STUDIJŲ KOKYBĖS VERTINIMO CENTRAS
CENTRE FOR QUALITY ASSESSMENT IN HIGHER EDUCATION

BIOCHEMISTRY FIELD OF STUDY

Vilnius University

EXTERNAL EVALUATION REPORT

Expert panel:

1. Panel chair: Prof. Dr. Kari Keinänen …….. (signature)
2. Academic member: Prof. Dr. Néstor V. Torres Darias
3. Academic member: Associate Professor Dr. Arjan de Brouwer
4. Social partner representative: Dr. Ramunė Leipuvienė
5. Student representative: Kamilė Dargytė

SKVC coordinator: Dr. Ona Šakalienė

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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. Kari Keinänen, professor emeritus, Faculty of Biological and Environmental Sciences University of Helsinki (Finland);

2. Academic member: Prof. Dr. Nestor V. Torres Darias, professor of Biochemistry and Molecular Biology, University of La Laguna (Tenerife, Canary Islands, Spain);

3. Academic member: Associate Professor Dr. Arjan de Brouwer, Department of Human Genetics, Radboud University Nijmegen Medical Centre (The Netherlands);

4. Social partner representative: Dr. Ramunė Leipuvienė, Sr. Product Manager in Molecular Biology, Thermo Fisher Scientific, Vilnius (Lithuania);

5. Student representative: Kamilė Dargytė, Fourth-year Bachelor's student, Applied Chemistry programme, Faculty of Chemical Technology, Kaunas University of Technology (Lithuania).

1.3. SITE VISIT

The site visit was organised on 24 October 2025 onsite.

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

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

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

1.4. BACKGROUND OF THE REVIEW

Overview of the HEI

Vilnius University (VU), founded in 1579, is the oldest and largest university in Lithuania. It has 15 faculties or corresponding core academic units. It provides education and training in 90 1st cycle and 110 2nd cycle programmes covering 60 different study fields ranging from humanities, social sciences and medicine to natural sciences and technology. Doctoral studies are offered in nearly 30 research fields.

Overview of the study field

The 1st and 2nd cycle study programmes in Biochemistry under evaluation belong to the study area of Natural Sciences and specifically the study field of Biochemistry. Both programmes were established and registered in 1997 and are currently hosted by VU Faculty of Chemistry and Geosciences (FCHG) and Life Sciences Center (LSC), FCHG having a major role in the 1st and LSC in the 2nd cycle programme. The 1st cycle programme is a 4-year (eight semesters, 240 ECTS) programme leading to a Bachelor´s degree in Life Sciences, whereas the 2nd cycle programme comprises two years of full-time studies (120 ECTS) and results in a Master´s degree in Life Sciences. The programmes aim at providing training and education to biochemistry professionals in academia and in various public and private sector areas, especially in the growing biotechnological and pharmaceutical industry, fields of strategic importance to Lithuania.

Previous external evaluations

The previous external evaluation of 1st and 2nd cycle Biochemistry programmes was carried out in 2014. Both programmes received a very positive evaluation (22 points from the six evaluation areas). For both programmes, positive comments were largely shared by the two programmes and related to the general structure of the curriculum, the high quality of research activity of the teaching staff, integration of students in research from early on their studies and the high level of satisfaction among the employers with the competencies and skills of the graduates. Recommendations for improvement included enhancing the efficiency of student feedback surveys as a tool in programme development, strengthening the role of the study programme committee (SPC), adding bioethics and research ethics in the curriculum and increasing the number of state-supported study places. In addition, it was suggested that the Master´s programme should explore possibilities to streamline the procedures related to student placement to laboratories for lab practice and that English should be allowed as the language in Master´s Theses.

Documents and information used in the review

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

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

Additional sources of information used by the review panel:

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

- *Evaluation reports of Biochemistry 1st cycle (612C73001) and 2nd cycle (621C73001) Study Programmes in Vilnius University, 2014*

II. STUDY PROGRAMMES IN THE FIELD

	First cycle/LTQF 6	Second cycle/LTQF 7
Title of the study programme	**Biochemistry**	**Biochemistry**
State code	6121DX009	6211DX010
Type of study (college/university)	University studies	University studies
Mode of study (full time/part time) and nominal duration (in years)	Full-time, 4-year studies	Full-time, 2-year studies
Workload in ECTS	240	120
Award (degree and/or professional qualification)	Bachelor of Life Sciences	Master of Life Sciences
Language of instruction	Lithuanian	Lithuanian, English
Admission requirements	High school education	Higher (Bachelor's degree or equivalent) Bachelor's qualification
First registration date	1997-05-19	1997-05-19
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 Biochemistry field of study is given a **positive** evaluation.

No.	Evaluation Area	Evaluation points[1*]
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	4
5.	Teaching staff	4
6.	Learning facilities and resources	5
7.	Quality assurance and public information	5
	Total:	31

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

No.	Evaluation Area	Evaluation points[2*]
1.	Study aims, learning outcomes and curriculum	5
2.	Links between scientific (or artistic) research and higher education	5
3.	Student admission and support	3
4.	Teaching and learning, student assessment, and graduate employment	4
5.	Teaching staff	4
6.	Learning facilities and resources	5
7.	Quality assurance and public information	5
	Total:	31

[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.

IV. STUDY FIELD ANALYSIS

AREA 1: STUDY AIMS, LEARNING OUTCOMES AND CURRICULUM

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

FACTUAL SITUATION

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

The foundation of the first-cycle Biochemistry programme demonstrates a profound alignment with both the strategic vision of the Higher Education Institution (HEI) and the pronounced economic imperatives of the nation. The programme's existence is justified by the established need for foundational specialists who can subsequently contribute to the rapidly expanding biotechnology, biomedical, and pharmaceutical sectors, a growth area nationally recognised for its substantial (ten-fold) expansion over the last decade.

The learning outcomes, detailed in the programmatic documentation, are highly relevant and comprehensive. They are uniquely structured to provide a robust theoretical grounding across core chemical disciplines (analytical, organic, physical) integrated with fundamental biological and biochemical knowledge. Furthermore, the intended outcomes emphasise practical laboratory proficiency and the ability to apply scientific methodology to solve diverse environmental and scientific challenges, ensuring graduates possess immediately transferable technical competencies.

Regarding the rationale for implementing a single programme in the first cycle, the strategy is deemed sound. It leverages the HEI's considerable academic and research resources, ensuring quality and critical mass rather than fragmentation. This concentration of effort is further rationalised by the HEI's unique position as the sole provider of both first- and second-cycle studies in this specific field nationally. Development possibilities are embedded through mechanisms such as the substantial research integration (Section 2) and the provision for individual study plans, allowing for sustained curricular adaptation in response to evolving scientific knowledge. Rating Scale: 4 (Very good)

The second-cycle Master's programme exhibits an exemplary degree of alignment with national economic needs and the HEI's strategic commitment to research excellence. This cycle is explicitly designed to produce highly qualified specialists capable of independent scientific and professional activity, a requisite for sustaining leadership within the high-value, knowledge-intensive national biotechnology industry.

The uniqueness and high relevance of the learning outcomes are evident in the focus on advanced research competencies, including the ability to identify complex scientific problems, implement modern analytical methods, and work effectively in interdisciplinary research settings. The Master's curriculum integrates modules focused on applied industrial knowledge, such as managerial principles within a modern biotechnology enterprise, ensuring direct relevance to industry leadership roles. Furthermore, the demonstrated selection of final thesis topics, which consistently address contemporary and frontier research areas (e.g., advanced gene-editing systems, viral diagnostics, single-cell analysis), provides concrete evidence of alignment with international scientific trends and industrial application needs.

The coherence of maintaining a singular Master's programme is firmly substantiated by the need to integrate study with high-level research activities (Section 2). This ensures optimal leverage of the HEI's advanced research infrastructure and academic staff capacity. The programme is structured for continuous development through significant optional course selection and research project modules.

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

The Bachelor of Life Sciences (Biochemistry) programme is structurally and fundamentally aligned with the overarching mission and strategic goals of Vilnius University (VU), particularly its commitment to research excellence and integrated, modern academic instruction. The HEI's mission, which prioritises linking studies with scientific activity, is visibly realised in this first-cycle programme. The explicit study aims detailed in the programme documentation focus on imparting foundational knowledge in core chemical and biological sciences, while simultaneously developing the ability to perform biochemical laboratory techniques and think scientifically and independently. This structure directly supports the HEI's strategic goal of educating a new generation of researchers and highly skilled professionals.

The relevance and uniqueness of the learning outcomes are anchored in the programme's strong chemical foundation, which differentiates it from other life sciences programmes and better prepares graduates for interdisciplinary scientific careers. Furthermore, the obligatory experiment-based graduation thesis for all students ensures direct exposure to research methodologies, a clear manifestation of the strategic objective to integrate studies and research.

The rationale for the number of programmes (one Bachelor's programme) is justified by the strategic focus on concentrating academic and research potential, given VU's status as the sole university nationally offering both first- and second-cycle studies in this specific field. The possibilities for development are intrinsically linked to the high-level research infrastructure and the dedicated involvement of Research Professors and Senior Researchers in the teaching process (Section 2).

