STUDIJŲ KOKYBĖS VERTINIMO CENTRAS
CENTRE FOR QUALITY ASSESSMENT IN HIGHER EDUCATION

BIOCHEMISTRY FIELD OF STUDY

LITHUANIAN UNIVERSITY OF HEALTH SCIENCES

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, University of La Laguna (Tenerife, Canary Islands, Spain);
3. Academic member: Associate Professor Dr. Arjan de Brouwer, Department of Human Genetics at the Radboud University Nijmegen Medical Centre (The Netherlands);
4. Social partner representative: Dr. Ramunė Leipuvienė, Sr. Product Manager in Molecular Biology at 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 22 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

Lithuanian University of Health Sciences (LSMU) was established in 2010 by merging Kaunas University of Medicine and the Lithuanian Veterinary Academy. It consists of the Medical and Veterinary Academies with five and two faculties, respectively. The University offers 119 study programmes training specialists in a broad range of study fields, including Health Sciences, Veterinary Sciences, Social Sciences, Life Sciences, Agricultural Sciences, and Physical Sciences s (a joint master's program with Kaunas University of Technology).

The 1st cycle study programme "Medical and Veterinary Biochemistry" (MVB) was established in 2011 and is conducted by the Faculty of Medicine together with 1st cycle study programme "Medical and Veterinary Genetics", 2nd cycle study programme "Laboratory Medicine Biology", and the integrated study programme "Medicine".

Overview of the study field

MVB belongs to the study field of Life Sciences, more specifically Biochemistry. It is a multidisciplinary programme building on the broad base of Medical and Veterinary Academies. The programmes aims at training professionals to private and public sectors in the wide and growing area of laboratory health sciences. The extent of the study programme is 210 ECTS, corresponding to 3.5 years (seven semesters) of full-time study resulting to a Bachelor´s degree in Life Sciences and to a qualification as a biomedical technologist, a unique feature of the programme.

Previous external evaluations

The previous external evaluation of MVB was carried out in 2014, covering the first two years of the programme. The programme received a very positive evaluation (22 points from the six evaluation areas) and favourable comments relating to its multidisciplinary nature, distinct identity, excellent facilities, quality of staff and active engagement of social partners. Suggestions for improvement included issues related to low international mobility of students and staff, slight deficiencies in the curriculum and structure of studies, and in the library services available to students.

Documents and information used in the review

The following documents and/or information have been 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 the review panel:

- *Evaluation report of Medical and Veterinary Biochemistry (612C74001) 1st cycle Study Programme at Lithuanian University of Health Sciences, 2014.*

II. STUDY PROGRAMMES IN THE FIELD

First cycle/LTQF 6

Title of the study programme	**Medical and Veterinary Biochemistry**
State code	6121DX001
Type of study (college/university)	University studies
Mode of study (full time/part time) and nominal duration (in years)	Full-time, 3.5 years
Workload in ECTS	210
Award (degree and/or professional qualification)	Bachelor of Life Sciences Biomedical Technologist
Language of instruction	Lithuanian
Admission requirements	At least secondary education or equivalent
First registration date	2011-06-22
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	4
3.	Student admission and support	4
4.	Teaching and learning, student assessment, and graduate employment	4
5.	Teaching staff	4
6.	Learning facilities and resources	5
7.	Quality assurance and public information	4
	Total:	29

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 programme's foundational relevance is substantiated by documented labour market demands in the Republic of Lithuania. Analysis of employment data indicates a persistent requirement for technicians in various fields, specifically noting vacancies for biomedical technologists (medical and pathology laboratory technicians) across the reporting period. This provides a clear rationale for the number of programmes implemented within this field of study.

1*

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

The relevance and uniqueness of the learning outcomes are established through the programme's interdisciplinary professional profile, which integrates Medical and Veterinary Biochemistry. This dual focus positions graduates to address complex challenges in both human and animal health sectors, thereby providing a unique competency set that responds directly to broader societal needs in diagnostics and research.

Alignment with the economic sector is critically reinforced through the extensive professional practice component. The curriculum mandates a significant volume of practice credits, facilitated through formal agreements with diverse external entities. These bases include large-scale diagnostic laboratories, public health polyclinics, veterinary centres, and key industrial research establishments, such as the Research and Experimental Development Center of UAB "Thermo Fisher Scientific Baltics". This array of partners ensures that the learning outcomes are applied within professionally authentic environments, preparing graduates for diverse professional activity areas.

The possibilities for the development of the programme in the field are confirmed by data indicating a high intent among current students to pursue subsequent second-cycle studies, confirming the programme's role as a robust foundation for advanced specialization, in line with the institutional strategy of cultivating highly-skilled experts in health sciences.

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

The aims and learning outcomes of the MVB programme demonstrate strong alignment with the institutional mission of LSMU as a university dedicated to health sciences. The programme's core focus on biochemistry, diagnostic procedures, and research integration directly supports the HEI's strategic goals of advancing medical and veterinary knowledge. The learning outcomes are robustly formulated, encompassing knowledge application, research skills, specialized and transferable social and personal competencies, adhering fully to the general requirements for first-cycle studies.

The descriptor of study cycles. The systematic coherence of the curriculum is demonstrated through the alignment matrices (Annexes 1.3 and 1.4). These documents confirm that programme-level learning outcomes are consistently mapped to subject-level outcomes and supported by appropriate teaching, learning, and assessment methodologies, ensuring a logical and progressive development of competencies.

A critical indicator of strategic alignment is the integration of students into the HEI's research ecosystem. Factual evidence confirms the participation of MVB students in high-level scientific activities, including involvement in projects funded by the Research Council of Lithuania (RCL) and industry-sponsored Research & Development (R&D) initiatives. This commitment to embedding students within the research mission confirms that the programme actively supports the HEI’s strategic objective of being a research-intensive institution.

ANALYSIS AND CONCLUSION (regarding 1.1.)

The factual situation confirms that the MVB programme is systematically managed and strategically oriented, meeting all fundamental requirements set forth in the national quality descriptors.

Regarding the indicator 1.1.1., the aim is fully met with a rating of Very Good. The alignment with national economic needs is clearly established through documented shortages of qualified biomedical technologists in the labour market. The strategic decision to establish an interdisciplinary programme in MVB provides a unique professional profile that maximizes graduate relevance across

diverse health and food safety sectors. Furthermore, the programme's systematic engagement with a robust, varied network of external social partners for professional practice ensures current relevance and strategic responsiveness to the evolving needs of the labour market and the HEI's development goals. There are no substantial shortcomings; the area is evaluated very well in the national context.

Regarding the indicator 1.1.2., the aim is fully met. The programme's aims and learning outcomes exhibit exceptional conformity with LSMU's mission as a leading health sciences university. The structural integrity of the programme adheres strictly to the national Descriptor of Study Cycles and is systematically validated through comprehensive curriculum mapping. Crucially, the integration of students into high-level, externally and internally funded by RCL and R&D projects demonstrates a concrete and effective mechanism for fulfilling the HEI's research and scientific development goals.

