



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS  
CENTRE FOR QUALITY ASSESSMENT IN HIGHER EDUCATION

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## BIOPHYSICS FIELD OF STUDY

**Vilnius University**

### EXTERNAL EVALUATION REPORT

**Expert panel:**

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# I. INTRODUCTION

## 1.1. OUTLINE OF THE EVALUATION PROCESS

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

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

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

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

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

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

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

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

## 1.2. REVIEW PANEL

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

The composition of the review panel was as follows:

1. Panel chair: Prof. Ph.D. Grzegorz Węgrzyn Professor of Department of Molecular Biology at University of Gdansk (Poland);
2. Academic member: Prof. Dr. Néstor V. Torres Darias, Professor of Biochemistry and Molecular Biology at the University of La Laguna (Tenerife, Canary Islands, Spain);
3. Academic member: Prof. Dr. Herbert van Amerongen Head of the Laboratory of Biophysics, full professor at Wageningen University & Research (WUR) (Netherlands);
4. Social partner: Mr Julius Gagilas, Head of the laboratory Saide Genomics – Center for molecular diagnostics genomics and research (Lithuania);
5. Student representative: Mr Vėjas Strelčiūnas, vstrelciunas3@gmail.com, (student's representative), third-year student in the bioengineering study programme at Vilnius Gediminas technical university (VILNIUS TECH).

## 1.3. SITE VISIT

The site visit was organized on 16 May 2024 onsite.

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

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

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

## 1.4. BACKGROUND OF THE REVIEW

### Overview of the HEI

Vilnius University (VU) was established in 1579 and is the oldest and largest higher education institution in Lithuania. It is a public institution. The University's governance structure is defined in the Statute of Vilnius University and the self-governance of the University's community is implemented by the governing bodies of the University – the Senate, the Council, and the Rector – in their respective capacities. Since 1 January 2021, the University has 15 core academic units (CAU) (11 faculties, 1 institute, 1 centre, 1 academy, and 1 business school), and 12 core non-academic units. The CAUs maintain contact with each other and cooperate in the implementation of the University's Strategic Plan, studies, and research.

The University offers undergraduate, postgraduate and doctoral studies in the fields of humanities, social sciences, natural sciences, medical and healthcare sciences, and technological sciences. More than 90 BA and integrated study programmes as well as 110 MA and professional studies (pedagogical) programmes are available. Doctoral students can choose from among nearly 30 research fields, while resident students can choose from 63 residency study programmes. The university offers studies in 12 study field groups and 60 study fields.

Studies in the field under evaluation are carried out at the Life Sciences Centre (LSC), which was established in October 2016 on the basis of three separate VU CAUs (Faculty of Natural Sciences, Institute of Biochemistry and Institute of Biotechnology). The VU LSC operates in accordance with the Statute of VU and the Regulations of VU LSC. The main LSC governing bodies are the Council and the Director. There is also a Collegium of Studies and the International Advisory Board, which are advisory bodies. The LSC that conducts studies in the field currently consists of 3 institutes – branch academic units (hereinafter – BAU): Institute of Biochemistry (hereinafter – BCHI), Institute of Biosciences (hereinafter – BSI) and Institute of Biotechnology (hereinafter – BTI); The main research fields of the LSC include: BCHI – gene structure, expression and functioning of cell signalling and regulatory systems, proteins and their structure, function and practical applications, and synthesis of various organic compounds; BSI – research of molecules and systems important for the functioning of organisms, behaviour, biodiversity, genetics, epigenetics, populations and ecosystems; BTI – protein and nucleic acid technologies, bioinformatics, immunodiagnosics, epigenomics, drug development, microfluidics and genome editing technologies.

### Overview of the study field

The LSC offers 7 bachelor's degree programmes and 9 master's degree programmes. There are two programmes in the field of Biophysics under evaluation – one bachelor's degree and one master's degree programme. Doctoral degree programmes are available in Biology, Biophysics, Biochemistry, Ecology and Environmental Science (jointly with the Nature Research Centre [hereinafter – NRC]) and Zoology (jointly with the NRC). Studies in the field of Biophysics at the Vilnius University were launched in 1986. Following the reorganisation of the education system in Lithuania, the way studies are organised has also changed. Studies in the field of biophysics have been conducted since 1997 (the second-cycle SP) and, since 2002 – the first-cycle SP. In 2017, the name of the first-cycle SP was changed from Biophysics to Neurobiophysics.

### Previous external evaluations

The last external evaluation of the programmes in Biophysics took place in 2013. The study programmes were evaluated positively (the score of 21 out of 24 for the first cycle SP, and 22 out of 24 for the second cycle SP) and were accredited for 6 years.

#### 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:

There were no additional sources of information have been used by the review panel.

## II. STUDY PROGRAMMES IN THE FIELD

	First cycle/LTQF 6	Second cycle/LTQF 7
Title of the study programme	<b>Neurobiophysics</b>	<b>Biophysics</b>
State code	6121DX008	6211DX009
Type of study (college/university)	University studies	University studies
Mode of study (full time/part time) and nominal duration (in years)	Full-time studies	Full-time 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	Secondary education	A Bachelor's degree in Genetics, Microbiology, Molecular biology (two-track and main studies), Biophysics and Biochemistry may enrol in the study programmes of the life sciences field
First registration date	14 June 2002	19 May 1997
Comments (including remarks on joint or interdisciplinary nature of the programme, mode of provision)	–	–

### III. ASSESSMENT IN POINTS BY CYCLE AND EVALUATION AREAS

The first cycle of biophysics study field at Vilnius university is given a **positive**

No.	Evaluation Area	Evaluation points <sup>1*</sup>
1.	Aims, learning outcomes, and curriculum	4
2.	Links between scientific (artistic) research and higher education	3
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 management and public information	4
<b>Total:</b>		28

The second cycle of biophysics study field at Vilnius University is given a **positive**.