The Master of Life Sciences (Biochemistry) programme represents the zenith of the HEI’s strategic commitment to advanced research and highly specialised education. The programme's aims are to cultivate specialists capable of independent scientific and professional activity, which directly correlates with the HEI's goal of producing graduates who can lead innovation in high-value, knowledge-intensive sectors.

The relevance and uniqueness of the learning outcomes are exemplified by the program's design, where a substantial portion of credits is allocated to compulsory Research Projects throughout the first three semesters. This structure rigorously develops advanced research skills and the ability to work on interdisciplinary projects. The thesis topics presented (SER, Annex 4) clearly reflect engagement with cutting-edge research (e.g., advanced CRISPR-Cas systems, single-cell gene expression research), validating the active integration of the latest research into the curriculum (Section 2).

The programme's rationale is to act as the primary conduit for translating the HEI’s dominant research potential in life sciences into highly skilled human capital. Development possibilities are proactively addressed through the inclusion of optional courses that delve into specialised, contemporary areas (e.g., Single molecule methods, X-ray structural analysis), ensuring the continuous evolution of competencies required for scientific leadership.

ANALYSIS AND CONCLUSION (regarding 1.1.)

Bachelor of Life Sciences (Biochemistry). The aims and outcomes of the first-cycle programme are not merely compliant with regulatory standards but are strategically positioned to address the high-demand needs of a specialised national economic sector. The HEI successfully articulates a rationale for the structure and concentration of its offerings, supported by a curriculum that balances fundamental science with applied laboratory skills. The inherent link to the high-level research environment provides a clear pathway for continued development and relevance.

The programme's aims and intended learning outcomes are in clear and strong conformity with the institutional mission to be a leading research and educational HEI. The curriculum design, particularly the emphasis on a strong chemical basis and mandatory research-based final projects, serves as a direct, non-ambiguous operationalisation of the university's strategic objectives for academic and scientific excellence. The alignment is systematic and demonstrably enforced through academic policy.

Master of Life Sciences (Biochemistry). The programme's objectives are entirely fulfilled, demonstrating a direct and systematic integration with the HEI's research mission and the advanced needs of the labour market. The second-cycle curriculum effectively transitions students from foundational knowledge acquisition to highly autonomous research and professional problem-solving, thereby fulfilling the highest mandates of the study cycle descriptor. The evidence from research output (SER, Annex 4) confirms the programmes' engagement with cutting-edge scientific fields relevant to the modern economy.

The programme demonstrates an exceptional level of coherence with the HEI's strategic mandate for research intensity and the production of independent scientific professionals. The study structure is optimally designed to leverage the institution's research strength, positioning the programme not just as an educational offering but as an integral component of the HEI's scientific ecosystem. The learning outcomes go beyond minimum standards, directly targeting the high-level competencies articulated in the Descriptor of Study Cycles for the second cycle.

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 Bachelor of Life Sciences (Biochemistry) programme exhibits a clear and systematic compliance with national legal requirements governing study implementation. Key compliance elements include the defined programme scope of 240 European Credit Transfer and Accumulation System (ECTS) credits and a full-time duration of four years, which aligns precisely with the general requirements for the first study cycle as defined in the Descriptor of Study Cycles. The qualification awarded, Bachelor of Life Sciences, is consistent with the level and field of study.

The programme content and structure demonstrate compliance with legal mandates concerning the necessary components of a first-cycle programme. Specifically, the curriculum plans (Annex 2) show a coherent sequence of mandatory and optional course units that develop the required subject-specific and general competences. The inclusion of a mandatory experiment-based final thesis

reinforces the practical component required for a university-level study programme. Furthermore, the systematic presentation of the cohesion between learning outcomes, course units, and assessment methods provides documented evidence of a structured approach designed to ensure students achieve the legally mandated study aims.

The rationale for the number of programmes (one, non-fragmented Bachelor's offering) and the potential for its development are not hampered by any statutory non-compliance. Instead, the concentration of the programme leverages the HEI's considerable resources, which is a sound operational decision within the legal framework.

Master of Life Sciences (Biochemistry) programme unequivocally meets the statutory requirements for the second study cycle. It adheres to the established norms with a programme scope of 120 ECTS credits and a full-time duration of two years. The awarded qualification, Master of Life Sciences, is correct for a university-level second-cycle programme focused on advanced disciplinary expertise. Compliance is further substantiated by the robust emphasis on the development of autonomous research skills. This research focus, which is paramount in the Descriptor of Study Cycles for the second cycle, is operationalised through compulsory Research Projects and the preparation of a final Master's thesis. The course plans confirm that the programme effectively allocates a significant portion of the total workload to these research and independent study components, surpassing mere minimal adherence.

The programme's uniqueness lies in its optional dual-language (Lithuanian and English) instruction pathway, a strategic decision that exceeds statutory mandates and enhances the international character of the programme. The rationale for the singular Master's programme is strategically sound, ensuring that all available advanced research infrastructure and highly qualified staff (Section 2) are channelled into a single, high-quality offering, which is permissible and advantageous within the legal framework.

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

The Bachelor's programme demonstrates a systematic and robust alignment between its foundational study aims, the specified learning outcomes, and the deployed teaching, learning, and assessment methods. The coherence is structurally confirmed by the detailed mappings provided (SER, Annex 3), ensuring that the methods chosen are intentionally designed to achieve the predetermined competences.

In promoting student personal autonomy and active methodologies, the programme excels by implementing student-centred approaches. This includes the utilisation of task-based learning, discussions, debates, case studies, and reflection. A notable feature of student autonomy is the allocation of 60 ECTS for individual studies from 2023, allowing students to tailor their academic path, which is a significant structural commitment to personalised learning. Furthermore, the development of research skills, a core learning outcome, is systematically achieved through independent work or group tasks horizontally integrated across multiple course units.

The assessment strategy is designed to function as a training-oriented tool, fostering continuous and formative assessment. Methods such as the use of Learner folders, note-taking exercises, summaries, and team poster presentations (SER, Annex 3) are inherently continuous, providing opportunities for diagnostic feedback prior to summative evaluation. The emphasis on scientific research work as part of the cumulative assessment also reinforces the formative loop by applying theoretical knowledge in practical, assessed contexts.

The HEI displays an interest in educational innovation through the engagement of lecturers who are active researchers, ensuring the latest scientific developments are integrated into teaching. The faculty's proactive involvement in competence training further supports the necessary pedagogical skills to deliver these modern, student-centred methods.

The Master's programme exhibits exceptional alignment, where the advanced aims – specifically the cultivation of independent, research-capable specialists – are perfectly matched by the methodology and assessment. The high degree of student personal autonomy is not merely promoted but is structurally demanded by the mandatory inclusion of Research Projects throughout the curriculum. This requires sustained, self-directed engagement in high-level scientific inquiry (Section 2), which is the most effective means to achieve the required second-cycle research competences (Descriptor of Study Cycles).

Active and participatory methodologies are intrinsic to the Master's level, where course units are closely integrated with the HEI's leading research potential (Section 2). Learning predominantly occurs through seminars, research group meetings, and problem-solving within the context of scientific projects, effectively constituting a shared construction of learning between active research faculty and students.

The assessment strategy is fundamentally training-oriented, with cumulative assessment, including significant weight given to the progression and quality of the Master's final thesis and associated research reports. This structure ensures that assessment is continuous and focuses on the development of high-level intellectual and practical research skills, which is the primary learning outcome of the second cycle. The provision of feedback on decisions from lecturers and the Study Programme Committee (SPC) confirms a commitment to a functional, training-focused quality assurance loop.

1.2.3. Curriculum ensures consistent development of student competences

The curriculum for the Bachelor of Life Sciences (Biochemistry) programme is meticulously structured to ensure the consistent and progressive development of student competences from foundational concepts to preparatory research skills. The sequencing of course units reveals a logical flow, beginning with robust, broad foundational knowledge in General Chemistry, General Biology, and Mathematics in the initial semesters. This systematic introduction of core scientific principles establishes the necessary cognitive base before advancing to discipline-specific subjects.

Competence progression is clearly visible in the transition from theoretical course units to applied laboratory work and independent study. For instance, the programme moves from basic principles to more complex, integrated subjects like Biophysics and Structural Biology, and culminates in the mandatory experiment-based final thesis. This structure systematically ensures that students evolve from knowledge acquisition (first year) to application and foundational research (third and fourth years), aligning with the competence development trajectory mandated by the Descriptor of Study Cycles for the first cycle.

The cohesion matrix provides rigorous documentation, explicitly linking specific course unit learning outcomes and assessment methods to the broader programme outcomes, thereby verifying a conscious design for competence maturation. The relevance and uniqueness of the learning outcomes, particularly the early introduction to sophisticated analytical techniques and scientific writing, ensure a high level of preparedness for advanced Master's study or direct entry into the labour market, thus facilitating continuous professional development. The programme's structure, as

the sole Bachelor offering in the field, further ensures a focused, high-quality developmental pathway.

The Master of Life Sciences (Biochemistry) programme demonstrates an advanced and highly coherent model for consistent competence development, transitioning students from a Bachelor-level understanding to autonomous scientific and professional leadership. The programme's structure is fundamentally designed around the intensive development of research skills, a critical second-cycle competence.

