auditoriums, specialized classrooms, and fully equipped laboratories provide an effective environment for lectures, seminars, and practical work. Continuous investments in multimedia systems, safety-compliant laboratories, and advanced research facilities, including access to the National Center for Physical and Technological Sciences, enable students to engage in cutting-edge experimental work. These resources directly contribute to improved student outcomes by supporting hands-on learning, fostering research skills, and enhancing employability through exposure to industry-standard equipment and methodologies.

Informational and methodical resources are comprehensive and well-integrated into the learning process, offering students access to extensive printed and electronic materials through the VU Library system and the Scholarly Communication and Information Centre. Modern facilities, digital platforms, and structured information literacy training ensure that students can effectively utilize scientific resources and adhere to ethical standards in academic work. This robust support system enhances academic performance, facilitates independent research, and strengthens critical thinking and analytical skills. Combined with planned infrastructure developments, such as the new CHGF building by 2027, these measures will further improve learning conditions and research opportunities, leading to higher student satisfaction and stronger graduate competencies.

AREA 6: CONCLUSIONS

AREA 6	Unsatisfactory - 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				X	
Second cycle				X	

COMMENDATIONS

1. The Faculty has successfully maintained its physical infrastructure, ensuring auditoriums, specialized classrooms, and fully equipped laboratories that meet safety standards and support high-quality teaching and practical training in a historical and finance-restricted operational environment.

2. Continuous investment in advanced research facilities and collaboration with the National Centre for Physical and Technological Sciences significantly enhances student engagement in research activities, offering exposure to cutting-edge technologies and improving graduate competencies.

3. Comprehensive informational and methodical resources, including the SCIC library, Chemistry Reading Room, and extensive electronic databases, provide students with excellent access to scientific literature and digital learning tools, fostering strong research and academic skills.

RECOMMENDATIONS

To address shortcomings

None

For further improvement

1. Continue strategic investment in modern infrastructure and laboratory equipment to maintain high-quality teaching and research environments. Prioritize the timely completion of the planned CHGF building by 2027 to enhance student mobility and access to advanced facilities.

2. Enhance student outcomes through structured integration of research-based learning and advanced practical training in collaboration with the National Center for Physical and Technological Sciences. Formalize mentorship and project-based learning opportunities to strengthen research skills and employability.

3. Expand digital and informational resources by increasing the availability of electronic learning materials and strengthening virtual learning platforms. This will improve accessibility, support blended learning, and align with students' growing preference for digital resources.

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

Vilnius University (VU) has established a comprehensive internal quality assurance system designed to meet the highest international standards and comply with the European Higher Education Area guidelines, the University Statute, and Study Regulations. Oversight of this system is provided by the VU Senate and the Councils of Constituent Academic Units (CAUs), while the Department for the Quality and Development of Studies supervises implementation and monitoring. The system emphasizes continuous improvement through fostering a quality culture, promoting dialogue, and

ensuring data-driven decision-making with measurable outcomes. Its development was initiated under the project *"Development and Implementation of the Internal Study Quality Management System of Vilnius University"*, ensuring alignment with global best practices.

Study Programme Committees (SPCs) are central to the quality assurance process and hold primary responsibility for programme monitoring, evaluation, and enhancement. SPCs are composed of academic staff, student representatives, and external social partners, ensuring broad stakeholder involvement. They meet at least once per semester to review programme implementation, analyse feedback from students and employers, and propose improvement measures. Their tasks include maintaining coherence between programme aims, competences, content, teaching methods, and assessment, as well as ensuring relevance and competitiveness. SPC decisions are communicated to staff and students and reported annually to CAU Councils. VU applies structured procedures for programme approval, monitoring, and evaluation, student achievement assessment, and systems for distance learning, computer-based examinations, and plagiarism prevention. Additional measures include lecturer competence development, induction and dropout prevention programmes, and provision of academic, social, and career support services.

At the Faculty of Chemistry and Geosciences (CHGF), the Vice-Dean for Academic Affairs plays a key role in coordinating internal quality assurance activities. Acting as chair of the CAU College of Studies, which includes SPC chairs and student representatives, the Vice-Dean ensures programme balance, content consistency, and prevents duplication across study programmes. The College of Studies also serves as a forum for resolving issues beyond the scope of individual SPCs and for sharing best practices. Administrative staff in the CAU Study Department provide operational support, including timetable preparation, student consultations, and documentation management. Substantial changes to study programmes - such as modifications to title, field, qualification, or scope - require approval by the SPC, CAU Council, and, in some cases, the University Senate. When multiple programmes within the same field are affected, the College of Studies provides recommendations to maintain uniqueness and compatibility. These governance structures ensure transparency, stakeholder engagement, and continuous improvement of study quality.