No.	Evaluation Area	Evaluation points <sup>2*</sup>
1.	Aims, learning outcomes, and curriculum	4
2.	Links between scientific (artistic) research and higher education	4
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 management and public information	4
<b>Total:</b>		28

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<sup>1,2\*</sup> **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.



## III. STUDY FIELD ANALYSIS

### AREA 1: STUDY AIMS, LEARNING OUTCOMES AND CURRICULUM

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

#### FACTUAL SITUATION

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

There is an alignment of the study SP in biophysics offered with the needs of society and the labour market. The SP's have been designed to cover interdisciplinary areas related to life sciences, such as neuroscience, information processing in the brain, the search for diagnostic and therapeutic methodologies, among others. In the national context, the life sciences industries are considered a strength of the Lithuanian economy and a prospective area for development. Graduates are prepared to contribute to this sector and meet the needs of the local labour market.

Close collaboration with social partners, including academic and business institutions, allows the VU to understand the requirements of the modern labour market and adapt study programs accordingly. The programs are designed to develop key competencies, such as analytical thinking, independence in learning, effective communication and social responsibility, which are highly valued in the labour market. The structure of the programs, which includes a combination of mandatory courses and electives, as well as internships in research laboratories, ensure that students acquire a theoretical and practical training.

Some possible weaknesses and areas susceptible to improvement can be identified as well as actions to achieve excellence in the field. Since the field is in a constant evolution, it is important to ensure that programs are up to date with the latest technologies and methodologies. This could be achieved by incorporating courses or modules dedicated to emerging technologies such as artificial intelligence applied to life sciences. Although collaboration with business partners is mentioned, consideration could be given to including courses or workshops that develop business and entrepreneurship skills among students, preparing them for leadership roles in the life sciences industry.

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

The study program objectives and learning outcomes proposed by VU in its Neurobiophysics and Biophysics programs are in line with the university's mission, values and strategy.

Both are designed to implement the University's mission to strengthen the cognitive and creative potential of Lithuania and Europe. These programs contribute to the economic, social and cultural development of Lithuania by training students for the global work environment. The mission of the VU Life Science Center (LSC) aligns with the VU strategic objective of creating and developing the life sciences ecosystem in Lithuania. This is achieved by conducting internationally competitive research and studies and training new generations of scientists and innovators.

#### ANALYSIS AND CONCLUSION (regarding 1.1.)

In conclusion, the study program objectives and learning outcomes proposed by VU in its Neurobiophysics and Biophysics programs are in line with the needs of society and the labour market as well as with the university's mission, values and strategy. These programs not only seek to offer high-quality education at an international level, but also contribute to the comprehensive development of students and the advancement of Lithuanian and global society.

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 two degrees have been prepared and implemented in compliance with the legal requirements in force in Lithuania and those of the university itself. They have been designed considering the Lithuanian Qualifications Framework, ensuring that the learning objectives and outcomes of the program are aligned with national standards of educational quality. It has been ensured that the programs meet the general requirements for study implementation, which includes aspects such as the structure of the study plan, the duration of the program, the evaluation criteria and the provision of resources necessary for teaching and learning. The programs have been designed in accordance with the Study Cycle Descriptor, which guarantees coherence and consistency in the qualification levels offered, such as the bachelor's degree and the university master's degree and comply with the specific study regulations of VU. Finally, the Biophysics programs align with the Life Sciences Field of Study Descriptor, ensuring that curricular content and program objectives are in line with expectations and standards disciplinary in the field of study.

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

The programs show a good alignment among program objectives, learning outcomes and teaching/learning and assessment methodologies.

The objectives are clearly defined and reflected in the learning outcomes, that should be followed by teachers. Teachers are free to choose the teaching and assessment methods that they consider most appropriate for measuring the achievement of learning outcomes. This is done based on Bloom's Cognitive Taxonomy, ensuring a variety of pedagogical approaches that promote deep understanding and practical application of knowledge. Coherence between program objectives, learning outcomes and methodologies is reviewed annually by the Curriculum Committee. Programs include a wide range of practical activities, such as laboratory work, internships and research projects that allow students to develop specific skills and apply theoretical knowledge in practical settings, strengthening their preparation for the job market and academic research. Emphasis is placed on the development of social and personal skills, such as analytical skills, critical evaluation, effective communication and teamwork. These skills are developed through activities such as debates, oral presentations, participation in seminars and team research projects.

A possible weakness could be the lack of diversity in the teaching and evaluation methods used. Although it is mentioned that teachers have the freedom to choose the methods they consider most appropriate, there could be a tendency towards certain pedagogical approaches or types of assessment that do not fully address

the needs and learning styles of all students. To improve this area and allow the program to strive for excellence in its field, it may be beneficial to encourage a greater variety of pedagogical approaches and assessment methods. For example, more active learning activities could be incorporated, such as case studies, student-led research projects, discussions, simulations, and problem-based learning. Additionally, implementation of regular formative assessments could be considered to provide timely feedback to students and help them improve their understanding and performance. Diversifying teaching and assessment methods would not only improve students' educational experience, but also promote a more inclusive and equitable learning environment.

It is somewhat confusing that the first cycle study program, which is necessarily initial in nature and therefore with more general content, is called Neurobiophysics, while the second cycle program, which is supposed to be more specific, has, on the contrary, the more general name of Biophysics. This feeling is reinforced by verifying that the Neurobiophysics program is effectively a general program that does not precisely aim at specialization. If the aim is to make its training attractive and link it to the field of neurosciences, it would be advisable for its name to be more general and therefore less likely to lead to confusion.

#### 1.1.1.2.3. Curriculum ensures consistent development of student competences

Although both programs comprehensively address competency development the first cycle program of Neurobiophysics could benefit from greater integration of research and practice opportunities from the early stages of the degree cycle, as well as a more specific focus in developing practical and critical thinking skills from the beginning of the program.