The core developmental sequence is concentrated around the compulsory Research Projects which, unlike traditional course units, demand continuous, self-directed application of knowledge and problem-solving over multiple semesters. This project-based structure ensures that competencies such as identifying and addressing complex scientific problems, conducting independent research, and applying analytical thinking are not simply taught but are actively practiced and matured over the programme's duration. The Master's thesis topics are of a complexity and originality appropriate for demonstrating the fully developed, autonomous research competence required by the second cycle.

Furthermore, the integration of specialised optional courses (e.g., Single Molecule Methods, Bionanotechnology) allows students to tailor their expertise in line with their personal development goals and the latest research trends (Section 2), confirming the programme's potential for continuous, state-of-the-art development. The cohesive Master's structure, as the only offering, prevents the fragmentation of advanced expertise and resources, thus guaranteeing a consistent, high-calibre developmental experience.

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

The Bachelor of Life Sciences (Biochemistry) programme ensures adequate opportunities for students to personalise their curriculum, aligning with the necessity for broad scientific grounding in the first study cycle. Personalisation is primarily achieved through the structured inclusion of elective and optional course units. Specifically, General University Study (GUS) courses are integrated into the optional course unit workload, allowing students to develop transferable competences or explore subjects outside the core field. Furthermore, the allocation of a considerable portion of the workload to individual studies (60 ECTS) provides a structural mechanism for promoting student autonomy and self-directed learning.

The final thesis process serves as the most critical element of personalisation in the final year. The student's choice of an experiment-based topic and supervisor allows for deep engagement with a specialised area of research. The formal regulations regarding the thesis process are robust, ensuring compliance with cycle requirements. The Thesis Defence Committee is composed of five competent specialists, including at least one external member from business or academia. This ensures that the evaluation is objective and relevant to both the academic field and external professional needs. The process is transparent, conducted at an open meeting, and follows explicit guidelines for review and submission.

The Master of Life Sciences (Biochemistry) programme provides extensive opportunities for curriculum personalisation, commensurate with the advanced, specialisation-focused nature of the second study cycle. Personalisation is achieved through multiple integrated mechanisms: In this regard we note that the curriculum includes a wide array of highly specialised optional course units,

such as 'X-ray structural analysis' and 'Single molecule methods', which enable students to tailor their academic path towards specific research and career interests, leveraging the HEI's high-level research specialities (Section 2).

The programme's core is the intensive research component (Research Projects and Final Thesis). The student's choice of a research topic and supervisor determines the field of specialisation, from cutting-edge areas like CRISPR-Cas systems to single-cell gene expression research, representing the highest degree of personalisation.

The final thesis process aligns with the demanding requirements of the second cycle, necessitating the demonstration of autonomous scientific capability. The formal regulations governing the thesis – including the requirement for competent committees and the open defence – ensure that the process is academically rigorous and compliant with national standards.

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

The final theses for the Bachelor of Life Sciences (Biochemistry) programme demonstrate full compliance with the requirements for the field and the first study cycle.

The Descriptor of Study Cycles mandates that a first-cycle final thesis should demonstrate the application of fundamental knowledge and the ability to solve problems using established methods. The Biochemistry programme rigorously enforces an experiment-based final thesis, ensuring the practical application of disciplinary knowledge. The titles presented (SER, Annex 4) confirm this mandate, covering diverse, application-focused areas such as, Protein Production and Inhibition Studies (e.g., SARS-CoV-2 proteins); Development and Testing of Diagnostic Tests or Investigation of Enzyme Catalytic Mutants. These topics require the student to execute practical, laboratory-based projects that test their core technical competencies and analytical skills, which is appropriate for the level of competence required upon graduation from the first cycle.

The consistency of theses focusing on contemporary biomedical and biotechnological problems showcases the relevance of the programme and the high level of integration with the research environment (Section 2). The thesis process, which includes a formal defence before a committee with external members, verifies that the work meets both academic standards and professional expectations, thus reinforcing the quality and ensuring that the work is appropriately assessed against the intended learning outcomes.

The final theses for the Master of Life Sciences (Biochemistry) programme exhibit exceptional compliance with the advanced requirements for the field and the second study cycle.

The Descriptor of Study Cycles demands that a second-cycle thesis must demonstrate the ability to conduct independent scientific research, solve complex scientific issues, and expand the limits of knowledge. The programme's mandatory research projects and final theses consistently meet this standard. The topics listed are highly specialised and cutting-edge, including Functional and Structural Analysis of Advanced CRISPR-Cas Systems; Development of Microcapsules for Single-cell Gene Expression Research or Optimization of Next-Generation Sequencing Reactions. These subjects require students to engage with frontier research, generating original data and complex analyses suitable for potential scientific publication, thereby fulfilling the mandate for independent scientific contribution and advanced problem-solving as required by the Master's cycle.

The consistent depth and novelty of the Master's thesis topics confirm the highly successful link between research and studies (Section 2). The topics are drawn directly from the active research specialities of the academic staff, which ensures that the student's work is relevant and unique on a national and often international scale. The rigorous defence and committee structure (including externals) maintains the high academic standard required for the award of the Master of Life Sciences qualification.

ANALYSIS AND CONCLUSION (regarding 1.2.)

The Vilnius University Biochemistry programmes (Bachelor's and Master's in Life Sciences) demonstrates a systematic and exemplary level of coherence, compliance, and integration with the contemporary scientific and socioeconomic environment.

Programme aims and learning outcomes exhibit strong and clear conformity with the HEI's institutional mission, which prioritizes excellence in research and modern instruction. The programmes are strategically designed to meet the high national demand within the biotechnology, biomedical, and pharmaceutical sectors. This alignment is operationalized directly through a curriculum founded on a robust chemical basis and the mandatory requirement for experimental final theses, thereby intrinsically linking training to cutting-edge scientific activity. Coherence is structurally reinforced by the strategic decision to maintain a single programme per cycle, which concentrates the HEI's high-level research resources.

Regulatory compliance is fully established with national legal requirements concerning ECTS, duration, and qualification awarded across both cycles. The alignment between aims, outcomes, teaching, and assessment is robust, underpinned by detailed curricular mapping that confirms methodological intentionality. The Bachelor's programme fosters student autonomy through active methodologies and the explicit allocation of 60 ECTS for individual studies, an exemplary provision allowing for the formal personalisation of the academic trajectory. The consistent development of student competences is ensured by a logical curriculum sequence, progressing systematically from foundational scientific knowledge (Chemistry, Biology) to autonomous application and independent research, culminating in complex projects. In the Master's cycle, this progression is intensified by the mandatory inclusion of Research Projects over multiple semesters, which demands the continuous and self-directed application of knowledge. Finally, the final theses fully comply with field and cycle requirements, with Master's theses demonstrating active engagement with high-impact contemporary research areas, validating a highly competitive international quality standard.

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 HEI's strategic decision to maintain a single, comprehensive programme across both cycles, concentrating resources and expertise, is a superior approach that ensures the highest academic standards and research integration, capitalizing on its position as the sole national provider for both levels in the discipline.

2. The exemplary practice of explicitly and structurally allocating 60 ECTS for individual studies within the Bachelor's programme represents an advanced methodological commitment to promoting student autonomy and learning personalization.

3. The practice of requiring a mandatory experimentation-based final thesis in both Bachelor's and Master's cycles, coupled with the substantial credit allocation to Research Projects in the Master's cycle, guarantees the rigorous achievement of the required research competencies for tertiary education.

RECOMMENDATIONS

To address shortcomings

None

For further improvement

1. Conduct a critical analysis of the distribution of laboratory work within the Bachelor's programme to incorporate more practices specifically focused on biochemistry, rebalancing the current emphasis on chemistry and aligning it with the practical evolution of the field and documented student demand.

2. Address the deficiencies identified by alumni in essential transferable skills (such as grant writing, leadership, and collaboration) to facilitate the necessary transition from technical competence to professional and research autonomy, a crucial capacity in the high-tech sector.

3. Strengthen training in scientific communication by exploring the integration of a dedicated and mandatory scientific writing course that goes beyond the current optional offering, given its importance as a core skill for the effective dissemination and impact of advanced research.

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

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

FACTUAL SITUATION

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

In Vilnius University (VU) research in the field of biochemistry is carried out in the Institute of Chemistry of the Faculty of Chemistry and Geosciences (FCHG, host of the 1st cycle study programme) and in the Institutes of Biochemistry, Biotechnology and Biosciences of the Life Sciences Center (LSC, host of the 2nd cycle study programme). Research topics range broadly from

protein-ligand interactions and enzymatic mechanisms to genome editing and nanobiotechnology, all highly relevent to the study field of the programmes. The quality of research is at a high level as judged by publications in high-impact journals (including, e.g., Nature, Science, Molecular Cell, Nature Communications, Nucleic Acid Research), prestigious research prizes (e.g., Kavli Prize) and grants (e.g., ERC Advanced and Starting grants) awarded to VU scientists and speaker invitations to big international meetings. In several research areas, VU scientists are among the international leaders in the field (e.g., CRISPR, protein modelling, epigenetics). The high scientific quality of research done has been recognised also in national research evaluations and in funding of research project. In the latest five year evaluation (2018-2022) of research and development activities, the biochemistry research unit of VU received the maximum score of 5 in two areas, the quality of research and the development potential, and a score of 4.5 in the economic and social impact (SER, p. 20). FCHG and especially LSC scientists in the field of biochemistry have been successful in attracting research funding: during the period 2020-2023, 23 projects with international funding (e.g., EU programs, joint binational programs) and 65 projects with national funding (often RCL) were active (SER, Table 23).