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

Vilnius University ensures strong stakeholder involvement in its internal quality assurance system through structured and meaningful engagement. Social partners play a critical role in programme development by contributing to course content, delivering guest lectures, supervising internships, and advising on labour market needs. Their participation enriches curricula and strengthens the connection between academic studies and industry requirements. This collaboration provides students with practical exposure through seminars, site visits, and thesis supervision, ensuring that study programmes remain relevant and competitive in a rapidly evolving professional environment.

The quality assurance system at VU employs a systematic and data-driven approach to monitoring academic processes. Key areas such as student admissions, academic performance, thesis defenses, and graduate feedback are continuously reviewed using multiple data sources. Proposed modifications to study programmes undergo rigorous approval procedures involving Study Programme Committees (SPCs), Councils of Constituent Academic Units (CAUs), and, where necessary, the University Senate. Oversight by the Department for Quality and Development of Studies guarantees consistency, accountability, and alignment with institutional and European Higher Education Area standards.

The involvement of stakeholders, including students, social partners, and alumni, has led to significant improvements in study quality and programme relevance. Feedback from industry representatives has resulted in curriculum updates, such as revising courses to address regulatory knowledge gaps and introducing new programmes like Cosmetic Chemistry to meet emerging market demands. Social partners also contribute to research infrastructure, propose thesis topics, and participate in thesis defense committees, ensuring strong links between academic outcomes and labour market expectations. These collaborative efforts demonstrate that stakeholder

engagement is highly effective in fostering continuous improvement and maintaining the competitiveness of VU's study programmes.

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

Vilnius University demonstrates a systematic and transparent approach to collecting, analyzing, and disseminating information on study programmes, their external evaluations, improvement processes, and outcomes. Data is gathered at multiple levels - university-wide, within constituent academic units (CAUs) and for individual programmesthrough standardized mechanisms such as biannual centralized student surveys integrated into VUSIS. These surveys provide anonymous feedback on course units and overall semester satisfaction, which is shared directly with lecturers, Study Programme Committees (SPCs), and CAU administrations. Results are published on the university's internal intranet, ensuring accessibility and transparency for all stakeholders. This structured process enables informed decision-making and supports continuous monitoring of programme quality.

The collected information is actively utilized to guide curriculum updates, improve teaching practices, and prepare self-evaluation reports for external accreditation. SPCs and CAU administrators rely on these data to identify strengths and weaknesses, implement targeted improvements, and align programmes with strategic objectives. Transparency is further reinforced through public availability of aggregated results and active communication with stakeholders, including students, graduates, and employers. These practices ensure that programme development is based on evidence, stakeholder input, and compliance with internal quality assurance standards, fostering a culture of accountability and continuous improvement across the university.

7.1.4. Student feedback is collected and analysed

Student feedback at Vilnius University is systematically collected and rigorously analysed within an established internal quality assurance framework that involves all key stakeholders and supports continuous monitoring, transparency, and informed decision-making. Twice per academic year, centralized surveys integrated into VUSIS gather anonymous student opinions on both individual course units and overall semester experiences, with additional targeted surveys conducted by the Students' Representation on specific issues like for lecturer performance and elective needs. Results are disseminated to lecturers, Study Programme Committees (SPCs), and CAU administrations, and published on the VU intranet, ensuring institution-wide access and procedural transparency. SPCs review these data after each semester and use them to inform programme adjustments, while lecturers are encouraged to present survey outcomes in introductory classes to foster dialogue and responsiveness. The process is reinforced by standardized instruments and clear governance pathways, embedding student feedback into routine monitoring and strategic decision-making.

Student feedback demonstrably informs the development of the field of study through concrete curricular and organizational changes. Documented outcomes include the addition of laboratory hours, the introduction of new courses (e.g., *Bioactive Substances* and *Materials Science*), and greater flexibility in elective selection - particularly at the master's level alongside practical tools such as a thesis grading matrix to enhance clarity and fairness in assessment. Participation rates are strong (72% in first-cycle and 77% in second-cycle surveys), and satisfaction indicators are consistently positive (72–79% satisfied or likely satisfied; 76% would recommend the studies), evidencing both engagement and perceived value. Identified concerns such as workload and timetable constraints are acknowledged and addressed through scheduling adjustments, illustrating a feedback-to-action loop. Taken together, the systematic collection, analysis, and transparent dissemination of student feedback, coupled with measurable improvements, show that the development of the study field is effectively grounded in an internal quality assurance system that is stakeholder-inclusive, continuously monitored, and operationally responsive.