Although the inclusion of professional internships in scientific laboratories and research projects is mentioned in the later semesters for the first cycle program, it would be beneficial to incorporate research and internship opportunities from the first years of the program. This could help students gain practical skills and experience in applying theoretical knowledge in research settings, which could improve their preparation for the job market or for postgraduate study. As will also be addressed below, it might be beneficial to increase the (bio)physics component in the education.

Additionally, consideration could be given to including specific courses or modules that encourage the development of critical thinking, problem-solving, and teamwork skills from the beginning of the programs. These skills are fundamental in the field of biophysics and neuroscience, and their early development could strengthen students' competency base throughout their education.

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

Overall, the program offers options for students to personalize their educational experience and develop the skills and knowledge necessary to achieve their academic and career goals. Students have the possibility of selecting elective subjects within the study program, which allows them to explore specific areas of interest and strengthen both general and specific competencies of the field of study; have the option to develop an individualized study plan, giving them the flexibility to adapt their academic program according to their personal and professional goals; have the opportunity to participate in academic exchanges, which may include partial studies at other educational institutions or internships; can study several foreign languages as non-credit subjects.. First cycle students have the option to choose dual study paths, allowing them to combine two different fields of study and expand their knowledge and skill base. First cycle students are assigned specific credits for general university courses, giving them the opportunity to explore areas outside their primary field of study and develop a broader understanding of various topics. In addition, the university

has established procedures to recognize competencies acquired through non-formal education or self-education, which expands students' independent learning opportunities and promotes the principles of lifelong learning.

A possible weakness of the program could be a lack of clarity or insufficient communication about the customization options available to students. If students are not fully informed about opportunities to tailor their curriculum to their individual interests and goals, they could miss out on important benefits to their academic and professional development. Additionally, the availability of electives and the development of individual curricula may be limited by administrative or logistical restrictions, which could make it difficult for students to take full advantage of these customization opportunities.

To improve this aspect and aim for excellence, the program could consider to ensure that students are fully informed about all customization options available, including electives, individual study plan development, and academic exchange programs and establish mechanisms to monitor student participation in personalization options and collect feedback on their experience. This would allow areas for improvement to be identified and policies and procedures adjusted accordingly. In addition it might be considered to design a track for students who are more interested in biophysics than in the (neuro)biology part of the program, for example after the 2<sup>nd</sup> year, and one for students more interested in neurobiology.

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

The process of preparing and defending the final theses in the 1<sup>st</sup> cycle and 2<sup>nd</sup> cycle programs meet the requirements established for both the field of study and the corresponding academic cycles.

The regulations and methodological guidelines for the preparation of the final thesis are clearly defined and accessible to students. Additionally, students receive guidance from both their thesis supervisor and the chair of the relevant study program committee. The objective of the final thesis is aligned with the objectives of the study program, focusing on demonstrating knowledge, skills and practical research abilities in the field. Students are expected to develop skills in planning and conducting research, as well as verbal and written communication skills related to research. Clear criteria are established to evaluate the quality and content of the final thesis, including topic relevance, research methodology, data analysis, and writing quality. The evaluation also considers the level of independence demonstrated by the student in carrying out the research. Transparency and accountability are promoted through the public defence of theses, allowing the academic community to participate and evaluate students' work. However, the possibility of a closed defence is recognized in justified cases, such as the protection of intellectual property. Students have the opportunity to conduct their research in a variety of settings, ranging from university laboratories to external institutions, allowing them to gain diverse experience and apply their skills in different contexts.

Despite these positive aspects, a possible area of improvement could be the inclusion of more guidance and support for students who choose to undertake theoretical projects rather than experimental research. This could involve providing additional resources for modelling and data analysis, as well as facilitating interdisciplinary collaboration to address complex challenges in the field.

#### **ANALYSIS AND CONCLUSION (regarding 1.2.)**

Both programs have established clear objectives that align with the mission and values of the university. The intended learning outcomes are also well defined and connected to the program goals. However, a lack of

coherence is observed in some cases between objectives and teaching/learning methods, suggesting the need for a more detailed review to ensure complete alignment. The programs comply with the legal and university requirements established in Lithuania. The processes and procedures related to the implementation of the programs have been clearly documented, indicating a good level of compliance with current regulations. Students have the opportunity to acquire both theoretical and practical skills through a variety of pedagogical approaches. However, areas for improvement are identified in customizing the curriculum to meet individual student needs.

The programs offer a solid set of subjects and modules that allow the progressive development of student competencies. The importance of interdisciplinarity is emphasized and opportunities for specialization and practical research are provided. However, greater attention is suggested to diversifying elective course options to accommodate a broader range of student interests. Several options have been identified for students to customize their study plan according to their personal learning objectives. The inclusion of individualized curricula and academic exchange opportunities provides greater flexibility and diversity in the educational experience. However, greater promotion and support for these options is suggested to ensure broader student participation.

Based on the above analyses, we rate the entire Neurobiophysics and Biophysics programs at Vilnius University with a 4 (Very good) on the evaluation scale.

### AREA 1: CONCLUSIONS

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

#### COMMENDATIONS

None

#### RECOMMENDATIONS

To address shortcomings

None

For further improvement

1. It may be beneficial to encourage a greater variety of pedagogical approaches and assessment methods; namely more active learning activities (case studies, student-led research projects, discussions, simulations, and problem-based learning).

2. It would be beneficial to include specific courses or modules that encourage the development of critical thinking, problem-solving, and teamwork skills from the beginning of the program. Also it would be beneficial the inclusion of professional internships in scientific laboratories and research from the first years of the program.
3. Enhance the information channels about the customization study options available, including electives, individual study plan development, and academic exchange programs.
4. Establish mechanisms to monitor student participation in personalization options and collect feedback on their experience.
5. To include more guidance and support for students who choose to undertake theoretical projects rather than experimental research, through providing additional resources for modelling and data analysis, as well as facilitating interdisciplinary collaboration to address complex challenges in the field. Also, expansion of online public advocacy opportunities beyond exceptional circumstances, could be considered to increase accessibility and participation.