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 analysis of the Self-Evaluation Report (SER) and its supporting Annexes demonstrates that the Bachelor of Medical and Veterinary Biochemistry study programme is structurally and formally compliant with the overarching legal framework governing higher education in Lithuania. The programme is systematically implemented within established national requirements concerning the study field classification, the study cycle framework, and the key quantitative structural components. The programme is officially classified under the Biochemistry (D06) study field, which is correctly identified within the Group of Study Fields of Life Sciences as defined by national ministerial orders. The interdisciplinary scope, encompassing both medical and veterinary contexts, aligns the programme with the broader, modern interpretation of the Descriptor of the Group of Study Fields of Life Sciences and its societal application. The learning outcomes defined for the programme are specific, relevant to the field, and are systematically mapped to the curriculum to ensure consistent development of required competencies across all 3.5 years of study. The learning outcomes further reflect the intention to equip graduates with competencies relevant to the professional activity areas of biomedical technologists and biochemists.

The MVB degree is structured as a First Cycle university study programme, with a total volume of 210 European Credit Transfer and Accumulation System (ECTS) credits over a 3.5-year duration. This structure adheres entirely to the national regulations for the First Cycle, which typically stipulate a workload between 180 and 240 ECTS. Furthermore, the Descriptor of Study Cycles outlines five key areas of learning outcomes (Knowledge, Research Skills, Special/Unique Skills, Social Skills, Personal Skills), and the MVB programme's learning outcomes are meticulously categorised according to this exact framework, confirming compliance in scope and level of complexity for a First Cycle qualification.

Structure of programme. The programme’s internal structure aligns with the required ECTS distribution for a First Cycle university study.

Total programme workload: 210 ECTS is correctly allocated across seven semesters, with each full academic year (I, II, III) assigned 60 ECTS.

Credits for the study field: the majority of the curriculum comprises modules demonstrably specific to the Life Sciences and Biochemistry field (e.g., General Biology and General Genetics, Biochemistry 1 and 2, Diagnostic Biochemistry, Biotechnology). The comprehensive coverage ensures that the core field requirements are met.

Credits for practice-based learning: dedicated Professional Practice is formally integrated, including mandatory placements at diagnostic and scientific research laboratories. The total ECTS allocated specifically for this component in the final year is 15 ECTS. This dedicated volume constitutes approximately 7.1% of the total programme, which is an acceptable and substantial provision for practical training.

Internship, placement, or other practical training: The Annexes clearly identify specific external training bases, including UAB Diagnostic Laboratory (Antėja) and UAB "Thermo Fisher Scientific Baltics", demonstrating formalised external partnerships that facilitate high-quality practical training.

Credits for final thesis (project): the Final Bachelor's Thesis is allocated 21 ECTS, which is consistent with the requirements for a First Cycle final assessment.

Contact hours/onsite contact hours and Independent student work: the student workload is formally documented and systematically broken down into contact hours and individual student work hours on a module and annual basis. For instance, Study Year I requires 1608 total hours (60 ECTS), comprising 512 contact hours and 1096 individual work hours, illustrating a clear, auditable structure that meets the standard ECTS definition (40 hours per ECTS).

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

The Bachelor programme demonstrates a high degree of vertical and horizontal alignment between its declared aims, the requisite learning outcomes, and the pedagogical and evaluation strategies employed throughout the curriculum. This systematic coherence is explicitly documented across the programme's planning documentation.

The programme aims to prepare specialists capable of performing and interpreting complex biochemical analyses in medical and veterinary contexts, which is reflected in the structure of the Learning Outcomes (LOs).

The programme effectively maps specific teaching and assessment methods to the different categories of LOs, ensuring that the method is appropriate for the type of competence being developed. The Knowledge Acquisition is primarily facilitated through Traditional lectures and Seminar activities, with assessment performed via Control works and Final assessment. The Practical and Research Skill Development is heavily reliant on Laboratory work, Experiment, Problem Solving, and Individual projects. These are assessed through the Completion of laboratory work, Practical assignments, and culminating in the rigorous evaluation of the Final Thesis by a committee. Finally, the transversal skills Social and Personal Competence are developed through Group work, Presentations, and Discussions, and are evaluated via Supervisor evaluation, Reviewer assessment, and the defence process of the Final Thesis.

On the other hand, the curriculum is structured to ensure that competencies are built progressively. The competency matrix confirms that foundational modules in the early years (e.g., General Biology

and General Genetics, Organic and Bioorganic Chemistry) contribute to basic knowledge LOs (1.x), while later, more complex modules (e.g., Diagnostic Biochemistry, Pharmaceutical Biochemistry) reinforce all categories of LOs, including advanced Research Skills (2.x) and Special/Unique Skills (3.x). Furthermore, the continuous curriculum renewal efforts, such as the fundamental update of the Pharmaceutical Biochemistry subject to include in silico strategies and systems biology, demonstrate an institutional mechanism for maintaining alignment with current scientific innovations.

1.2.3. Curriculum ensures consistent development of student competences

The curriculum of Medical and Veterinary Biochemisry program is systematically structured to ensure the consistent and progressive development of student competencies across the four years of study. This coherence is rigorously documented through the competency matrix (Annex 1.4), demonstrating a clear pedagogical strategy where foundational knowledge matures into professional and research capabilities, in full alignment with the requirements of the “Descriptor of Study Cycles”.

The programme architecture is designed as a clear progression, advancing from fundamental scientific principles to complex, applied, and autonomous professional practice. The initial phase (Year I-II) focuses on establishing core Knowledge and its Application. Modules such as General Biology and General Genetics, General and Inorganic Chemistry, and Organic and Bioorganic Chemistry lay the indispensable scientific groundwork. These modules heavily contribute to LOs 1.1–1.6 (Knowledge), but also introduce foundational elements of Research Skills (e.g., in laboratory work) and initial Social Skills (e.g., in group tasks). The specialisation and application phase (Year II-III) introduces the core professional identity, building on basic knowledge to develop Special/Unique Skills and advanced Research Skills. Modules like Biochemistry 1 & 2, Diagnostic Biochemistry, and Veterinary Clinical Biochemistry are designed to apply knowledge to clinical and laboratory problems. The formal introduction of Bioinformatics and the increasing complexity of laboratory work progressively contribute to all five LO categories, ensuring that research methodology and ethical considerations (Bioethics and Animal Science) are integrated into applied science. Finally, the autonomous and professional practice Phase (Year III-IV) focuses on the independent execution of professional roles and the synthesis of acquired competencies. This is accomplished through Professional Practice and the Final Bachelor's Thesis. These capstone experiences require students to demonstrate all categories of LOs – from applying advanced Knowledge in real diagnostic settings, executing comprehensive Research Skills in an autonomous project (FBT), and fully exercising Personal Skills (5.x) in the self-organisation of their work. The practice bases, including external diagnostic and research laboratories (Annex 6.2), ensure the transition from the academic environment to the professional domain is consistent.

Also, the curriculum successfully integrates transversal competencies horizontally across subject matter such as, Research Skills which is not confined to dedicated research modules but is initiated in Year I (e.g., through data analysis in Chemistry) and intensified through research participation (Annex 2.1) and complex laboratory requirements in Year II/III, culminating in the FBT. The Social and Personal Skills and Personal Skills, such as teamwork, ethics, and self-improvement, are systematically addressed in modules across all years, from Professional Language and Bioethics and Animal Science to the final Professional Practice and Final Thesis. This ensures these key generic competencies are practiced and assessed in various professional contexts, as required by the Descriptor of Study Cycles.