ANALYSIS AND CONCLUSION (regarding 7.1.)

Vilnius University's internal quality assurance system is structured and effective, incorporating multi-level feedback from students, social partners, and alumni. Stakeholders actively contribute through curriculum development, guest lectures, internships, and labour market insights, ensuring programmes remain relevant and competitive. Continuous monitoring covers admissions, student performance, thesis defences, and graduate feedback, with all changes approved by SPCs, CAU Councils, and, when necessary, the Senate.

Student feedback is collected twice yearly via centralized online surveys (VUSIS) on course units and overall satisfaction. Results are shared transparently, discussed in SPC meetings, and used to implement improvements such as new courses, added laboratory hours, and greater elective flexibility. High participation rates and positive satisfaction scores confirm strong engagement, while workload concerns are addressed through timetable adjustments.

Survey results are communicated to lecturers and students to foster dialogue, and significant issues are resolved collaboratively through SPC-led discussions. This integrated, data-driven approach ensures continuous improvement, transparency, and stakeholder involvement, reinforcing VU's commitment to high-quality, student-centred education.

AREA 7: CONCLUSIONS

AREA 7	Unsatisfactory - 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			X		
Second cycle			X		

COMMENDATIONS

1. Strong stakeholder engagement as VU effectively involves students, social partners, and alumni in programme development, ensuring relevance and alignment with labour market needs.

2. Transparent feedback systems via centralized surveys and published results on the intranet promote openness and enable informed decision-making across all academic levels.

3. Continuous improvement culture for feedback-driven changes, such as new courses, flexible electives, and workload adjustments, demonstrate responsiveness and commitment to quality enhancement.

RECOMMENDATIONS

To address shortcomings

1. Increase undergraduate and graduate survey participation by introducing incentives or alternative engagement methods to improve faculty-level response rates and ensure representative data for long-term evaluation.

2. Feedback from teachers and involvement of them on strategic planning needs enhancement; growing to a learning community also for educational activities involving students, teachers and management.

3. Expand public transparency to make key quality assurance outcomes and programme improvement reports accessible on public platforms, not only the internal intranet, to strengthen accountability.

For further improvement

1. Strengthen stakeholder communication and formalize regular meetings and updates with social partners and alumni to ensure their input continues to inform curriculum relevance and innovation.

2. Integrate feedback analytics by developing a centralized dashboard for real-time analysis of student and stakeholder feedback to support quicker decision-making and trend identification.

V. SUMMARY

The Chemistry study programmes at Vilnius University align with Lithuania's economic priorities and the EU innovation agenda, positioning chemistry as a key driver of technological and industrial growth. National strategies such as *Lietuva 2030* and the Innovation Development Programme guide objectives like strengthening human resources, advancing science-based technologies, and fostering academia–industry collaboration. VU offers bachelor's and master's programmes that meet labour market needs in pharmaceuticals, cosmetics, nanotechnology, and advanced manufacturing, equipping graduates with practical skills, interdisciplinary knowledge, and entrepreneurial competencies. Fully compliant with national and European standards, the programmes integrate theory, laboratory practice, and research-based learning, supported by transparent assessment and rigorous thesis processes. Regular curriculum updates, international modules, and collaboration with social partners ensure responsiveness to global trends, while learning outcomes emphasize critical thinking, ethical responsibility, and lifelong learning.

Research at Vilnius University's Faculty of Chemistry and Geosciences provides a robust foundation for research-based higher education, with strong integration of scientific advances into teaching. Courses are delivered by active researchers publishing in high-impact journals, and students engage in laboratory work from the outset, progressing to high-standard theses that often align with faculty research projects. Practical learning is supported by advanced analytical techniques and equipment, while curriculum updates, mobility opportunities, and collaboration with industry and international partners ensure alignment with global trends. Overall, the faculty sustains a dynamic, research-driven environment that equips students with up-to-date knowledge, practical skills, and exposure to cutting-edge science.