## 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

Nearly all teachers who are involved in the study programs of Neurobiophysics (first cycle) and Biophysics (second cycle) are also actively involved in scientific research activities, which is apparent from their published scientific articles. In particular the biophysics research at VU is at the highest level in Lithuania in comparison to other institutions in the country and it is also internationally strong. However, it should be noted that there are very few researchers in this field at VU and most of the teachers of (Neuro) Biophysics are working in other research fields. There are many ongoing research programs and research projects in which teachers/staff members are involved, both at the national and international level, and they cover many aspects of the broad study programs, although the physics part is somewhat under represented.

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

The link between the curriculum and the latest developments in science is primarily ensured by the fact that most of the teachers are active researchers and they also include their research findings in their courses where possible, in particular in the somewhat more advanced courses and in the many elective courses that are offered by staff members in the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> year. Students are invited to scientific seminars of the Life Sciences Centre. Moreover, there is a variety of courses in which students have to prepare presentations and reports in which recent scientific articles should be used. However, the 1<sup>st</sup> cycle is far more oriented towards neurobiology than to physics and students learn more about the state of the art in neurobiology than in biophysics.

During the 2<sup>nd</sup> cycle nearly all courses, either compulsory or elective, are linked to the research topics of the teachers, and this guarantees a direct link with the latest developments. Most of these courses are far more oriented towards Biophysics than the courses in the 1<sup>st</sup> cycle.

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

From the first year on it is possible for motivated students to join research activities and there is also support available for summer internships and research. In the 8<sup>th</sup> semester the students perform research for their bachelor thesis (25 credits) and there is a large variety of research topics that can be chosen. Students can also go to the scientific laboratories of social partners which is regularly happening.

During the first year of the 2<sup>nd</sup> cycle there are 15 credits (10 +5) allocated to research projects and in the 2<sup>nd</sup> year there are 10 credits for this, plus 30 credits for the Master's thesis so there is ample of opportunity to engage in research and it is good that students can participate in a number of different research projects.

### ANALYSIS AND CONCLUSION (regarding 2.1.)

In general the link between teaching and scientific research is well guaranteed in the study programs although the physics and biophysics part is somewhat underrepresented in the 1<sup>st</sup> cycle SP. The students have many occasions and opportunities to be informed about the latest scientific developments.

## AREA 2: CONCLUSIONS

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

### COMMENDATIONS

1. The teachers-researchers in the programme show a high level of research activity and this largely ensures education that is related to up-to-date science, both in the courses and research projects.
2. The students have ample opportunities to engage in research activities and develop research skills.

### RECOMMENDATIONS

#### To address shortcomings

1. It was already strongly encouraged by the previous expert panel to further develop a clear and coherent vision towards modern biophysics. The program committee has chosen to rename the 1<sup>st</sup> cycle SP to neurobiophysics. This has not really improved the biophysics part and we advise either to make a serious attempt to increase the (bio)physics part of the SP or otherwise take out “Biophysics” from the name of the SP. This only holds for the 1<sup>st</sup> cycle SP, the 2<sup>nd</sup> cycle contains a sufficient amount of high-level biophysics.

#### For further improvement

1. Students now have the opportunity to choose for more physics education in the facultative part of the program. It would be good if the SP would advise students which courses to take to obtain a degree that is more biophysics oriented and matches better with what would be expected internationally from a BSc in Biophysics. Alternatively, one could choose to provide two tracks during the first cycle, one more (bio)physics oriented and the other more neurobiology oriented.



## 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

At VU, the student selection and admission criteria are adequate, transparent and correlate with the learning outcomes. Each student is admitted to the study programme through the national system for applying to higher education institutions - LAMA BPO. The number of students choosing both Neurobiophysics and Biophysics programmes does not seem to be decreasing, although the biophysics study programme is mostly chosen by graduates of the bachelors programme of VU – Neurobiophysics. Some questions about the content of both masters and bachelors study programmes were pointed out, regarding the fact, that the bachelors programme – Neurobiophysics - appeared to be more detailed and narrowed down than the masters study programme – biophysics – at least according to the name of the programme. Important notes were made, that the name of the bachelors study programme was changed recently due to decreasing interest in the study programme, which yielded a positive outcome on the number of applicants to the study programme. Regarding the admission process, VU biophysics and neurobiophysics students are well informed and do not have any major issues with the admission procedures.

Both bachelor and master study programmes demonstrate a transparent admission process that correlates well with the program's learning outcomes. The use of the national LAMA BPO system ensures that the selection criteria are clear and accessible. The program remains attractive, particularly to graduates of VU's Neurobiophysics Bachelor's program.

However, there are noted concerns about the relative depth and detail of the Master's program compared to the Bachelor's program. The recent rebranding of the Bachelor's program to Neurobiophysics has positively impacted applicant numbers, indicating a successful strategic adjustment.

Overall, the admission and support processes for the neurobiophysics and programmes at VU are effective, with students being well-informed and experiencing minimal issues. To further enhance the program, it might be beneficial to review and potentially adjust the Master's program content to ensure it provides an appropriate progression from the Bachelor's level, addressing any perceived gaps or overlaps in detail and specialization.

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

3.1.2 VU has established clear and transparent procedures for the recognition of foreign qualifications. These procedures are aligned with national and international standards, ensuring that students with diverse educational backgrounds can be assessed fairly. The recognition process involves evaluating the academic credentials of international applicants to determine their eligibility for the Biophysics Master's program. This process ensures that all students meet the necessary prerequisites and are adequately prepared for advanced studies in biophysics. However, there can be challenges related to the timely processing of these recognitions, which sometimes impacts the application process. Improved communication and streamlined processes could enhance the experience for international applicants.

The program also allows for the recognition of prior learning and relevant work experience, which can contribute to the overall academic requirements. This flexibility is designed to accommodate students who have gained substantial knowledge and skills through non-formal or informal learning environments. The periods of study are structured to provide a balanced combination of coursework, laboratory work, and research projects, allowing students to tailor their education to their specific interests and career goals. However, the implementation of this recognition can vary, and there is a need for consistent guidelines to ensure uniformity across different departments and faculty members.