The consistent development is further verified by the structured approach to curriculum review, which integrates feedback from social partners on practical skills and continuously updates module content

(e.g., the renewal of Pharmaceutical Biochemistry), ensuring that the output competencies remain relevant.

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

The MVB programme provides specific, structured opportunities for students to personalise their curriculum, primarily through research specialisation and elective choices, while ensuring full compliance with the Biochemistry field descriptor and First Cycle requirements as set in Descriptor of the Group of Study Fields of Life Sciences. This personalisation is most pronounced in the final phase of study.

Some relevant curriculum Personalisation Mechanisms are implemented. Thus, the curriculum incorporates elective subjects, which are compulsory within the study plan but allow the student a choice from a defined list of modules. For instance, in the First Year, students choose between Foreign Language (English) and another foreign language. On the other hand, the presence of elective modules demonstrates a mechanism for minimal personalisation, satisfying the general requirement for student choice within a regulated First Cycle structure. There is also the opportunity of research specialisation. This is embedded in the development of the Final Bachelor's Thesis (FBT) and associated research engagement through the thesis Topic Selection: Students are permitted to select a Final Thesis topic based on their personal scientific interests and intended professional learning outcomes. This autonomy allows them to align their capstone project with a specific area of biochemistry (e.g., in vitro models, drug development, diagnostic pathways, or veterinary aspects) and with the specialised research projects offered by the HEI. The FBT, worth 21 ECTS, directly addresses the Personal Skills (5.x) by requiring independent organisation and planning of scientific activity. Also students are actively integrated into high-level research and development (R&D) projects, including those funded by the Research Council of Lithuania (RCL) and industry (e.g., GlaxoSmithKline), as documented in Annex 2.1. This participation allows the student to personally select a trajectory towards specific research competencies, such as biomarker analysis or neurobiochemistry, thereby tailoring their skill set beyond the core curriculum. Finally, students have the opportunity to develop some professional Practice (15 ECTS) which provides a dual mechanism for personalisation by offering placements in different types of professional settings such as diagnostic/Control Laboratories: Focuses on clinical application and laboratory quality management (e.g., UAB Diagnostic Laboratory (Antėja) and/or scientific Research involvement in advanced experimental techniques (e.g., UAB "Thermo Fisher Scientific Baltics" Research and Experimental Development Center). Students select the base, allowing them to customise their final-year experience toward either a professional diagnostic career or a research-oriented career path, thus linking their learning goals to the practical component. The Final Thesis process serves as the ultimate expression of curriculum personalisation and competence verification.

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

First Cycle Compliance: the FBT must demonstrate the student's ability to synthesise knowledge, apply research methods, and exercise autonomy. This is achieved by the FBT being an independent project (21 ECTS) that integrates Research Skills and Personal Skills.

Field Compliance (Medical and Veterinary Biochemisry): the FBT must reflect the specialised technical and scientific nature of the field. Thus, it must be based on research within the field, which is evident from the fact that students are involved in high-level R&D projects (RCL/GlaxoSmithKline-funded) related to molecular medicine, diagnostics, and neurosciences, which directly align with the

university's priority areas. Assessment methods for the FBT include Research, Reviewer assessment, Supervisor evaluation, and Committee member evaluations. The inclusion of a reviewer and committee ensures formal academic rigour. The assessment process includes external validation, as a social partner representative (e.g., UAB Diagnostikos Laboratorija) participates in the evaluation of the FBT. This confirms the project's relevance to the professional qualification (Biomedical Technologist). Thus, the Final Bachelor's Thesis (FBT) within the Medical and Veterinary Biochemisry (MVB) programme is structurally and methodologically designed to fully comply with the academic requirements of a First Cycle qualification and the specific professional demands of the Biochemistry field.

Compliance with First Cycle Requirements: the FBT is the capstone assessment mechanism for verifying the attainment of all five categories of the programme's Learning Outcomes (LOs). The FBT requires students to synthesise knowledge and apply the comprehensive set of Knowledge and its Application and Research Skills gained over the 3.5-year curriculum. It demands the formulation of a research problem, development of a strategy, and critical interpretation of results, which is central to a First Cycle degree in a scientific field. The independent nature of the FBT directly assesses the Personal Skills (5.1), which encompass the ability to independently and responsibly organise and plan scientific activities and the learning process. The rigorous assessment framework—involving Supervisor evaluation, Reviewer assessment, and Committee member evaluations—ensures that the required level of academic quality and scientific merit is verified by multiple experts, a core principle of external validation for a university-level degree.

Compliance with Field (Biochemistry) Requirements. The content and context of the FBT demonstrate explicit alignment with the specialised field of Biochemistry and the professional qualification of a Biomedical Technologist. The FBT topics are closely linked to the university's high-priority research areas, such as molecular medicine, cardiovascular research, and neurosciences. Furthermore, student participation in externally funded projects, including those from the Research Council of Lithuania (RCL) and industry (e.g., GlaxoSmithKline), ensures the Theses address current, high-level, and relevant scientific issues within the field. The HEI incorporates a representative from a social partner (e.g., a diagnostic laboratory) into the Final Thesis evaluation process. This institutionalised mechanism provides essential external validation, confirming that the FBT and the competencies demonstrated meet the standards and practical needs of the professional labour market for a Biomedical Technologist. The assessment methods for the thesis explicitly include Research, ensuring that the methodology applied by the student is evaluated alongside the final written output.

ANALYSIS AND CONCLUSION (regarding 1.2.)

The evaluation of Area 1 for the Medical and Veterinary Biochemisry program at the Lithuanian University of Health Sciences (LSMU) confirms a structurally sound and systematically implemented curriculum, demonstrating strong professional relevance and academic coherence.

Strategic Alignment and Relevance. The programme's aims and learning outcomes demonstrate robust and systematic alignment with the institutional mission of LSMU as a health sciences university and directly address the documented labour market demand for biomedical technologists. This relevance is critically supported by the programme's unique, interdisciplinary profile, integrating both Medical and Veterinary Biochemistry, which provides a distinctive competency set to address broader societal health challenges. Furthermore, the strategic commitment to embedding the HEI's research mission is evidenced by the active participation of students in high-level, externally funded R&D projects.

Curriculum Structure and Pedagogy. The programme's structure is in rigorous compliance with national legal requirements for a First Cycle degree (210 ECTS over 3.5 years), with outcomes meticulously mapped to the Descriptor of Study Cycles. There is a very good vertical and horizontal alignment between aims, outcomes, and assessment methods, with pedagogical strategies specifically tailored to verify the acquisition of distinct competencies, such as laboratory work for practical skills. The curriculum ensures consistent and progressive development of competencies through a clear, scaffolded progression from foundational scientific principles to complex, applied professional practice, culminating in capstone experiences. Personalization is effectively achieved through structured opportunities, primarily the selection of Professional Practice bases (15 ECTS) and the Final Thesis topic, allowing students to tailor their professional trajectory toward either diagnostic laboratory work or research-oriented careers. The Final Bachelor's Thesis is a robust, independent project (21 ECTS) that meets all field and cycle requirements, consistently demonstrating the required synthesis of advanced research and professional skills.