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

Scientific research and its methods and the latest development are linked to the curricula of the 1st and 2nd cycle biochemistry study through lecture courses, hands-on practical laboratory work (e.g., Professional Practice I-II in the Bachelor´s programme, Research Project in the Master´s programme) and, most importantly, in the final theses (Bachelor´s thesis, 15 ECTS; Master´s Thesis, 30 ECTS). The teachers in the Bachelor´s and Master´s study programes are also active researchers, often internationally recognized experts in their specific fields, and teach courses on themes which fit their expertise. Therefore, the teachers are able to keep their courses up-to-date and integrate the latest development in the field to teaching. The Bachelor´s and Master´s theses are generally done under supervision of FCHG or LSC scientists on topics related to the ongoing research. In the study year 2022-2023, 13 Bachelor´s programme students and 22 Master´s programme students participated in the active research projects as part of the research team and directly contributed to their scientific output, including research publications (SER, Table 2.4). In addition to FCHG and LSC, research internships and final theses can be done in the laboratories of the social partners of the study programmes.

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

At the very start of their studies, the students of both programmes are informed of the ongoing research in the field and are welcomed to join the research groups. According to discussions the evaluation panel had with students and teachers during the site visit, the students are able to find the host laboratory and supervisor for internships, theses and other scientific work relatively easily, although there may be some competition for the labs regarded as most attractive or interesting. Finding a host and supervisor and topics for research work outside of FCHG-LSC has been found somewhat more difficult.

The percentage of students involved in various research activities (e.g., research presentations, research internships, summer camps, actual work in the research groups, etc.) has increased in from 10 in 2022 to 34 in 2024 in the 1st cycle programme and from 55 to 65 in the Master´s programme in the same period (SER, Table 2.4.)

Nature of the research work is relevant to the study field and compatible with the study cycle as evident from the list of research internship projects performed in study years 2020-2023 in the 1st and 2nd cycle programmes (SER, Table 2.5.) and from the corresponding list of the final thesis topics in the Bachelor´s and Master´s programmes (Appendix 4). Judging from the titles, the emphasis of

the research projects are more in the basic techniques and methods in the 1st cycle programme, whereas in the 2nd cycle programme the scientific content and ambition becomes more important, consistent with study cycle.

ANALYSIS AND CONCLUSION (regarding 2.1.)

The research in the field of biochemistry in VU is active and at very high scientific level, as evidenced by the number and quality of publications, level of research funding, results of research evaluations and the number of international prizes and other recognitions. Therefore, it can be stated that the research in the field more than fully meets the aim of sufficient level to support both 1st and 2nd cycle study programmes. The high level of research benefits the students by providing research training in an excellent environment in both programmes and on topics often representing cutting edge science. Very likely this is also a factor which inspires the current students enrolled in the 1st and 2nd cycle study programmes and helps attract the best prospective students to study biochemistry in VU.

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 internationally recognized high scientific level of the research in biochemistry in VU provides an excellent and inspirational environment for the training of specialists in biochemical research.

2. The students are invited to join the research teams early in their studies.

RECOMMENDATIONS

To address shortcomings

None

For further improvement

1. Consider advertising the research works and final thesis projects available in FCHG and LSC and in their social partners on the website of the programmes or via other means to give the students a broad view of the variety and range of the projects (and the study field) and ensure that all students are equally informed of the options.

AREA 3: STUDENT ADMISSION AND SUPPORT

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

FACTUAL SITUATION

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

Admission to the Biochemistry study field programmes at Vilnius University is conducted in accordance with national regulations and Vilnius University–approved admission procedures, ensuring transparency, comparability and alignment with the intended learning outcomes of the programmes. Admission to first-cycle (Bachelor's) studies is organised centrally through the LAMA BPO joint admission system, while admission to second-cycle (Master's) studies is carried out directly by Vilnius University according to Senate-approved institutional rules. For the first-cycle Biochemistry programme, applicants must have completed secondary education and passed three compulsory state matriculation examinations: Chemistry, Lithuanian Language and Literature, and one additional subject selected by the applicant (Biology, Mathematics, Physics or Information Technology). The competitive admission score is calculated using a weighted formula, where Chemistry accounts for 40% of the score, Lithuanian Language and Literature for 20%, the second chosen subject for 20%, and an additional subject for 20%, with the possibility of receiving extra points for academic achievements, Olympiad results, voluntary activities or other nationally regulated merits. Candidates whose competitive score does not reach the minimum threshold are not admitted, ensuring that admitted students possess the academic background required for successful studies. During the period 2021–2023, the demand for first-cycle Biochemistry studies remained stable. In 2021, 65 applicants listed the programme as their first priority for state-funded places, compared to 61 in 2022 and 56 in 2023. In the same period, 59 students signed state-funded study agreements in 2021, 49 in 2022 and 51 in 2023, while only 1–2 students per year were admitted to non-state-funded places. This indicates strong applicant motivation and competitiveness, as the absolute majority of admitted students qualified for state-funded studies. Admission scores further confirm this trend: the average entrance score for state-funded first-cycle students was 8.62 in 2021, 8.73 in 2022 and 8.43 in 2023, with the highest scores exceeding 10 due to additional points for achievements. Dropout considerations are taken into account when planning admission numbers, as the Faculty aims to maintain an optimal cohort size of approximately 50 students for laboratory-based studies.

Admission to the second-cycle Biochemistry programme is regulated by the Vilnius University Admissions Procedure for Second-Cycle Study Programmes. Applicants must hold a Bachelor's degree in Biochemistry or a closely related field and meet clearly defined academic requirements. In addition, applicants are required to pass an entrance examination (test), which assesses their knowledge in core biochemistry subjects and readiness for advanced studies. The admission score is calculated based on prior study results, Bachelor's thesis or final examination grades, and the results of the entrance examination, ensuring that admitted students are academically prepared for the programme. During 2021–2023, 22, 19 and 13 applicants, respectively, listed the programme as their first priority for state-funded second-cycle studies. In the same years, 13, 15 and 13 students signed state-funded study agreements, with no admissions to non-state-funded places, demonstrating both selectivity and stable demand. The Master´s programme has currently has no international students much because the high admission threshold set by the requirement of a few specific Bachelor´s studies courses. The strict adherence to this requirement strongly favours VU BSc Biochemistry graduates and effectively excludes prospective students from foreign countries

(and to some extent even from other domestic universities). While this is not viewed as problematic by the programme, it limits internationalization and leads to loss of potential talents.

Overall, the admission criteria and procedures for both cycles are clearly defined, publicly available and consistently applied. Quantitative admission data demonstrate stable applicant interest, transparent selection based on competitive scores and appropriate alignment between admission requirements and the learning outcomes of the Biochemistry study field.

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

According to the requirements of Methodology Annex 1, the Self-Assessment Report presents the principles governing the recognition of foreign qualifications, partial learning outcomes, prior formal, non-formal and informal learning, their application in practice, and data from the last three years on recognised and non-recognised cases. Vilnius University applies the recognition of foreign qualifications and partial studies in accordance with national legislation, institutional regulations and guidelines issued by the Centre for Quality Assessment in Higher Education (SKVC). Recognition procedures are centrally coordinated and are publicly available on the University website. The recognition framework covers qualifications acquired abroad, learning outcomes achieved during partial studies at foreign higher education institutions, as well as competences acquired through non-formal and informal learning. Decisions on recognition are made following an assessment of the level, scope and content of learning outcomes and their compatibility with the learning outcomes of the Biochemistry study field programmes. Recognition of prior learning is implemented through clearly defined institutional procedures that allow applicants and enrolled students to request formal acknowledgement of previously acquired competences. These procedures apply to both first- and second-cycle studies and ensure transparency, consistency and equal treatment of applicants. Information on recognition requirements, documentation and decision-making processes is accessible to prospective and current students through official university channels. During the period 2021–2023, no applications for the recognition of foreign qualifications, partial studies or prior non-formal and informal learning were submitted by students of the Biochemistry study field. Consequently, no recognition decisions were taken, and no cases of non-recognition were recorded during the last three years. Although no practical cases occurred in the reporting period, the institutional framework for recognition is fully established, regularly updated and ready to be applied when such requests arise.

ANALYSIS AND CONCLUSION (regarding 3.1.)

The analysis of the factual information presented in Sections 3.1.1 and 3.1.2 demonstrates that student selection, admission and recognition procedures in the Biochemistry study field at Vilnius University are clearly defined, transparent and consistently implemented for both first- and second-cycle programmes. Admission requirements are aligned with national regulations and institutional rules and ensure that admitted students possess the academic background necessary to achieve the intended learning outcomes of the programmes. Admission data over the last three years indicate stable demand for both cycles and demonstrate that selection is based on competitive criteria. The use of clearly defined admission scores, publicly available admission requirements and centralised admission procedures ensures equal treatment of applicants and transparency of decision-making. The admission outcomes reflect the academic selectivity of the programmes and confirm that admitted students are adequately prepared for laboratory-based and research-oriented studies. However, the admission policy of the 2nd cycle program is very strict and makes it very difficult for graduates from foreign universities to enter the programme. Overall, the principles and procedures for the recognition of foreign qualifications, partial studies and prior learning are fully in line with

national legislation and institutional regulations. Although no recognition cases occurred during the reporting period, the analysis confirms that the recognition framework is clearly established, publicly accessible and ready to be applied when required. The absence of recognition cases reflects the limited number of relevant applications rather than any deficiencies in the procedures themselves.