Vilnius University demonstrates a robust and transparent framework for student admission, recognition of prior learning, and academic support in the Chemistry study field. Admission procedures are well-structured, aligned with national regulations, and complemented by clear communication and outreach initiatives, ensuring fairness and accessibility for both domestic and international applicants. Recognition processes for foreign qualifications and prior learning follow international standards and operate efficiently, supporting mobility and diverse entry pathways. The University provides comprehensive academic, financial, social, and psychological support systems that contribute positively to student success and well-being, reinforced by strong research environments and career development services. While the overall effectiveness of these mechanisms is rated very good, targeted improvements and changes, such as program restructuring and enhanced curriculum coordination, bridging modules for varied academic preparation, greater

flexibility for mobility, and systematic integration of soft skills—would further strengthen student paths and experience and maximize learning outcomes across all programmes.

Vilnius University has established a comprehensive and transparent system for student assessment, progress monitoring, and academic integrity assurance. Assessment is conducted through cumulative methods supported by formative and summative feedback, while Virtual Learning Environments enable automated testing, progress tracking, and self-assessment to promote learning autonomy. Academic integrity is safeguarded through clear policies, impartial invigilation, and plagiarism detection tools, with no recorded cases of dishonesty during the review period. Appeals and complaints are managed through structured, time-bound procedures overseen by faculty and central commissions, ensuring fairness and accountability. The very low incidence of disputes and ethics violations confirms the effectiveness of these mechanisms, which collectively create a student-centred environment that upholds transparency, integrity, and continuous improvement.

The Chemistry study programmes at Vilnius University are delivered by a sufficient number of highly qualified teaching staff, ensuring strong pedagogical and research capacity. With most lecturers holding doctoral degrees and senior academic ranks, supported by interdisciplinary expertise and industry experience, the programmes maintain high academic standards and international relevance. Faculty development is reinforced through systematic certification, targeted training by the Centre of Educational Competence, and initiatives such as the EdTech project, alongside mobility opportunities under ERASMUS+ and other frameworks. These measures foster continuous improvement in research, teaching, and professional skills, enabling staff to deliver innovative, research-driven education aligned with global best practices.

The Faculty of Chemistry and Geosciences provides modern and well-maintained physical, informational, and technological resources that strongly support effective teaching, research, and student learning outcomes. Upgraded auditoriums, specialized laboratories, and access to advanced research facilities ensure hands-on experience and exposure to cutting-edge methods, while comprehensive library services and digital platforms enhance information literacy and independent research skills. Continuous investments in infrastructure and the planned new building by 2027 will further improve learning conditions, increase student mobility, and strengthen graduate competencies, contributing to higher academic performance and employability.

Vilnius University operates an effective internal quality assurance system that integrates multi-level feedback and transparent processes. Student opinions are collected twice yearly through centralized surveys, complemented by input from social partners and alumni, ensuring programmes remain relevant and competitive. Results are shared openly via the VU intranet and discussed in Study Programme Committees, driving curriculum updates, new course introductions, and improved elective flexibility. Stakeholder engagement, combined with systematic monitoring of admissions, performance, and graduate feedback, fosters continuous improvement and accountability, reinforcing VU’s commitment to high-quality, student-centred education.

VI. EXAMPLES OF EXCELLENCE

The Chemistry curriculum at Vilnius University reflects educational excellence by combining strong theoretical foundations with hands-on laboratory practice and research from the outset. Courses are delivered by active researchers, culminating in rigorous, industry-relevant theses supported by advanced analytical techniques and multiform collaboration with social partners. Transparent assessment strategies and opportunities for international mobility further enhance global competitiveness and innovation

An outstanding example of non-formal pedagogical development within the Faculty of Chemistry is the internal teamwork in laboratories combined with an informal mentoring system. These practices create a dynamic peer-to-peer learning environment where experienced staff and advanced students

guide their colleagues in experimental techniques, safety protocols, and innovative research approaches. By fostering collaborative problem-solving and knowledge exchange beyond formal coursework, this system complements structured training and mobility programmes, ensuring continuous enhancement of teaching and research competences. Moreover, it cultivates a collegial academic culture that promotes professional growth, adaptability, and the dissemination of best practices, thereby reinforcing excellence in both pedagogy and scientific inquiry.

Vilnius University's Faculty of Chemistry and Geosciences sustains educational excellence through its extensive and impactful research community, which is deeply integrated into teaching and learning. Active researchers embed the latest scientific advances into courses, while students engage in laboratory research from the outset, progressing to independent projects and high-standard theses often linked to faculty basic research. This strong research foundation, complemented by international collaborations, mobility opportunities, and industry partnerships, ensures that the curriculum remains contemporary and equips graduates with cutting-edge knowledge and research-oriented practical skills.