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	

COMMENDATIONS

1. Unique Interdisciplinary Profile and Professional Qualification. The programme's dual focus on Medical and Veterinary Biochemistry provides graduates with a unique, highly relevant interdisciplinary competency set for the labour market, which is formally conferred through the distinct professional qualification of "Biomedical Technologist".
2. Exemplary Research Integration. The integration of high-level scientific activity is demonstrated by the active and documented participation of First Cycle students in externally funded R&D projects (including Research Council of Lithuania and GlaxoSmithKline-funded initiatives), which significantly enhances the development of advanced research competencies beyond typical First Cycle expectations.
3. High-Quality Professional Synthesis and External Validation. The allocation of a substantial 15 ECTS to Professional Practice, delivered through formal agreements with leading external diagnostic and research partners (e.g., UAB "Thermo Fisher Scientific Baltics"), ensures all student competencies are synthesized and validated against cutting-edge industry requirements.

RECOMMENDATIONS

To address shortcomings

None

For further improvement

1. Given the rapid advancements in biomedical technology, the HEI should formalize a continuous, active feedback loop involving social partners to regularly update the specialized

curriculum content, ensuring that technical and professional skills remain precisely aligned with the evolving needs of the industry.

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.

Research at LSMU and its various faculties and other units is regularly assessed in the context of national comparative expert assessment of research and development activities of universities and research institutions (taking place every five years) and in annual evaluations conducted by Lithuanian Research Council (RCL) The most recent evaluation covered the period 2021-2023 and focused on publication activity and research funding in the field of natural sciences. In that evaluation, the field of biochemistry accounted for 19-26 % of total weighted evaluation points, reflecting the contribution to the total scientific output of the faculty, but giving less information on the level (impact) of research (SER, p.15). The results of another evaluation, covering the period 2018-2022 and research the field of biology in LSMU BioMed evaluation unit (including medicine, biology and biophysics) spoke strongly for the high level of research: in a national comparison, LSMU obtained a score of 4.5 (of 5), equal to the score given to research in the Vilnius University and higher than scores given to other units doing research in the same field. Although research assigned to the field of biochemistry was not included in the review, biochemical research at LSMU is often carried out in collaborative projects with other units, including clinical sciences. In years 2022-2024, researchers in the field of biochemistry published 56 scientific articles, of which 52 in Q1 (top 25 % of journals) or Q2 (next best quartile) journals (SER, p. 16). The Q1 category included also a few publications in top-class journals like Cell Reports and Nature Communications, which involved large international collaborations. LSMU Faculty of Medicine has four strategic research themes: health technologies, regenerative medicine, molecular medicine and epidemiological research. These broad themes intersect with research areas focusing on different systems: biopharmacy, neuroscience, oncology, cardiovascular research, and digestion (SER, p.17). Biochemical research in LMSU is interdisciplinary and well consistent with the defined research areas, reflected in the topics of publications and research projects (SER, Annex 2.2.). Students are integrated into research mainly in the Bachelor´s Thesis project, which is carried out in research groups on topics and research areas related to those listed above (SER, Annex 2.1).

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

The link between the content of MVB studies and latest research is formed through lectures, voluntary internships and professional practice in scientific research and - most importantly - the Bachelor´s thesis work. Most teachers in MVB study programme courses are active researchers and therefore capable of including up-to-date information of the latest research in the topics they teach. The courses cover the basics of many modern techniques used in biochemical research, which can be developed to hands-on skills in laboratory practice and final thesis work done in research

laboratories. In addition to LSMU laboratories, a co-operation agreement with Thermo Fisher Scientific provides the students with opportunities to do laboratory practice and Bachelor´s Thesis work in the company with access to equipment and techniques not readily available at LSMU.

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

Already in the first year of studies, MVB students are informed of the research groups and topics available in LSMU and are encouraged to join the research group of their interest. Also, external laboratories including two biotechnology companies can present their research and opportunities to do professional practice, internships and final thesis work in their laboratories. Based on the panel´s discussion with students during the site visit, it became clear that the open and welcoming atmosphere at LSMU makes it easy for the students to approach the teachers and researchers and generally the students have experienced no difficulties in finding a laboratory and supervisor. Early integration in research also gives the students sufficient time to think carefully the topic of the Bachelor´s Thesis and, for most students, the future Master´s thesis.

ANALYSIS AND CONCLUSION (regarding 2.1.)

The study programme has very good and modern facilities and instrumentation at its disposal and most of its teachers conduct active research in biochemistry or closely related fields. The students are invited to join research teams from the start of their studies. The research topics are consistent with the aims of the study programme and supportive to the programme. Overall, research in biochemistry at LSMU is at a sufficient level to provide support to the MVB study programme, facilitating integration of the latest developments in science to teaching and enabling students to develop skills for scientific research.

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	

COMMENDATIONS

1. The new, spacious and well-equipped facilities including the teaching labs and library provide excellent support for science-based teaching.
2. Close physical and administrative connection of the programme to clinical medicine and clinical research provide interesting real-world analytical problems for research and student projects.
3. The students are informed on research opportunities and invited to join research groups at the beginning of their studies.

RECOMMENDATIONS

To address shortcomings

None

For further improvement

1. The panel suggests the programme to consider advertising the internships and Bachelor´s theses available in LMSU and its social partners in the public and private sectors on the website of the programme or via other means to give the students a 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 Medical and Veterinary Biochemistry (MVB) programme follows the centralised LAMA BPO national admission system. The competitive score consists of four components: (1) chemistry state exam (weight 0.4), (2) Lithuanian language and literature exam (0.2), (3) mathematics or biology exam (0.2), and (4) school-leaving grades (0.2). Additional points follow national rules (e.g., for voluntary activities, excellent achievements, etc.). Admission information is publicly available on the LSMU website, LAMA BPO portal, and regularly communicated via Open Days, school visits, social media channels (Facebook, Instagram), and Study Centre newsletters.

During 2021–2024, 314 applicants selected the programme, while 45 were admitted (14–17 per year), most with state-funded places. Dropout is extremely low (only 2 students in 3 years), confirming adequate applicant preparedness.

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

According to Methodology Annex 1, the principles of recognition of foreign qualifications, partial learning outcomes, prior learning and other learning, as well as information on their application, must be clearly presented in the SER. LSMU maintains an established procedure for the recognition of foreign qualifications and partial studies, following the guidelines of the Ministry of Education, Science and Sports and collaborating with SKVC. All information regarding recognition procedures, required documents, evaluation criteria and timelines is publicly available on the institutional website and communicated by the International Relations and Study Centre (IRSC).

The University also implements recognition of competencies acquired through non-formal and informal learning, following updated institutional regulations that ensure transparency, consistency and equal treatment of applicants. These procedures enable the formal acknowledgement of relevant learning outcomes and competencies when students request such recognition.