Based on the factual evidence provided in the Self-Evaluation Report and the analysis of admission and recognition arrangements, the requirements of Standard 3.1 “Student selection and admission is in line with the learning outcomes” are fulfilled. The existing system supports transparent admission, fair selection and appropriate recognition practices, thereby contributing to the effective implementation of the Biochemistry study field programmes.

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

FACTUAL SITUATION

3.2.1. Opportunities for student academic mobility are ensured

Information on student academic mobility opportunities at Vilnius University is publicly available through the University website, faculty websites and the Study Information System, where students can access information on Erasmus+, Nordplus, ISEP and bilateral exchange programmes, as well as international traineeship opportunities related to the Biochemistry study field. Additional information and individual consultations are provided by the International Relations Office, faculty-level international coordinators and study programme representatives. Students of both first- and second-cycle Biochemistry programmes are eligible to participate in academic mobility for partial studies or traineeships abroad in accordance with institutional regulations and approved learning agreements. According to the Self-Assessment Report, during the period 2021–2023, outgoing academic mobility in the Biochemistry study field remained limited. In total, six first-cycle students and one second-cycle student participated in partial studies or internships abroad under Erasmus+ or other international mobility schemes. These mobility periods were implemented as short-term or semester-based activities aligned with individual study plans. The SER does not provide aggregated data disaggregated by year and cycle for outgoing mobility covering the full three-year period, nor does it specify the proportion of mobile students relative to the total number of enrolled students. Incoming mobility for full-time studies in the Biochemistry study field was also limited during the evaluation period. While the SER confirms the availability of institutional agreements enabling incoming mobility, no numerical data are provided on the number of incoming students enrolled in full-cycle Biochemistry studies over the last three years. During discussions with students, it was indicated that participation in academic mobility is constrained by practical considerations rather than by the availability of institutional opportunities. Students reported difficulties in identifying partner institutions offering specialised biochemistry modules compatible with their study plans, as well as concerns related to competitive funding and financial feasibility. These factors contribute to the low uptake of outgoing mobility despite the existence of formal mobility frameworks.

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

Vilnius University provides a comprehensive system of academic, financial, social, psychological and personal support to students of the Biochemistry study field at both first- and second-cycle levels. Academic support is provided through consultations with teaching staff, study programme

representatives and faculty academic consultants. Students receive guidance on study planning, course selection, assessment requirements and research activities through direct consultations, institutional email communication and the Study Information System. According to institutional data presented in the Self-Evaluation Report, more than 24,000 academic consultations were provided to students in 2021, over 27,000 consultations in 2022, and more than 20,000 consultations annually in previous years, indicating a high level of accessibility of academic support services.

Financial support is provided through a range of institutional and state-funded schemes. During the period 2020–2023, incentive scholarships were awarded to first- and second-cycle Biochemistry students based on academic performance. Specifically, 29, 43 and 38 first-cycle students and 6, 7 and 6 second-cycle students received incentive scholarships in the academic years 2020–2021, 2021–2022 and 2022–2023, respectively. One-off target scholarships were granted to 11, 11 and 16 first-cycle students and to 3, 10 and 4 second-cycle students during the same period. In addition, social scholarships provided by the State Studies Foundation were received by 11, 13 and 10 first-cycle students, while state-supported loans were granted to one student in 2020–2021 and three students in 2021–2022. Tuition fee reductions were applied in individual cases. The Grand Duchy of Lithuania scholarship was awarded to one first-cycle student in the academic year 2022–2023. The University, in cooperation with social partners, supports student participation in scientific activities by covering conference participation fees. Between 2020 and 2024, Biochemistry students received financial support for participation in international, national and student scientific conferences. For example, registration fees for the COINS International Conference were covered for six students in 2020–2021, nine students in 2021–2022 and between five and seven students annually during 2022–2024. Support for participation in national and student scientific conferences was also provided in selected years. Social support includes accommodation in university dormitories, which is available to students from outside Vilnius. According to the Self-Assessment Report, prior to the war in Ukraine, approximately 95% of Lithuanian students and 100% of international students who applied for dormitory accommodation were provided with places. Dormitory allocation is administered centrally by the University in accordance with institutional regulations. Psychological and personal support services are provided through the University's Community Development Division. Students are entitled to up to four free psychological counselling sessions, with additional support available in crisis situations. The University also organises seminars and workshops focusing on mental health, stress management and personal development, with partial reimbursement of participation costs. Issues related to equal opportunities, inclusion and support for students with disabilities are addressed through designated coordinators, ensuring individual accommodations when required. During discussions with students, it was confirmed that academic consultations and financial support measures are accessible and well known. Students emphasised the supportive attitude of teaching staff and the availability of counselling services. At the same time, students indicated that navigating the variety of support measures may require clearer communication, particularly for first-year students.

3.2.3. Higher education information and student counselling are sufficient

Students admitted to the Biochemistry study field programmes are introduced to their study programme and the university environment prior to the beginning of the academic year. Introductory activities are organised before 1 September, including orientation events coordinated by the Vilnius University Students' Representation (VUSR), during which new students receive initial information about study organisation, student representation, academic expectations and university services. In addition, the Student Life Guide prepared by VUSR is available in electronic format and provides structured information on academic regulations, student rights and responsibilities, support services, accommodation and extracurricular activities. During the course of studies, information on study

procedures, programme requirements, assessment methods and academic regulations is communicated through official university channels, including the Study Information System, faculty websites, Moodle, institutional email and direct consultations. Students receive guidance on study planning, thesis topic selection and research directions through consultations with lecturers, thesis supervisors and programme representatives. According to student feedback collected during the site visit, consultations are generally accessible, timely and helpful, particularly in relation to academic content and research-related matters.

ANALYSIS AND CONCLUSION (regarding 3.2.)

The analysis indicates that the study programmes of the field provide an effective student support system that contributes positively to students' academic progress. Students benefit from accessible academic guidance and regular consultations with lecturers, who are responsive to both course-related and research-related questions. Information on study organisation, requirements and assessment procedures is communicated clearly through official university channels, enabling students to plan and manage their studies effectively. Academic, financial, psychological and social support services are available at institutional level and are known to students. Feedback from students confirms that these support mechanisms are accessible and sufficient to address their academic and personal needs during the course of studies. Introductory activities and written information provided at the beginning of studies support students' integration into the academic environment and facilitate understanding of study requirements. While institutional opportunities for academic mobility exist, actual participation remains limited, primarily due to issues related to course compatibility at partner institutions and competitive funding conditions rather than deficiencies in support or administrative procedures.

Overall, the student support system functions effectively and provides a stable framework for learning, with mobility-related aspects identified as an area where practical accessibility could be further strengthened.

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 programme provides a supportive academic environment in which lecturers are accessible to students and offer timely and constructive feedback during the study process.

2. Students benefit from accessible academic, psychological, social and financial support services available at the institutional level, which contribute to their academic progress and well-being.

3. Positive communication between teaching staff and students supports effective learning and creates a favourable academic atmosphere throughout the studies.

RECOMMENDATIONS

To address shortcomings

1. In spite of its high esteem and excellent research-based education, the Master´s programme has no international students, due to the high admission threshold inherently favouring VU BS Biochemistry graduates. This policy limits internationalisation of the programme and leads to loss of potential talent. The expert panel strongly recommends reviewing the admission policy.

For further improvement

1. Both programmes should strengthen the practical accessibility of academic mobility by expanding cooperation with partner institutions offering compatible specialised biochemistry modules.

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

Students are encouraged to develop subject-specific knowledge and skills, and general competences required for modern day learning and the job market. The learning outcomes, teaching methods, and equipment meet these requirements and are directly linked to one another. The biochemistry study programme is a full-time programme that combines contact and non-contact methods, including small-group seminars averaging 15 students. It relies on self-study, which makes up 55% of the workload in the first cycle and 74% in the second. Practise-based learning is emphasized through internships worth 20 credits in the first cycle and 35 credits in the second. It is backed by numerous partner institutions, many of which later offer employment opportunities to students. For the purposes of students' internship, cooperation is carried out with a wide range of institutions: Thermo Fisher Scientific Baltics, National Cancer institute, Nature Research Center, Innovative Medicine Center, Vilnius University Hospital, companies Roche, Sicor Biotech, Nordway Biotech, CasZyme). From 2023, the programme structure includes 40 first-cycle courses and 24 in the second cycle, nearly all developing research and analytical skills. The SPC approves the learning outcomes and teaching methods used. The aims and learning outcomes in Appendix 1 are well described, although no learning outcome related to the efficient use of AI in studies is mentioned.