### **ANALYSIS AND CONCLUSION (regarding 3.1.)**

Vilnius University's Biophysics Bachelor's program demonstrates a transparent admission process that correlates well with the program's learning outcomes. The use of the national LAMA BPO system ensures that the selection criteria are clear and accessible. The Biophysics program remains attractive, particularly to graduates of VU's Neurobiophysics Bachelor's program.

However, there are noted concerns about the relative breadth and detail of the Master's program compared to the Bachelor's program. The recent renaming of the Bachelor's program to Neurobiophysics has positively impacted applicant numbers, indicating a successful strategic adjustment.

Overall, the admission and support processes for the Biophysics Master's program at VU are effective, with students being well-informed and experiencing minimal issues. To further enhance the program, it might be beneficial to review and potentially adjust the Master's program content to ensure it provides an appropriate progression from the Bachelor's level, addressing any perceived gaps or overlaps in detail and specialization. The Biophysics Master's program at Vilnius University is well-structured to accommodate both local and international students, with strong mechanisms for the recognition of foreign qualifications and prior learning. The program's flexibility in recognizing prior learning and relevant work experience is a significant strength. To further enhance the program, Vilnius University should consider streamlining the foreign qualification recognition process and ensure consistent implementation of prior learning recognition across all departments. This will help maintain the program's high standards and attract a wide range of qualified students internationally.

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## **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**

Vilnius University (VU) ensures that students in the Biophysics Master's program have significant opportunities for academic mobility. The university actively participates in international exchange programs such as Erasmus+, enabling students to study at partner institutions across Europe and beyond. These mobility programs are well-integrated into the curriculum, allowing students to gain diverse academic and cultural experiences. While the opportunities for mobility are well-established and promoted, actual participation rates among Biophysics students have room for improvement, indicating a need for further encouragement and support.

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

The Biophysics Master's program at VU offers comprehensive support that spans academic, financial, social, psychological, and personal aspects of student life. Academic support includes access to laboratories, faculty members, and personalized academic advising. Financial support is available through various scholarships, grants, and financial aid options, helping to alleviate financial burdens on students. Social and psychological support is also provided by VU, although students have noted, that some of these necessities are often difficult accessible due to long queues and perhaps lack of staff, which is something that should be considered as well. VU also assists with accommodation, health services, and career planning. This support system is designed to ensure that students can achieve their academic goals and maintain well-being throughout their studies, and it appears to be quite effective. However, students have reported that not all teachers are willing to provide detailed feedback or show them their mistakes, which is an area that needs improvement to enhance the learning experience.

### 3.2.3. Higher education information and student counselling are sufficient

VU provides detailed information and counselling services to students, ensuring they are well-informed about their academic and career opportunities. This includes regular academic advising and career counselling services. Information regarding the study program, admission criteria, and course requirements is available on the VU website. However, students have expressed concerns that the description of the study program on the website is too abstract, providing only the names of courses without sufficient detail on course content. This lack of detailed information can hinder students' ability to make informed decisions about their studies.

### ANALYSIS AND CONCLUSION (regarding 3.2.)

Vilnius University's Biophysics Master's program demonstrates a strong commitment to providing extensive support and opportunities for its students. The program ensures substantial opportunities for academic mobility through established international exchange programs, although increased participation could be further encouraged. The academic, financial, social, psychological, and personal support services offered are comprehensive and effectively address the diverse needs of students, contributing significantly to their overall success and well-being. An important concern was pointed out by 2nd cycle students, that there are cases, when lectures that are supposed to be in English are being held in Lithuanian due to professor's refusal. This is an important issue that should be addressed.

However, there are areas for improvement. The university needs to enhance the transparency and detail of the study program descriptions on its website to provide students with a clearer understanding of course content. Additionally, the feedback issue, where not all teachers are willing to show students their mistakes or provide detailed feedback, needs to be addressed to ensure a more effective and supportive learning environment.

## AREA 3: CONCLUSIONS

AREA 3	Negative - 1	Satisfactory - 2	Good - 3	Very good - 4	Exceptional - 5
		Meets the requirements, but	Meets the requirements, but	Very well nationally and	Exceptionally well nationally and

	Does not meet the requirements	there are substantial shortcomings to be eliminated	there are shortcomings to be eliminated	internationally without any shortcomings	internationally without any shortcomings
<b>First cycle</b>				X	
<b>Second cycle</b>			X		

### COMMENDATIONS

1. The study programs can be commended for their transparency concerning the admission process.
2. Students are happy with the quality of their studies.
3. The quality of research at VU in both bachelors and masters programs is high and students are satisfied.

### RECOMMENDATIONS

#### To address shortcomings

The following recommendations are for the 2<sup>nd</sup> cycle program.

1. Transparency and Detail in Study Program Descriptions:  
University should update its website with comprehensive and detailed study program descriptions. Include information about course objectives, content, assessment methods, and prerequisites. Use plain language to explain complex concepts, avoiding jargon that might confuse students. Visual representations (such as flowcharts or infographics) can enhance understanding.
2. Teacher Feedback: Provide training for teachers on effective feedback practices. Establish clear guidelines for teachers regarding timely and constructive feedback.

#### For further improvement

None

## 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

Although the programs have adopted a teaching model that promotes the active participation of students in their learning process (In-person classes, seminars, hands-on laboratory work, and self-directed learning) and a due importance is given to providing continuous feedback a possible area of improvement could be the inclusion of a greater diversity of teaching and learning methods to address different learning styles and promote more active student participation. For example, project-based learning, collaborative learning or experiential learning approaches could be further explored. Additionally, the integration of innovative educational technologies could be considered to enrich the learning experience and provide additional opportunities for practice and application of knowledge. Improving the accessibility of educational resources and providing additional support for autonomous learning could also be important areas to consider to ensure a more inclusive and effective educational experience.