In line with Methodology Annex 1 requirements, data from the last three years on accredited and non-accredited cases must be provided. During the evaluation period (2021–2024), no MVB students submitted applications for recognition of foreign qualifications, partial studies or non-formal/informal learning outcomes, therefore no accredited or non-accredited cases occurred, and no reasons for non-accreditation were registered. Although no cases were recorded, the procedures are clearly

defined, publicly available, systematically applied at the institutional level, and ready to be enacted when needed.

ANALYSIS AND CONCLUSION (regarding 3.1.)

The factual situation demonstrates that admission procedures to the MVB programme are fully transparent, criteria-based and aligned with programme learning outcomes. The competitive score structure ensures that applicants possess the required background in chemistry, biology and Lithuanian language, which corresponds to the scientific and laboratory-focused nature of the studies. The stability of applicant numbers during 2021–2024 and a very low dropout rate indicate that the admission system effectively attracts motivated and academically prepared candidates. Public communication channels such as the LSMU website, Open Days, Study Centre information sessions and social media ensure broad and consistent dissemination of admission requirements and procedural steps, contributing to student awareness and accessibility.

Recognition of foreign qualifications, partial studies, and non-formal or informal learning is regulated institutionally in accordance with national legislation and SKVC guidelines. Although no MVB applicants requested recognition during the evaluation period, institutional procedures are clearly defined, publicly available and ready to be applied. This ensures compliance with quality assurance standards and safeguards equal treatment for potential incoming applicants.

Based on the analysis of the factual data, the admission system functions reliably, contributes to programme sustainability and ensures that learning outcomes can be achieved through adequate prior knowledge and student preparedness. Therefore, the standard is fully met.

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

LSMU participates in Erasmus+ and maintains more than 200 active cooperation agreements with international universities. Mobility opportunities are regularly communicated to students through multiple institutional channels, including the LSMU website, Moodle announcements, official university newsletters, email communication, and consultations with the International Relations and Study Centre (IRSC). These channels ensure that students receive timely information about application deadlines, partner institutions, and Erasmus procedures.

Despite the wide institutional mobility framework, actual mobility participation among MVB students remains low. During 2021–2024, only two students completed Erasmus+ traineeships abroad, and no MVB students participated in Erasmus study exchanges. Incoming mobility was not possible because the MVB programme was taught exclusively in Lithuanian during the evaluation period, and Erasmus incoming students require English-taught subjects. Information gathered during the site visit revealed that the main reasons for low outgoing mobility are academic rather than administrative. Students explained that veterinary and human biochemistry modules offered in the MVB programme do not have clear equivalents at most partner universities. Missing these highly specialised modules abroad disrupts the study plan and requires taking additional subjects that often cannot be counted toward mandatory ECTS requirements. Staff confirmed that only a small proportion of institutional partners offer relevant modules for this interdisciplinary curriculum. As a

result, mobility options for MVB students are limited despite the overall size of the university's partnership network.

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

LSMU ensures extensive academic, financial, psychological and social support systems. Academic support is provided through lecturer consultations, Moodle learning materials, guidance from the Study Programme Committee. Students can approach lecturers during consultation hours, request additional explanations through Moodle or email, and seek Study Centre assistance when academic difficulties arise.

Financial support includes merit-based and social scholarships, tuition compensation schemes and Erasmus+ grants. These procedures follow clear institutional rules and deadlines and ensure transparent and equal access for eligible students. Psychological support is available free of charge, and students with special needs receive individual accommodations such as modified assessments, additional time, or assistive technologies. Social support systems include dormitory placement, student organisation activities, sports facilities, cultural events and career guidance. Dormitory allocation follows established institutional regulations. During 2021–2024, seven MVB students lived in LSMU dormitories and reported satisfaction with the accommodation process.

Students highlighted during the site visit that laboratory-based classes are well organised and provide strong hands-on experience, which contributes significantly to their practical skill development and overall study satisfaction.

3.2.3. Higher education information and student counselling are sufficient

Students receive structured and timely information about study organisation through the LSMU Study Centre, Dean's Office, LSMU SA and introductory sessions at the beginning of the first academic year. The Curator Programme supports new students during the adaptation period. Regular meetings with the Study Programme Committee allow continuous monitoring of academic progress. Academic information, timetables, changes in course delivery and assessment procedures are communicated through Moodle, official email and institutional information systems. Students stated during the site visit that communication with lecturers and administrative staff is effective, responses are timely, and information channels function consistently.

ANALYSIS AND CONCLUSION (regarding 3.2.)

The analysis indicates that LSMU provides a comprehensive and effective support system that enhances students' academic progress, well-being and integration into university life. Academic, financial, social and psychological support mechanisms are well organised, easily accessible and valued by students. Communication channels function efficiently, enabling students to receive timely information and support throughout their studies.

However, mobility opportunities for MVB students are significantly constrained. Although LSMU maintains more than 200 partnership agreements and institutional Erasmus procedures operate effectively, the programme-specific structure limits actual participation. Veterinary and human biochemistry modules are highly specialised and difficult to match with courses offered at partner institutions. As a result, outgoing students face challenges in recognising mandatory subjects upon return, discouraging participation in mobility programmes. Additionally, the absence of an English-taught version of the programme during the evaluation period prevented incoming mobility entirely.

These limitations were confirmed through discussions conducted during the site visit, where students and staff clearly described difficulties related to subject equivalency, partner relevance and ECTS recognition. While the institutional support system itself fully meets quality requirements, mobility-related obstacles remain significant and therefore affect the evaluation of this indicator. The standard is partly met.

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	

COMMENDATIONS

1. The programme provides a well-structured and effective academic, financial, social, psychological and personal support system, which students value and which demonstrably contributes to their study progress and well-being.
2. Information on study organisation, mobility opportunities and support services is communicated clearly and consistently through multiple institutional channels, ensuring that students have access to timely and relevant updates.
3. Strong laboratory-based and practice-oriented learning components contribute to high student satisfaction and support the development of practical competencies.

RECOMMENDATIONS

To address shortcomings

None

For further improvement

1. Strengthen theoretical depth in key study areas highlighted during the site visit, such as molecular biology, biochemistry, and biomedical laboratory analysis. Student feedback indicated a desire for deeper conceptual understanding in these areas, therefore expanding theoretical components would enhance learning outcomes and broaden the programme's academic profile.
2. Improve international mobility opportunities by enhancing communication, raising awareness of mobility timing options suitable for the curriculum, and supporting the development of an English-taught pathway. The introduction of selected English-taught modules would increase the feasibility of incoming mobility and support more reciprocal partnerships.

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

4.1.	Students are prepared for independent professional activity

FACTUAL SITUATION

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

The MVB programme is a full-time study programme delivered in a mixed format, combining classroom or remote theoretical lectures with contact-based practical classes and seminars. The MVB programme provides detailed descriptions of learning outcomes, content, teaching methods, and assessment strategies for all subjects and modules. Teaching quality is supported by the SC Innovative Education Department (SC IED), which offers staff training to introduce modern and digital teaching tools. Students can independently access course information, receive guidance from coordinating lecturers, and participate in programme decisions through their SPC representative and during annual meetings. The final grade consists for at least 50% of course components using methods such as assignments, laboratory work defence, examinations, projects, practice reports, and final thesis defence, ensuring consistent engagement and comprehensive evaluation of knowledge, skills, and professional practice outcomes.