Students can assess their individual achievements and progress through feedback given directly from the teaching staff. The feedback is given in person, remotely, or via email. The main methods of assessment in the courses are *e.g.,* closed question test, open answer test, written essays, assessment of individual and group projects. The results are cumulative and communicated by the

Virtual Learning Environment (VLE) and MS teams platforms. Practical knowledge is acquired by participation in real or simulated activities covering a wide range of institutes operating in the respective area. The evaluation methods vary across courses, and include seminars, laboratory work, and final exams. Assessment criteria must be approved by the Study Programme Committee and reviewed by the Dean's Office. Students finalize their studies by a final thesis that needs to be defended before a committee. All assessments are similar for each student. Considering the rapid emergence of AI tools to teaching and learning, it is important that assessment of students´ individual work should be AI proof, but the SER does not outline how the programme plans to meet this - undoubtably tough - challenge. Naturally, use of tools for identifying use of AI for tasks in which it is not allowed has to be applied with care and the right should be reserved for the students for proper defence in cases of suspected violation of the rules.

After completing the first-cycle Biochemistry programme, students can opt for a second cycle studies in Biochemistry or related fields in Lithuania or abroad, which about 65% do. Of the second cycle graduates, about half pick research as a further course of action and become a PhD student in life science fields such as Biochemistry, Biology, Biotechnology, Chemistry, or Chemical Engineering. The rest is mainly employed in industry.

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

Vilnius University's Diversity and Equal Opportunities Strategy 2020–2025 commits to supporting socially vulnerable groups by adapting the learning environment, offering compensatory equipment, providing consultations, and allowing individual study plans. The Strategy addresses disability, gender equality, cultural diversity, social exclusion, and work–study balance through targeted initiatives. If a student experiences problems during their studies, being mental health issues or otherwise, they can contact psychologists. There are four free sessions to address these issues. Students may also personalise their individual study paths to deal with personal issues, and for instance have a break in studies to deal with psychological issues. This is allowed for by the Dean if provided with proof and if it lasts not longer than a year.

A disabilities affairs coordinator is appointed, who assists with any special needs the students may have. Each semester, the coordinator inventorises potential issues that may arise and assigns appropriate measures for these. Often applied means were: presentation of materials in an accessible format either visual or auditive, adaptation of the physical environment for accessibility, and extensions of study time. Two students made use of these facilities. Other socially vulnerable groups are provided with financial support, such as students from Belarus and Ukraine.
There is also gender equality coordinator, who is responsible for development of anti-discrimination policies and practices at the university. The gender equality coordinator initiates and coordinates changes to ensure equal opportunities for all students. Additionally, students may temporarily suspend studies or take academic leave for documented personal, health, pregnancy, or childcare reasons.

ANALYSIS AND CONCLUSION (regarding 4.1.)

The learning outcomes and teaching methods are well-adjusted to modern day teaching. The learning outcomes are well described in Appendix 1. Importantly, the assessment of the learning outcomes achieved by students should be AI proof, but the possible use of AI detection tools should be performed with care and a personal defence of written products should be warranted. The expert group would also suggest adding one learning outcome dedicated towards AI literacy to supplement the general guidelines provided by the VU.

Access to the university for socially vulnerable groups and students with disabilities is well arranged. The teaching staff knows about the arrangements that can be made to grant access to the biochemistry teaching programme. For the support, the waiting time for a psychologist was more than three months. This is a major problem that needs to be addressed.

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

The University monitors the progress of the students on three levels: the study programme, the course unit, and by surveys throughout the year. On the study programme level, the monitoring of the students is carried out by the SPC. Once every year, the SPC gathers information from the institutions where the internships were conducted. They also evaluate the final theses, the course units, and the number of students who went on academic leave or terminated their studies. Decisions are taken on basis of this data. The drop-out levels are also monitored by the Vilnius University Student Affairs and Career Office (SACO), to circumvent those by helping the students getting the necessary assistance should this be necessary. On the course unit level, the progress of students is monitored by the lecturer of the module by analysing the results of formative and summative assessments of the students. The students can track their own progress in the Virtual Learning Environment (VLE) system to plan their own approach to learning and give feedback. Progress on the level of all students of a given year, is monitored by the 'administration of study' department. If there are repeating trends in the evaluation of students, these data are discussed with the administrative staff, and measures will be taken if necessary.

Feedback is collected through surveys throughout the study for BSc and MSc students. The data are analysed and shared with stakeholders for quality improvement. Students have full access to their assessments and opportunities to seek additional clarification. There is a student representative in the SPC, to whom the students can go to with their comments and who helps communicate student perspectives on the study programme. The meetings are twice per year, one per semester. In these meetings, the programme is discussed. If the programme can be improved, the changes are implemented

4.2.2. Graduate employability and career are monitored

Graduate careers are monitored through the national Career Tracking Information System *karjera.lt.* The information is collected in two ways, objectively through state information systems and government and departmental registers, and subjectively through sociological surveys. Feedback from students during and after studies, from employers at the end of internships, and from alumni one, three, and five years after graduation is collected. However, the *karjera.lt.* system has limitations: it contains information only on graduates who remain in Lithuania, excludes those who are self-employed, and lacks data on graduates temporarily unable to work due to reasons such as parental leave, military service, or long-term illness. Despite these gaps, *karjera.lt* remains a useful tool for tracking trends in graduate employment.

VU data show that 25% of first-cycle Biochemistry graduates and 9.5% of second-cycle graduates continue their studies while unemployed. A 1.5% of the students contacted the Employment Services to find a job, and 6% of graduates did not submit data. In addition, 6% of second-cycle graduates report moving abroad. Among those employed, the majority work in high-skilled positions: 67.5% at the first-cycle level and 81% at the second-cycle level.

Graduates surveyed say that more flexible access to international internships and placements, career advice and information on job opportunities, encouragement to start looking for internships early, and the ability to combine study and work schedules are all needed for successful employment. Some alumni highlighted that their involvement in student organisations and being active in the university community was valuable experience that contributed to their personal and professional development.

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

VU bases its activity and relationships between the members of its community on principles outlined in the Statute of Vilnius University, Code of Academic Ethics of Vilnius University, Vilnius University Diversity and Equal Opportunities Strategy 2020-2025, and other documents.
VU embraces the diversity of opinions, ideas, respect, trust, and tolerance. Teaching staff and students must adhere to the Code of Academic Ethics of the VU. In case of cheating, plagiarism, fabrication and other dishonest behaviour, staff and students are reprimanded or expelled from the university. The assessment of students' achievements ensures that students adhere to the principles of fair conduct.

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

Students can appeal to the Dispute Resolution Commission in case they disagree with their final grade or interim assessment. The commission is composed of six members: three staff and three students. Only appeals against the final thesis assessment are not allowed. Decisions of the Dispute Resolution Commission are final. In case of disputes between research and study activities and between students themselves, the Dispute Resolution Commission also deals with those. In 2021-2024, only one appeal was filed concerning the final assessment of the student in course unit. VU has the Electronic Plagiarism Detection System (EPDS) for written papers, final theses that enables the verification the matching of a paper of a particular author with other papers stored in the database. Nevertheless, between analysed period no students were expelled from VU for dishonesty during the assessment of students' achievements or for plagiarism in the preparation of written papers, and no students were reprimanded.

The Academic Ethics Commission examines complaints about actions of staff or students which potentially violate academic ethics. The Academic Ethics Commission is composed of six members: four staff and two students. Research ethics are assigned to another committee: the VU Central Commission of Academic Ethics. In 2021-2024, no complaints were filed. There is also a special helpline for these complaints handled by a team of psychologists and lawyers. These applications are confidential and thus not in the self-evaluation report.

ANALYSIS AND CONCLUSION (regarding 4.2.)

Students' progress is monitored systematically and thoroughly. The feedback is taken seriously and teaching adjusted whenever necessary. During the interview, the students said that they see the changes in the programme because of their feedback. After graduation, feedback from students during and after studies, from employers at the end of internships, and from alumni one, three, and

five years after graduation is collected. About 70% of all employed first-cycle students, and 80% of second-cycle students are in high-skilled jobs. The VU takes very good care of the graduates.

Policies to ensure the diversity of opinions, ideas, respect, trust, and tolerance are in place. Implementation of these policies is also very well arranged. This framework ensures that all students are treated equally and fair. The procedures for appeal are also very well established as evidenced by the fact that only one appeal and no complaints were filed in the last five years.

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. The learning outcomes and teaching methods are well-adjusted to modern day teaching.

2. Access to the university for socially vulnerable groups and students with disabilities is well arranged. The teaching staff knows about the arrangements that can be made to grant access to the biochemistry teaching programme.

3. Students' progress is monitored systematically and thoroughly. The feedback is taken seriously and teaching adjusted whenever necessary.

4. Policies to ensure the diversity of opinions, ideas, respect, trust, and tolerance are in place. Implementation of these policies is also very well arranged, which ensures that all students are treated equally and fair.

RECOMMENDATIONS

To address shortcomings

None

For further improvement

1. Waiting time for a psychologist should be considerably less than three months.

2. Assessment of the learning outcomes should be AI proof.

3. The expert group suggests to add one learning outcome dedicated towards achieving AI literacy to promote learning and professional competence.