Interdisciplinarity is a strong value of these programs that should promote academic discussion, reasoning, creativity and critical thinking in the learning process. Students can be encouraged to address emerging challenges from multiple perspectives and develop innovative solutions. In addition, social responsibility and understanding of global and social diversity are promoted.

The evaluation process is based on principles of professionalism, transparency, equity and objectivity. A variety of assessment methods, such as tests, written assignments, laboratory work, projects and presentations, are used to measure student progress and achievement. Implementing a summative assessment system provides students with a clear understanding of how their performance will be evaluated.

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

VU has implemented a series of measures to ensure access to higher education for socially vulnerable groups and students with individual needs. This strategy addresses objectives related to disability, gender equality, cultural diversity, social exclusion, balance between study and work life, and anti-discrimination issues. Investments are made to adapt the physical environment of the university, providing access to compensatory equipment and advice to students and teachers on study availability issues. Flexible forms of performance assessment are used for students with special needs, taking into account individual needs, such as the use of expanded sources or extensions of time for exams. The university offers direct financial support to students from disadvantaged families or with special needs, including reducing the cost of tuition and providing special scholarships for talented students from disadvantaged families. Students facing temporary difficulties may suspend their studies for up to one year or take an academic leave for personal reasons, illness, pregnancy or childcare, upon presentation of supporting documents.

Although significant measures have been implemented, greater promotion and awareness of the resources and services available to students with special needs can be suggested, as well as more active monitoring to ensure that these students are receiving the necessary support to succeed in their education. superior. Additionally, it may be beneficial to explore the possibility of establishing mentoring or tutoring programs specifically designed for students with individual needs to provide them with additional support and personalized guidance.

#### **ANALYSIS AND CONCLUSION (regarding 4.1.)**

The above analysis reveals that VU has implemented a number of significant measures to promote the quality of teaching and learning, as well as to ensure access to higher education for socially vulnerable groups and students with individual needs.

In terms of teaching and learning, a student-centred approach is observed, with a variety of teaching methods designed to maximize the achievement of intended learning outcomes. Active student participation is encouraged through summative assessments and regular feedback is provided to facilitate consistent, in-depth learning. In addition, interdisciplinarity, argumentation, creativity and critical thinking are promoted, along with social responsibility and problem solving.

Regarding access to higher education for vulnerable groups and students with individual needs, effective policies and procedures have been established. The university has developed a comprehensive strategy to promote diversity and equality, with specific objectives related to disability, gender equality, cultural diversity and social exclusion. Concrete measures have been implemented to adapt the physical environment of the university and provide access to compensatory equipment. In addition, counselling and financial support programs are offered for students with special needs, and seminars and conferences are organized to raise awareness of disabilities in the university community.

Overall, VU's focus on improving teaching and learning, along with its efforts to ensure access to higher education for all students, demonstrates a commitment to excellence and equity in education. However, greater promotion and awareness of available resources and more active monitoring are suggested to ensure that all students are receiving the necessary support.

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 system for monitoring learning progress and feedback to students demonstrates a comprehensive and proactive approach to facilitate self-assessment and systematic planning of students' learning progress. At the course unit level, students receive regular feedback from teachers, who evaluate their progress and point out areas for improvement. Additionally, the study administration department monitors student progress throughout the academic year and takes steps to address worrying trends, such as high dropout rates. At the program of study level, program committees monitor student progress, evaluate the results of internships and final theses, and analyse data on student achievement and dropout rates. As for feedback to students,

it is offered individually and through group discussions. Students have the right to access their grades and receive detailed feedback on their performance.

However, a possible weakness in the system for monitoring learning progress and providing feedback to students could be the lack of specific mechanisms to systematically collect and use student feedback in making curricular decisions and improving teaching. Additionally, although regular feedback is provided to students, it may be helpful to implement additional systems to monitor the impact of this feedback on student learning over time. This could include collecting data on student performance improvement after receiving feedback and identifying areas where feedback could be more effective.

Another limitation could be the lack of resources or training for teachers in effectively delivering feedback. Although it is mentioned that teachers provide both summative and individual feedback to students, it may be necessary to provide them with more support and training in effective feedback techniques and how to integrate them more effectively into their teaching. Implementing a continuous evaluation system that involves students, teachers and employers to collect feedback on the quality of the program and identify areas for improvement could also enhance the program's quality.

#### 4.2.2. Graduate employability and career are monitored

The Career Tracking Information System (CTIS) Karjera.lt tools are utilized for graduate career tracking, employing both objective indicators from state information systems and subjective data from sociological surveys. The system collects data on graduate careers five years after graduation, updating it twice annually. The surveys are conducted one year, three years, and five years after graduation to evaluate employability, establishment in professional activity, and work satisfaction, respectively.

The Centralized VU alumni career tracking service provides general information on alumni employment, while detailed information was obtained from analysing alumni's LinkedIn profiles. Out of 24 first-cycle Biophysics SP graduates with LinkedIn accounts, 9 were employed, predominantly in biotechnology and IT-related sectors. Of the 11 second-cycle Biophysics SP graduates with LinkedIn accounts, 4 were employed, with a focus on biotechnology and IT. These findings indicate a significant number of students pursuing further studies in the third cycle.]

The graduate career monitoring systems are well organized and thoroughly analysed by VU. Information provided by governmental information systems and registers related to graduate career is tracked. Employers during the visit emphasized good education level, especially problem solving skills of biophysics programme graduates. The alumni are very well accepted in state research organisations and healthcare institutions.

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

The degree program strives to ensure academic integrity, tolerance and non-discrimination through a series of measures and policies. Ethical standards are established for both students and faculty, and various mechanisms are used to promote and enforce these standards and the availability of a program of integrity administered by the VU Student Representative Office.