At least 30% of the student's time is spent on individual work. The self-study tasks are outlined in the course descriptions and posted on Moodle by lecturers. Students complete these assignments during scheduled sessions and may seek individual consultations with lecturers at any time if they need clarification. Professional practice is evaluated by a commission appointed by the Dean of the Faculty of Medicine, while the defence of the final bachelor thesis (FBT) is assessed by a commission approved by the Rector of LSMU.

Examples of 2nd programmes available for and used by MVB graduates are described in SER (p. 28). The students obtain information on the career opportunities related to their study field on the website of LSMU Career Centres and in the annually organized Career Day (SER, p. 27).

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

The LSMU provides an inclusive study environment tailored to socially vulnerable students and those with special learning needs, adapting study conditions according to each student's individual abilities and impairments. The MBV programme allows for flexible alternatives for completing study requirements, such as adapted materials, adjusted font sizes, modified assessment formats, or extended deadlines to accommodate those that have a visual or hearing impairment amongst others. There is also funding for students with a disability, which can be personalised according to the programme that they follow. Additional support structures include a Coordination Commission for students and staff with disabilities, a Social Welfare Coordinator for submitting concerns or suggestions, and access to professional psychological support.

ANALYSIS AND CONCLUSION (regarding 4.1.)

The programme with its learning outcomes, leads to a very good student performance. Approximately 10% of the students continue to PhD studies, and drop-out rates are below 10%, which is among the lowest in Lithuania. Faculty members emphasised that the programme attracts

motivated and capable learners. Success largely depends on student motivation and preparation. There is enough room for mental support in the programme.

A small point of feedback: the description of the learning outcomes (Annex 1.3) is often formulated like "*Understands and applies knowledge about the hierarchy of biomolecules and their interactions in the formation of cellular structures: membranes, supramolecular complexes, organelles, and cytoskeleton*.'' This is slightly redundant as application of knowledge already assumes that you understand what you are talking about.

The expert group noticed that 'AI literacy' is not presented in the learning outcomes. This omission should be remedied. The faculty plans to introduce a dedicated course on the responsible and effective use of AI, highlighting its advantages and limitations in scientific research and data analysis, which could be directly translated into a learning outcome.

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 feedback is given through the SPC committee, in which the students are represented by one fellow student. Of note, in the meeting the panel had with the students, they were not aware of who is their representative in the current SPC. The SPC committee convenes at least two times per year. Much attention is addressed towards the students' achievement in the teaching components. There is a Quality Thermometer through which all students can give their opinion on the quality of the topics taught. When issues arise, the SPC consults with teaching units, reviews overall course, practice, and thesis defence results, and addresses study quality assurance matters. The Dean annually reports study results to the MFC and the Rector, with all evaluation data documented in electronic forms via LSMU SIS.

The students progress is monitored through Moodle, a digital platform set-up for this reason. They can also discuss their progress by pre-arranged individual meetings. Students that are underperforming, *i.e.* have an academic debt, are identified by the Moodle platform and are contacted to remediate their issue. In case there are issues with the lecturer or teaching methods, the student can contact the Dean. As a last option, students can always appeal to the rector of the LSMU.

4.2.2. Graduate employability and career are monitored

Students can find information about career opportunities on the LSMU website, at the yearly career event, and at the biannual meeting between students and employers. Employment issues are also discussed: four in 2022, seven in 2023, and five in 2024. Career monitoring includes two graduate surveys carried out 6 months and 12 months after graduation. Most MVB graduates continued their studies and frequently combined them with employment.

Across 2021–2024, graduates enrolled in various programmes such as Laboratory Medicine Biology, Medicinal Chemistry, Molecular Biology, Biochemistry, Medical Biology, Molecular Biology and Biotechnology, and Biochemical Analysis. Of the 13 MVB students in 2024–2025, 11 plan to continue to second-cycle studies. Employment data show strong labour-market integration. Six months after

graduation, four graduates were registered as unemployed in 2022, 3 in 2023, and two in 2024; after twelve months, only one graduate per year remained registered, indicating high employment rates.

Employer and graduate feedback was generally positive: 92.9% of employers (14 institutions) stated that graduates met or partially met expectations. In surveys of 9 graduates from 2021–2023, 66.7% rated study conditions and teaching quality as high, 66.7% felt studies met expectations, 55.6% reported that acquired skills were in demand, and 44.4% required additional training.

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

The LSMU upholds the principles of academic integrity, tolerance, and non-discrimination, as outlined in its Code of Ethics. Lecturers follow strict rules ensuring impartial and private evaluation, and students sign a pledge of academic integrity to ensure fair behaviour before each assessment. Cases of academic dishonesty are documented and handled according. Students in the MVB programme can also anonymously report ethical violations, such as bullying, harassment, and discrimination, through study quality surveys.

The university actively promotes equal opportunities by fostering a socially and culturally inclusive environment for individuals of different nationalities, faiths, and abilities. Support measures, such as individual study plans help students balance studies with work or personal responsibilities, including maternity or paternity needs. Ethical violations and discrimination cases may be reported to the Dean within 1 working day, and all written works are checked using plagiarism-detection software. Additionally, on 18 April 2024, the Senate approved general guidelines on the use of Artificial Intelligence in studies, research, innovation, and clinical practice. Departments conducting MVB studies comply with national equal-opportunity laws and ensure ways to anonymously report misconduct or discrimination.

There has been no appeal nor complaints in the last three years.

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

LSMU Study Regulations stipulate the procedures for submitting and reviewing appeals or complaints. Students may appeal if they disagree with an assessment or its procedures. The Appeals Commission reviews such cases. There are always student representatives present. Its decisions can be further appealed to the LSMU Commission for the Settlement of Student Disputes. There have been no appeals nor complaints in the last three years.

ANALYSIS AND CONCLUSION (regarding 4.2.)

The expert panel thinks that the students are very well taken care of and that all feedback procedures are methodologically sound. However, the students, who were interviewed did not know the student representative in the SPC.

The students were highly educated. The majority of the students will go on to do a masters degree and combine their studies with work. A small percentage of the graduates went to a foreign country (notably the USA and Japan). By 12 months all graduates had successfully integrated in the job market. Although about half of the graduates indicated that they had to do extra training after graduation, the expert panel does not believe that this should be remediated, because the working environments can be diverse and encompass areas that are not studied, *e.g.* project management.

The policies to ensure academic integrity, ethical behaviour, non-discrimination, and tolerance are well-established, and the procedures for appeals and complaints are effective.

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	

COMMENDATIONS

1. The students are very well taken care of and their feedback listened to.
2. The policies to ensure academic integrity and ethical behaviour including non-discrimination and tolerance are sufficient and the procedures for appeals and complaints are effective.

RECOMMENDATIONS

To address shortcomings

None

For further improvement

1. 'AI literacy' should be presented in the learning outcomes.
2. The student representative in the SPC was not visible for the students in the other years. That should be dealt with.