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

Academic staff for the Biochemistry programme are recruited through competitive, transparent procedures, with public calls and five-year terms. The programme is delivered by 75 lecturers in 2022–2023, including 16 professors, 29 associate professors, 16 assistants, four junior assistants, and 10 lecturers, all with at least 0.5 FTE and more than three years of teaching experience. There is equal balance in male and female lecturers. Of these lecturers, 84% hold doctoral degrees. Four new junior assistants joined between 2020–2023, and three young researchers are preparing to defend their dissertations. Most staff are long-term employees of relevant faculties and active researchers, while industry specialists with over 10 years' experience, ensure the programme's practical relevance.

Over the past three years, the Biochemistry programmes have maintained a stable teaching-staff–to-student ratio, with around 50 students admitted annually to the bachelor's programme. The teaching staff to student ratio is about 0.4 for first-cycle students and 0.9 for second-cycle students. An increased intake of 59 students in 2021 temporarily lowered the staff to student ratio and created scheduling and laboratory-space issues, leading to a return to the 50-student quota in 2022.

The teaching staff of both programmes consists mainly of permanent employees of VU: Appendix 5 lists 75 teachers delivering teaching in the Bachelor´s programme and 27 teachers in the Master´s programme, who all have been employed by HEI at least part-time and at least three years. The volume and quality of the teaching staff is certainly sufficient to support the programmes. In addition, experts from outside of VU participate in teaching but a comprehensive list of external teachers is not provided in SER. The external teachers include foreign experts delivering lectures on their special topics in the study field of biochemistry; in the study years 2020-2021, 2021-2022 and 2022-2023 the number of such foreign visiting lecturer varied between five and 11 per year.

Staff rotation in the period 2020-2024 was negligible. For the two positions that opened up, the competition was announced publicly in English on the VU website. The primary term of office is five years after which their position can become permanent upon a good evaluation. Every five years, the lecturers are re-evaluated to see if they meet the requirements of their positions including the feedback from the students. The criteria are the number of research articles, participation in conferences, teaching activities, supervision of student research amongst others. The development of didactic competencies is also highly valued. If a lecturer is evaluated badly more than once, (s)he is relieved of his function.

A significant number of young specialists is also involved in teaching and the study process, although most of the academic staff are (associated) professors. Most teaching staff changing their positions are not moving in or out of the University but are promoted. In the period 2020-2023 in total 19 persons have moved to higher positions.

Staff undergo a mandatory qualification assessments every five years, which consider research output, teaching activities, and student feedback. The research output is very good as evidenced by more than 500 publications in peer reviewed journals. Staff must meet predefined qualification requirements, and under Vilnius University regulations, individuals over 65 may not participate in competitions for academic positions. Their contracts can be extended twice for 3-year terms by the Rector. Visiting lecturers are employed on fixed-term contracts and must satisfy the legal qualification criteria. For full professors 10 years' teaching experience and a PhD is required, and for associate professors five years' experience and a Master's degree.

The biochemistry study programme is also offered to international students. About 90% of the teachers have at least B2 level in English proficiency and 42 % have C1 level. There is currently no need to teach Bachelor nor Master students in English as there are no international students.

ANALYSIS AND CONCLUSION (regarding 5.1.)

The teaching staff has the scientific, didactic and professional competences to reach the expected learning outcomes. The teaching staff to student ratio is clearly sufficient. However, the process and criteria by which teachers are evaluated for recruitment or promotion should be clearer. The expert panel learned in the discussion with the teachers that teaching merits are typically measured by "years of teaching" rather than contributions to broader development of teaching and experience on new teaching methods and approaches. One possibility for comprehensive assessment of teaching merits is provided by university teaching qualification (UTQ) or equal certification that can be used internationally (examples from Ireland: University Teaching Qualification - UCD Teaching & Learning, Belgium: University teaching qualification (BKO or UTQ) — Educational glossary, and the Netherlands: University Teaching Qualification | Radboud University) in accordance with the type of teaching that is done, including assessment of the learning outcomes of each course. During the interviews, it also became clear that there are two tracks or paths for career development: a teaching track with emphasis in teaching merits and a research track with corresponding emphasis on research activities. The UTQ could be part of the teaching track.

During the interviews, it was explained that while not every course includes active learning, teachers are encouraged to integrate it into their courses. Various methods are introduced at the university level, and new professors often bring international experience and innovative teaching practices.

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

The teaching staff improves their pedagogical and professional competencies through participation in conferences, seminars, and training amongst others. In addition, memberships in (inter)national networks and participation in different projects ensures the quality of teaching. There are several funds present for that, *e.g.* Erasmus+, Nordplus, Isep, and within the framework of EU projects. The mobility of the teachers relies on their personal preference. Staff may apply for Erasmus+ funding for 1-week training visits or study visits of up to two months. Mobility is further enabled through EU-

funded project activities under guidance of the Research Council of Lithuania, and faculties adjust workloads, assign business trips, and maintain salary stability to promote participation. Participation has led to better teaching methods, research collaboration, and curriculum development.

Staff visited multiple European countries, with mobility data showing four visits in 2020–2021, nine in 2021–2022, nine in 2022–2023, and nine in 2023–2024, mostly for research rather than teaching. Heavy teaching loads remain the main barrier to mobility. Between 2020 and 2023, more than 25 foreign lecturers delivered guest lectures, strengthening international collaboration, enriching course content, and introducing new scientific methods and technologies.

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

Since 2018, Vilnius University has been actively supporting the development of pedagogical competences for teaching staff. The requirements are formalized in university regulations and assessed during recruitment competitions and certification. The Centre of Educational Competence organizes training at multiple levels, including basic pedagogical skills (*e.g.,* Active Learning Methods, ICT integration, student group work, culturally mixed groups), advanced pedagogical skills (*e.g.*, Communication Skills, Supervising Final Papers, Blended Learning, Case Analysis, Motivating Students), and special programmes for new staff. Between 2020 and 2022, 40 staff lecturers participated in these trainings. Training content is delivered by both VU and international experts, and recordings are available for asynchronous learning. Staff also improve their skills through international online courses, such as MOOCs by ARQUS Alliance, and courses from McMaster University and University of Michigan.

Teaching staff further improve research, professional, and general competencies through participation in national and international conferences, research projects, editorial work, and practical activities such as guest lectures and cultural programmes. Language training is supported for internationalisation and teaching in English, German, French, Spanish, or Russian. The Personnel Department organizes general competency development (e.g., Body Language, Mindfulness, Public Speaking, Stress Management), fully funded by VU. Participation is not mandatory but strongly recommended. The staff stated that they feel free to develop their teaching methods and do not experience undue pressure. Administrative support is available when needed.

The junior staff / prospective future teachers can choose a teaching track besides the standard research track. The teachers can select a specific path in which they have two days to prepare optimally for teaching. Typically, PhD supervisors invite young researchers to teach seminars or laboratory classes. Over time, with mentorship and experience, they are allowed to lecture independently. Promotions depend on publications, supervision of theses, and teaching quality, as evaluated by student feedback and the SPC. After several years, teachers undergo re-evaluation to ensure their competences are maintained. Student feedback surveys also play an important role in evaluating teaching quality, and outstanding teachers are recognized annually with faculty awards.

ANALYSIS AND CONCLUSION (regarding 5.2.)

The policies to develop teaching skills are in place and well taken care of. It is, however, unclear what the hard criteria are for the teaching track. Upon questioning during the interviews, it is too much focused on the time spent on teaching (process) rather than what they do (content). An UTQ (see Section 4) could remediate this.

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. The lecturers are highly qualified and about 90% of the teachers have at least B2 level and 42 % C1 level in English proficiency facilitating teaching in English (in the case that international students enter the programmes). There is equal balance in male and female lecturers. A significant number of young specialists is also involved in teaching and the study process.

2. The mobility of the teachers relies on their personal preference. There are several funds present for participation in conferences, seminars, and training amongst others, *e.g*. Erasmus+, Nordplus, Isep, and within the framework of EU projects.

3. The staff are free to develop their teaching methods and do not experience any undue pressure. Administrative support is available when needed.

RECOMMENDATIONS

To address shortcomings

None

For further improvement

1. Further strengthen the teacher track or career pathway with emphasis on development of teaching skills and specific teacher competencies, such as the ability to interact effectively with students and taking care of a positive and safe learning environment.

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 BSc in Biochemistry is delivered at the Faculty of Chemistry and Geosciences, Institute of Chemistry on the Naugardukas campus, while the MSc is taught at the Life Sciences Center (LSC) on the Saulėtekis campus. Both units have the physical resources needed for high-quality studies, with part of BSc teaching hosted by other VU departments that provide suitable infrastructure for practical training. Site visit observations highlight that LSC facilities are excellent, spacious, and modern, with top-class equipment and ample lecture, seminar, and teaching laboratory spaces that together create a strong study environment.

Access to research infrastructure is broad and embedded in student pathways. Students routinely engage with scientific laboratories for theses, professional and technological practice, and research projects, and academic staff actively welcome students into their labs. LSC laboratories offer comprehensive capabilities across molecular and cellular biology, including sequencing, microscopy, gene expression analysis, proteomics, and genome editing, alongside a vivarium, greenhouse, and specialized plant growth premises. International collaborations, notably the LSC–EMBL partnership, further enhance resources and reinforce a research-led learning environment. Teaching staff are active researchers, ensuring current R&D informs teaching, supervision, and thesis topics.