However, a possible weakness or limitation in this aspect could be the need for greater awareness and sensitization about academic integrity, tolerance and non-discrimination throughout the university community. Although policies and procedures have been established, it may be necessary to implement additional training and education programs for students and faculty to reinforce these values and foster an even stronger culture of academic integrity and mutual respect. Additionally, it may be beneficial for the

program to establish additional mechanisms to continually monitor and evaluate the effectiveness of these policies in practice, as well as to identify and address any gaps or areas of improvement in promoting academic integrity and inclusion on campus.

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

The procedure for submitting and processing complaints and claims are defined in the regulations of the Dispute Resolution Commission of the Main Academic Units of Vilnius University. This provides students and staff with a clear framework to address any concerns related to the assessment process or any other academic matter.

However, a possible weakness or limitation in this aspect could be the lack of information or awareness on the grievance and grievance procedures on the part of students and teaching staff. Although procedures have been established, some members of the university community may not be fully informed about how to effectively file a complaint or grievance. Therefore, it may be beneficial to implement training and outreach programs to ensure that all students and staff are aware of the grievance and grievance procedures available and are comfortable using these channels to address any issues or concerns. Additionally, consideration could be given to establishing feedback systems to continually evaluate the effectiveness of these procedures and make improvements as necessary.

#### **ANALYSIS AND CONCLUSION (regarding 4.2.)**

Programs showcase a variety of teaching methods. However, they can still be improved by implementing more inclusive and diversified strategies to address a wide range of learning styles and individual needs. Regarding the guarantees of access to higher education effective measures have been implemented to guarantee equitable access to higher education for socially vulnerable groups and students with individual needs. However, there is a need for greater awareness and dissemination of these resources to ensure that all eligible students can benefit from them.

Systems have been established to monitor learning progress and provide feedback to students. These systems encourage self-assessment and planning of learning progress, which contributes to students' academic and personal development. Policies and procedures have been implemented to promote academic integrity, tolerance and non-discrimination in the university community. However, it is important to continue to educate and raise awareness among community members about these issues to create an inclusive and respectful environment for all. The procedures for submitting and processing complaints and grievances appear to be well established and effective. However, communication and awareness of these procedures can be improved to ensure that all members of the university community know how to appropriately address any issues or concerns.

Overall, the programs show a commitment to excellence in higher education and are on track to achieve their goals. However, there are areas identified for continued improvement, which could include diversification of teaching methodologies, greater dissemination of resources for vulnerable groups, continued education on academic integrity, and increased awareness of complaints and grievance procedures.



## AREA 4: CONCLUSIONS

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

### COMMENDATIONS

None

### RECOMMENDATIONS

To address shortcomings

None

For further improvement

1. An area of improvement could be the inclusion of a greater diversity of teaching and learning methods to address different learning styles and promote more active student participation: project-based learning, collaborative learning or experiential learning. Additionally, the integration of innovative educational technologies could be considered to enrich the learning experience and provide additional opportunities for practice and application of knowledge. Improving the accessibility of educational resources and providing additional support for autonomous learning could also be important areas to consider to ensure a more inclusive and effective educational experience.
2. It could be beneficial to enhance a greater promotion and awareness of the resources and services available to students with special needs, as well as more active monitoring to ensure that these students are receiving the necessary support to succeed in their education.
3. Additionally, it may be beneficial to explore the possibility of establishing mentoring or tutoring programs specifically designed for students with individual needs to provide them with additional support and personalised guidance.
4. It would be advisable to provide professors with more support and training in effective feedback techniques and how to integrate them more effectively into their teaching. In the same vein, to implement a continuous evaluation system that involves students, teachers and employers to collect feedback on the quality of the program and identify areas for improvement could also enhance the program's quality.
5. It could be convenient to implement additional training and education programs for students and faculty to reinforce these values and foster an even stronger culture of academic integrity and mutual respect. Also, it may be beneficial for the program to establish additional mechanisms to continually monitor and evaluate the effectiveness of these policies in practice, as well as to identify and address any gaps or areas of improvement in promoting academic integrity and inclusion on campus.

6. It may be beneficial to implement training and outreach programs to ensure that all students and staff are aware of the grievance and grievance procedures available and are comfortable using these channels to address any issues or concerns. Additionally, consideration could be given to establishing feedback systems to continually evaluate the effectiveness of these procedures and make improvements as necessary.

## 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

Currently, the teaching staff involved in biophysics consists of 68 academic teachers and scientists. Among them, there are 14 professors or research professors, 19 associate professors or senior researchers, 14 assistant professors or researchers, 12 teaching assistants or research assistants, and 9 lecturers. The teaching staff working at a minimum part time and with a minimum of 3 years of teaching experience make almost 90% of the total number of the teaching staff. The change in academic staff is negligible, mostly due to the employment rules at VU. PhD students are also involved in the implementation of the biophysics degree programs. They conduct tutorials and laboratory exercises, and supervise students' theses or internships. Teaching and research staff are employed in full positions or promoted after winning a public competition. The term of the contract for the teaching staff is five years. An open-ended employment contract is concluded with the pedagogical or research staff recruited for the principal position at VU after they win a competition for the same position at the university for the second time in a row. In order to determine whether the qualification of research and pedagogical staff corresponds to their current position, attestation is carried out every five years. The criteria for attestation are based on the number of research articles they have published, attendance of conferences, conducting of research projects, lecturing, preparation of methodological material, participation in the process of doctoral studies, supervision of students' research, expert activities, organisational and other scholarly work. Student feedback is also considered. These criteria look quite reasonable, however, the limitation is a lack of assessment of real contribution to science by evaluating the importance of discoveries, not only the number of publications or communications at conferences.

#### ANALYSIS AND CONCLUSION (regarding 5.1.)

The teaching staff capacity is more than sufficient to conduct lectures and practical (laboratory) classes in Neurobiophysics. However, the number of professors exceeds significantly the number of younger teachers. The rotation of staff is negligible due to rules of employment at VU. The criteria of evaluation of academic teachers are clear and look quite reasonable, however, the limitation is a lack of assessment of real contribution to science by evaluating the importance of discoveries, not only the number of publications or communications at conferences.