AREA 5: TEACHING STAFF

5.1.	Teaching staff is adequate to achieve learning outcomes

FACTUAL SITUATION

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

The teaching staff is well qualified to ensure good teaching sessions and continuity of the bachelor study. The ratio between staff and students was favourable: about 1.2 in the past four years. About 80% of the teaching staff holds a doctoral degree, which should ensure a high level of didactic competence. These teachers also participate in national and international science projects, which keeps the topics discussed up-to-date and immediately applicable for internships and research training purposes. Every five years the teachers are evaluated by well-established criteria to enhance the quality of the pedagogical staff. A PhD and research publications are essential. Promotion to associate or full professor levels requires strong academic records, publications, and teaching experience. Staff are regularly re-evaluated by the attestation committee. Feedback from students

is taken along as criterium. Once you are experienced, you can mentor and integrate new teachers in the teaching process.

Proficiency in English in general is good: 95% of the teachers use English at the B2 level. This fosters collaboration internationally and brings teaching to a higher level as most of the literature is in English. This also supports the English-taught programme, which is set-up right now. The goal is to significantly enhance internationalisation of the study.

ANALYSIS AND CONCLUSION (regarding 5.1.)

The teaching staff's qualifications are up to par. The procedures and general criteria used in the evaluation of the educational competence of the teachers are described in SER (p. 32). It would be possible to further improve the current practice by applying a more systematic protocol for the exact pedagogical criteria, possibly by establishing a portfolio ("university teaching qualification" according to the type of teaching that is done, including assessment of the outcomes of each course).

The MVB study programme will be conducted in English starting next year, but there are challenges in teaching in English. As internationals are permitted in the programme, the teachers have to give the same course in both Lithuanian and English. Evidently, this will increase the workload of the teachers. Moreover, since the Lithuanian students have a C1 level in English and are educated to work in an international environment, it would be natural to expect the same level of language proficiency from their teachers. Currently, however, there is no such requirement and only a few teachers may have the C1 certificate. Therefore, the programme should have C1 level of teachers as a medium-to-long-term goal and promote the development of English skills of the teaching staff.

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

FACTUAL SITUATION

5.2.1. Opportunities for academic mobility of teaching staff are ensured

All teaching staff have the opportunity funded by Erasmus+ or international mobility programmes to go abroad for teaching purposes. As part of the annual assessment, academic mobility is cherished. The information is easy accessible and there are informal consultations available for clarification if you need that. The teaching staff participated in 64 trips for study visits to foreign institutes to achieve a better quality of the course they teach in and to obtain new teaching competencies.

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

Improvement of the teaching staffs pedagogical competencies is well safeguarded. Teachers should devote at least 30 hrs for innovation of educational competence each year for five consecutive years. They do this by participating in conferences on educational topics organized inside and outside Lithuania. The total duration of educational training at LSMU during the years 2021–2024 was 1997 hours. During this period, 88% of the teaching staff in the MVB programme improved both educational and innovative/general competences; The university also provides teacher training courses, including those focused on AI, problem-based learning, and student engagement. New teachers usually start during their PhD studies, initially supervising seminars and laboratory work before progressing to lectures. Each new teacher has a mentor who provides guidance on teaching methods and course development. To become an assistant, a master's degree is required. Although

there is no formal evaluation system, self-assessment and student feedback are considered important components in quality assurance.

ANALYSIS AND CONCLUSION (regarding 5.2.)

Academic mobility of the teaching staff is very well taken care of. Although most of the site visits are based on research rather than teaching, they provide an opportunity to get acquainted with state-of-the-art research technology, important for keeping the courses up-to-date.
Tracks specific for teaching should be implemented. The focus on research is good as teachers should be recognized in their respective field, but there is not enough emphasis on specific teacher competencies, such as taking care of a positive and safe learning environment, and the ability to interact effectively with students. Criteria for these competencies appear to be missing.

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	

COMMENDATIONS

1. The teaching staff is well qualified to ensure good teaching sessions and continuity of the bachelor study. The ratio between staff and students was favourable: about 1.2 in the past four years.
2. Level of English language skills in general is good: 95% of the teachers use English at the B2 ("upper-intermediate") level. This fosters collaboration internationally and facilitates teaching in English.

RECOMMENDATIONS

To address shortcomings

None

For further improvement

1. The programme should consider a medium-to-long-term goal of having C1 level certificate in English skills by teaching staff.
2. Tracks specific for teaching should be implemented. The focus should be on specific teacher competencies, such as the ability to interact effectively with students and taking care of a positive and safe learning environment. Criteria for these competencies appear to be partly missing.
3. Evaluation of teaching competence might benefit from establishing a portfolio to obtain a university teaching qualification according to the type of teaching that is done, including assessment of the outcomes of each course.

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

Theoretical and practical activities are delivered on the LUHS hospital campus, where modern facilities align with programme needs. Teaching laboratories and workstations support biochemical experiments and independent work, and new cell culture and biochemical research labs enhance studies, thesis projects, and scientific practice. Students gain real diagnostic experience in hospital clinical laboratories. Clinical and departmental facilities provide the equipment and technical capacity to meet learning outcomes. While facilities enable practical activities, students expressed a wish for more hands-on laboratory hours to achieve more consistent practical proficiency. Parts of professional practice also take place in external diagnostic or research laboratories, broadening authentic training. Overall, these resources support the programme's emphasis on laboratory and research skills and prepare graduates for laboratory careers and further studies.

Informational and digital resources are comprehensive. The LSMU library offers extensive collections, 24/7 study access, user training, and regular updates. Study information is managed in the LSMU Study Information System; learning materials are delivered via MOODLE; and consultations run on Microsoft Teams. During the visit, it was noted that students could be encouraged to use modern databases and analytical software more actively.

Accessibility is ensured through mobility aids and support for students with visual or hearing impairments. LSMU provides accessible study conditions for individuals with special needs. The MA and VA buildings are equipped with mobility-assistive infrastructure, including three types of lifting equipment: mobile stair climbers, elevators, and platform lifts for individuals with mobility impairments.Strong teacher–student relationships, an excellent teacher/student ratio (>1:1), and close links to clinical medicine and real-world analytical problems translate this resource base into effective learning.

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

Financial and organisational support mechanisms effectively sustain resources and learning opportunities. Continuous planning and renewal of the material base are in place, financed by national, structural, and other funds. Resource planning and updates operate across several levels to ensure needs are identified and addressed efficiently: at the department level, the head of department communicates requirements to the Faculty Dean; at the SPC level, the Study Programme Committee assesses programme resource needs, prioritises them, and submits proposals to the Dean; and at the student level, students can inform the subject coordinator or the SPC about material resource needs. This multi-tiered process enables timely identification of gaps, prioritisation of investments, and alignment of resources with programme goals.
Current learning infrastructure will be upgraded after the construction of a new Faculty of Medicine building and the establishment of a new examination centre in the Training Laboratory Building.

ANALYSIS AND CONCLUSION (regarding 6.1.)

Overall, facilities and learning resources are modern, accessible, and sufficient, enabling learning outcomes through well-equipped labs, strong libraries and digital platforms, and authentic practice settings. Continuous planning and investment are in place. The programme's laboratory focus, clinical integration, and positive student experience provide a strong foundation for these steps.

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**

COMMENDATIONS

1. Modern facilities and learning resources, with valuable access to hospital diagnostic laboratories that provide authentic exposure to disease diagnostics and current methodologies.