During the analysis period, EUR 5,000,000 was allocated to upgrade LSC scientific equipment, with continued investment in educational laboratories – such as PCR/RT-PCR, electrophoresis, gel imaging, laminar flow and extraction cabinets, and centrifuges – supported by agreements with Thermo Fisher. Laboratories at the Faculty of Chemistry and Geosciences operate modern instruments, including FTIR and Raman spectrometers, ICP-OES, particle analyzers, and related equipment.

Both the SER and staff discussions pointed to the need for fast alignment with rapidly evolving fields especially AI in life sciences and data-intensive methods by speeding up updates to software, licenses, and teaching materials, and providing focused training in bioinformatics and AI tools.

Learning resources are extensive and systematically managed. Course syllabi are kept current with up-to-date literature; lecturers lead regular updates, and term papers and theses require comprehensive literature reviews. The LSC reading room at the Scientific Communication and Information Centre (SCIC) operates 24/7, providing substantial printed and electronic collections and specialist support.

Students with special needs are supported through accessible learning materials, adapted spaces or timetables, and tailored assessment conditions such as extended time and enlarged fonts. Central coordination via the VU Community Development Department offers consultations on admission, studies, and internships, and connects students with faculty contacts for study adaptations and compensatory equipment. Library access is strengthened by the LSC reading room at the SCIC, which includes a Special Needs Laboratory equipped with software and computers adapted for visually impaired and blind users.

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

According to the SER, resource planning follows a clear structure: departments identify their needs, submit requests, and obtain required resources when funding allows. This planning includes annual allocations of €2000 - €4000 for educational materials and reagents, as well as individual thesis funds €250 for first-cycle students and € 650 for second-cycle students in 2023 to support equipment use and student research. Centralized feedback mechanisms, including student surveys and alumni input, help refine the learning environment and teaching practices, ensuring that resource use and future planning remain responsive to academic needs.

ANALYSIS AND CONCLUSION (regarding 6.1.)

Overall, the Biochemistry programmes are well supported by modern facilities, strong research environments, and extensive information resources. These strengths allow the programmes to make full use of their assets and remain responsive to scientific developments and labour market needs.

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. Proximity to and deep integration with internationally recognized research laboratories enables resource sharing and strengthens the research-driven learning environment.

2. Systematic use of central student surveys and feedback to improve teaching resources.

RECOMMENDATIONS

To address shortcomings

None

For further improvement

1. Ensure rapid alignment with fast-moving fields especially AI in life sciences and data-intensive methods by accelerating updates to software, licenses, and teaching materials, and by delivering targeted training in bioinformatics and AI tools.

AREA 7: QUALITY ASSURANCE AND PUBLIC INFORMATION

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

FACTUAL SITUATION

7.1.1. Internal quality assurance system for the programmes is effective

The procedures and processes used in ensuring the maintenance and further improvement of high quality of the study programmes and teaching follow the European, national and University-level guidelines and instructions (as described in SER, p. 81-82). Quality assurance work and decision making involves all administrative layers (University, Faculties, Departments, study programmes), each with their own assigned roles. VU Department for the Quality and Development of Studies oversees and guides the whole process of quality assurance in the University. At the practical level of the study programmes, SPC is the key organ responsible for co-ordinating the regular/continuous evaluation of the quality of teaching and for identifying issues in the studies that need updating or improvement. The Councils of the academic unit hosting the study programme (FCHG for the 1st cycle and LSC for the 2nd cycle programme) appoint the chairpersont to their respective SPCs. SPCs meet regularly, at least once per semester (more often if needed) to discuss the status and development of the programmes, feedback received from students and other stakeholders collected either via different surveys or various other means (e.g., meetings with students or other stakeholders) and report to the Councils of FCHG and LSC. Student and staff are informed of the issues discussed in SPC in a newsletter published in the FCHG and LSC website after the meetings.

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

SPCs of both programmes have at least one student member and one social partner member. In addition to SPC, the students are represented at all levels of University administration (Senate, Councils of Faculties or corresponding units, various committees, etc.) and therefore can participate in the development of content and quality assurance of studies at many levels. FCHG, LSC and the SPCs regularly invite students, alumni and employers to meetings which provide additional and informal opportunities for the stakeholders to discuss study-related issues with the teaching staff and administration. In addition to their participation in the work of the SPCs, the social partners interact with and can contribute to the development of the study programmes in the context of teaching in courses based on their own expertise, serving in thesis defence committees and providing topics and supervision for internships and final theses and thereby help in keeping the teaching updated on industry trends and practices. Moreover, the discussion the expert panel had with the social partners revealed their deep interest in the VU biochemistry programmes and their insightfulness and ideas related to the future needs. The potential in the social partners could well be used more efficiently in the future development of the programmes by, for example, adding their presence in the SPC and in meeting with the programmes. Another important resource is formed by the alumni whose input is particularly valued when it comes to student work placements and finding mentors. The university has a formal Alumni Society and is currently developing a strategy to further strengthen relationships with alumni, including a platform update and expanded services.

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

Information of the study programmes and their external evaluations is publicly available in the VU and FCHG and LSC websites. Statistics and other information important for the operation of study programmes and following the progress of students is collected in VU Study Information System (VUSIS) and made available to relevant persons in the administration and study programmes. Selected services in VUSIS are accessible to students and teachers. This system stores information on admissions, student records, course enrolment, grades, and thesis topics. Faculty can use VUSIS to enter grades, upload course materials, and view student lists.

7.1.4. Student feedback is collected and analysed

Feedback on the content of courses, quality of teaching, and other aspects relevant to the continuous development of the study programmes is collected regularly and in a systematic fashion by a number of different surveys. In the SER (p. 86-87), nine different regularly arranged surveys are listed. These target different student groups (e.g., 1st year students, students who have terminated their studies, graduates) or different aspects of studies (e.g., individual courses, whole semester studies, exchange studies). The response rates of the surveys was not indicated in SER but are expected to be highly variable. In addition to surveys, feedback is received from live meetings with different student groups. Results of the surveys and other feedback is analyzed mainly in the SPCs, which informs the students, teaching staff and other relevant stakeholders of the main results in a newsletter. The feedback has often resulted in concrete changes in teaching, e.g., new courses in bioinformatic, Python and epigenomic were established in 2023 based on students´ suggestions in the surveys.

ANALYSIS AND CONCLUSION (regarding 7.1.)

Both programmes have well functioning mechanisms to maintain and continuously improve the quality of teaching. These include active SPCs, systematic use of surveys involvement of students, alumni and social partners to the processes, and sharing the information with the relevant stakeholder groups in FCHG and LSC websites. Moreover, the chapter on quality issues in SER is thoughtfully written and informative, demonstrating serious and ambitious attitude of the programmes to continuous improvement, consistent with the impressions the panel obtained in the site visit.

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. Description of the quality assurance issues in the SER and the discussions the evaluation panel had with the administration, teachers, students and social partners indicate that the program is actively and ambitiously working to continuously improve the quality of teaching and studies.

2. The study programme committees of the two programs have one student and one social partner member each, meet regularly (at least once per semester) and inform the stakeholders regularly by a newsletter of the issues discussed and decisions made.

RECOMMENDATIONS

To address shortcomings

None

For further improvement

1. The panel recommends that the programmes perform a critical analysis of currently organised multiple surveys with an aim at higher response rates and, possibly, optimal cost-effectiveness (in comparison to other ways of collecting feedback).

2. Contribution of social partners and alumni to the development of the programmes could be further increased by inviting additional members to SPC. In the discussions the panel had with the social partners and alumni, they expressed genuine interest and good ideas on how to develop the programmes further.

V. SUMMARY

Overall, BU Bachelor´s and Master´s study programmes are clear national leaders in the field of biochemistry. By content and quality of studies both programmes meet high international standards. Both programmes have solid and well-designed curricula with good balance between core biochemical and other biosciences and general content and sufficient space for elective/optional studies providing flexibility to the studies. The programmes are very much research-driven and integrate students early in research projects compatible with the level of studies (Bachelor´s vs. Master´s) and performed under supervision by highly-qualified scientists. The students in the programmes appear bright, active and inspired by the high scientific level and excellent reputation of the programme in the job market. The programmes provide a supportive and fair academic environment with easily approachable and friendly staff. Teaching staff is fully competent and supported by pedagogical and professional training ensuring the suitability of teaching methods. The facilities for teaching are excellent with top-class equipment and sufficient lecture and seminar rooms.

The Bachelor´s programme should consider increasing biochemical lab work to complement the domination of chemistry in the lab practicals and both programmes should incorporate AI literacy in their courses. There is also plenty of room and possibilities to enhance internationalisation of the programmes via supporting and encouraging students´ participation in international exchange programmes and by revising admission requirements to the Master´s programme to facilitate entry of talented foreign students. Although the programmes generally take good care of the well-being of their students, possibilities for consultations with psychologists should be improved. The programmes should also consider establishment of specific teacher track with courses developing pedagogical competences.

Finally, the panel wants to thank Vilnius University and its Biochemistry study programmes for the most welcoming, friendly and open atmosphere and fruitful discussions during the site visit.