RECOMMENDATIONS

To address shortcomings

None

For further improvement

1. Consider leveraging modern laboratories to further strengthen practical skills by increasing core lab hours and exploring minimum hands-on targets linked to learning outcomes.
2. Consider enhancing digital competencies by introducing foundational IT/data analysis for all students and encouraging structured use of databases and analytical tools through workshops and assessed activities.

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 quality assurance system follow the European, national and LSMU-level guidelines and standards (listed in SER, p. 36). Implementation of procedures described in the above-mentioned documents is dependent on efficient processes for collecting, analysing and disseminating information on the quality of studies in the programme and active participation of students and social partners (in addition to teachers). Quality of studies is assessed and analysed at University and Faculty levels and at the level of individual programmes. At programme level, the key organ for collecting information and developing the programmes based on the analysis of the received information is the Study Programme Committee (SPC) with representatives of teaching staff,

students and social partners. At the level of documented procedures and guidelines the quality assurance system is functional, although some components may need improvement as described below.

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

Students have representation at all levels of University administration from LSMU Council and Senate to Faculty Councils and Study Programme Committees. At programme level, SPC is the key organ responsible for co-ordinating the quality assessment and for identification of key areas in need of updating or improvement. These actions are largely based on the feedback received from students and other stakeholders. The list of members in the current SPC of MVB programme was not included in SER, but discussions during the site visit revealed that the current SPC (led by the Head of Department of Biochemistry) has at least one student and two social partner representatives as members in addition to members representing teachers. Therefore, both students and social partners (in the case of MVB, representatives of a biotechnological company and a diagnostic laboratory) have an opportunity to participate in the activities of SPC, including quality assurance. Somewhat surprisingly, however, none of the students present in the discussion with the evaluation panel knew the identity of the student member or members in the SPC, indicating that communication between the SPC and students is not working properly. In addition to "official" surveys, informal meetings and discussions with the teaching staff provide additional opportunities for students (and for social partners) to participate in the development of the programme and its quality assurance aspects.

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

Basic information on the programmes and their external evaluations is published on university website. Detailed information on the study processes, improvement measures, feedback from students and other stakeholders is regularly and systematically collected and used to improve the programme. An important tool developed for continuous monitoring of the quality of courses and study modules is the Quality Thermometer discussed below in 7.1.4. Results of surveys targeting different stakeholder groups are shared with Head of Department, Dean of Faculty, members of SPC, and the relevant teachers and other stakeholders and finally published according to LSMU guidelines.

7.1.3. Student feedback is collected and analysed.

Feedback surveys targeting students, graduates and social partners are regularly organized and analysed by SPC. In addition to these, the University questionnaire on the quality of currently running courses and study modules, "Quality Thermometer", and the regular surveys of graduates and employers run by LSMU Career Centre produce information for the development of the programme and curriculum but are limited by the variable and sometimes low response rates. Quality Thermometer is based on a few questions and resulting in a numeric assessment in the range from -2 to +2) is a simple and potentially a very useful tool for continuous monitoring of the courses. Information obtained during the site visit indicated that the feedback does sometimes lead to changes in the courses.

ANALYSIS AND CONCLUSION (regarding 7.1.)

Overall, quality assurance procedures and tools, including collecting and using the feedback from students and other stakeholders are functional in the program. The SPC is not working as well as it could, especially regarding the visibility of this important organ to students. More information of its role in the programme should be given to students, including perhaps newsletters on its latest meetings and decisions. Quality Thermometer shows promise as a user-friendly tool in obtaining "real-time" information on the ongoing courses. Like with all surveys, the usefulness or representativeness of Quality Thermometer data is dependent on the response rates, which may vary.

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	

COMMENDATIONS

1. Quality Thermometer appears to be a demonstrative and potentially powerful tool for continuous monitoring of the quality of courses and study modules.
2. The program actively follows the quality of teaching by using several different tools, including surveys and regular meetings organized with the students, and introduces changes to the programme based on the results.

RECOMMENDATIONS

To address shortcomings

None

For further improvement

1. The role of the SPC in the program and its visibility to students should be strengthened. Perhaps e-mailed newsletters informing the students (and staff) on latest SPC meetings and related issues and/or face-to-face or remote Q&A sessions with the SPC could be helpful.
2. The panel is suggesting that the program performs a critical analysis of currently organised multiple surveys in order to improve the response rates and, possibly, to find ways to run the surveys in the most cost-effective way (in terms of time spent in answering and analysing the results, in comparison to other ways of collecting feedback).

V. SUMMARY

The Bachelor´s programme Medical and Veterinary Biochemistry (MVB) has a unique profile and identity among related bioscience 1st cycle programmes in Lithuania in combining traditional biochemical training with medicine and real-life clinical problems. Another distinctive feature of is the qualification as biomedical technologist that the graduates obtain in addition to Bachelor´s degree after completing the 3.5-year study programme.

The curriculum is sound and aligns well with the Health Sciences profile of LSMU. The students are integrated in relevant scientific research from early on in their studies and exposed to real-life clinical problems and analytical methods. Good collaboration of the programme with its social partners (biotech enterprises, diagnostic laboratories) further expand the possibilities to obtain professional training in the relevant skills and competences needed in scientific research. The programme takes very good care of its students as evidenced by the high degree of satisfaction of the students in the support they receive from MVB and LSMU, including attention to study-related, technical, financial and psychological problems. Feedback is regularly collected by surveys organised centrally in LSMU and at Faculty and Programme level and used to improve the teaching and organisation of courses in the programme. The Quality Thermometer, developed for continuous monitoring of the quality of courses appears to be a particularly useful tool in obtaining feedback in an easily digestible, demonstrative form. Teachers in the programme are competent and active in research and academic mobility. The facilities and technical infrastructure are of excellent quality and strongly support the studies and analytical laboratory skills.

There are no serious shortcomings in the programme but some issues need attention. The teaching language in the programme is currently Lithuanian. As part of efforts of the programme towards internationalisation and higher number of students, the programme is shifting to English in teaching in 2026. This shift is commendable but will require careful planning and improvement of the English skills of teachers to C1 level for fluent lecturing and interaction with students. In the site visit, the panel learned that the language change would substantially increase the workload of teachers (in contact hours) because the same lectures would need to be given in both languages. Related to internalisation, in contrast to teachers, participation of students in international mobility is quite low even if plenty of possibilities are available (e.g. in Erasmus plus). Learning outcomes, although quite valid, should be written out in a more explicit and clear manner. Digital skills and competencies (openAI/data analysis) are largely missing from the curriculum but are becoming more and more important in the job market and in research. The role and visibility of SPC to students should be improved.

The programme trains professionals to serve either as biomedical technologists after graduation or as research scientists after obtaining an appropriate Master´s degree (and often doctorate). At the level of teaching, "professional" path would benefit more on emphasis on technical skills whereas the "academic" path on deeper analysis on scientific research and thinking. The panel got the impression that while this this dichotomy has yet not led to any significant problems, eventually the programme may need to decide which of the two pathways it should focus on in the future development of the programme.

Finally, the panel wants to thank LSMU and the study programme for the most welcoming, friendly and open atmosphere and fruitful discussions during the site visit.