### 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

Academic teachers are able to increase their mobility by participating in various programs, especially ERASMUS+, NORDPLUS, ISEP. The visits consist of qualification training courses, monitoring visits,

international cooperation visits, teaching visits and staff qualification training visits to foreign universities and non-university institutions. Moreover, on the basis of bilateral agreements there are additional possibilities to visit other schools or institutes. The teaching staff in biophysics usually use the opportunities provided by the Erasmus+ exchange program. Study visits abroad usually last for a week or so. In addition, lecturers from different countries visit VU to deliver lectures to students. Several such visits took place during last 3 years.

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

In 2018, a system for improving the pedagogical competencies of the VU teaching staff was launched. Moreover, the Centre for Educational Excellence proactively responds to current issues in the field of studies and updates programmes, offering specific activities. VU also organises an introduction programme for all new lecturers.

Teachers can improve their research competences mainly by participating in national and international conferences. They make presentations and expand their experience by listening to other presentations and participating in discussions. Participation in various projects in which team research is carried out, writing articles, participating in the work of editorial boards of scientific journals, and reviewing articles also help improve their competence. There are no special courses in the fields of academic writing or presenting results.

### ANALYSIS AND CONCLUSION (regarding 5.2.)

There are generally good conditions to develop competences by teachers. Mobility is possible mainly due to participation in various programs and individual research contacts. Development of pedagogical skills is also ensured by special programs. However, there are no programs for developing research skills, apart from participating in realization of projects and presenting results at conferences.

## AREA 5: CONCLUSIONS

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

### COMMENDATIONS

None

### RECOMMENDATIONS

To address shortcomings

None

For further improvement

1. Although the university offers training courses in teaching skills, the prevailing impression is that these courses do not focus on the methodological aspects that facilitate educational innovation. Specifically, they do not promote a student-centered teaching and learning model, which is more active and participatory than the traditional model based on the activities of the teaching staff and master classes. It is believed that gradually shifting from a teacher-centered to a student-centered model might significantly improve the quality of teaching. It is therefore recommended to consider the implementation of a system of these characteristics that can contribute not only to the improvement of the quality of teaching but also to the professional promotion of teachers as teachers.
2. For the academic promotion of the teaching staff, it is suggested that teaching is given a balanced weight with respect to the quality of scientific production.

## 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

There are 24 lecture rooms available, with seating capacity between 28 and 360 places. For practical classes, there are 12 laboratories with capacity for a maximum of 24 students. For bioinformatic purposes, 3 computer classrooms are provided. For students performing diploma works, some 30 research laboratories are available, where students join research projects. Moreover, students have the opportunity to perform projects in other departments, institutes and universities, either in Lithuania or abroad. Lecture rooms are equipped with tables, chairs, boards, screens, multimedia equipment, computers, and some have TV monitors and teleconferencing equipment. All rooms have access to computers and multimedia equipment. All rooms have cable internet and wireless internet to connect to computers or multimedia equipment. Educational laboratories are equipped with the appropriate equipment. Library contains large collections of books and journals, and provide sufficient access to electronic publications. For the adaptation of facilities to students with disabilities we refer to text above in Area 4.

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

Requirements for resources are discussed by the departments and research groups. Applications are then submitted to the administration. Depending on the funds available at that time, the required resources can be purchased. However, it appears that these funds are very limited, thus, planning and upgrading resources is very difficult.

In addition to the centralised supply of resources, individual funds are provided for students preparing final theses for the purchase of materials and reagents. Last year, 150 euros were allocated to students of the first-cycle, and 200 euros were allocated to students in the second-cycle of biophysics. The existence of such funds is a positive sign, however, the amounts offered are very low, evidently not sufficient to cover actual costs.

#### ANALYSIS AND CONCLUSION (regarding 6.1.)

Lecture rooms, computer rooms, laboratories for practical classes, and research laboratories are well equipped. The library has large collection of books and journals and provides access to electronic publications. Such infrastructure provides good conditions for teaching and conducting research. Planning and upgrading resources are more problematic, mainly due to restricted funds. Increasing the amount of money available for these purposes might be one of the most important, while also most challenging, activities in the near future.

## AREA 6: CONCLUSIONS

<b>AREA 6</b>	<b>Negative - 1</b> Does not meet the requirements	<b>Satisfactory - 2</b> Meets the requirements, but there are substantial shortcomings to be eliminated	<b>Good - 3</b> Meets the requirements, but there are shortcomings to be eliminated	<b>Very good - 4</b> Very well nationally and internationally without any shortcomings	<b>Exceptional - 5</b> Exceptionally well nationally and internationally without any shortcomings
<b>First cycle</b>					X
<b>Second cycle</b>					X

### COMMENDATIONS

- The facilities for teaching and research are excellent.

### RECOMMENDATIONS

To address shortcomings

None

For further improvement

None

-

## 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 study quality assurance system at Vilnius University was developed as part of the project "Development and Implementation of the Internal Study Quality Management System of Vilnius University." This system is implemented in accordance with the standards and guidelines for quality assurance in the European Higher Education Area. The main objective of study quality assurance at Vilnius University is to foster a quality culture aligned with the university's mission.

Vilnius University employs various processes and procedures for internal quality assurance of studies, including the approval, monitoring, and evaluation of study programs. They also monitor and analyse the study process, implement and improve systems for assessing student achievement, distance learning, computer examination, and plagiarism detection. Additionally, they focus on the development of lecturers' pedagogical competence, implement programs to prevent drop-outs, ensure a suitable study environment and resources, provide career counselling services, and collect feedback from students, lecturers, employers, and social partners.

The Study Programme Committee (SPC) is responsible for ensuring the quality and continuous improvement of study programs at Vilnius University. This committee consists of lecturers, social partners, and student representatives. The SPC analyses various aspects of study programs, such as the number of admitted students, their admission scores, internationality of studies, student satisfaction, learning facilities and resources, implementation costs, and competences of the academic staff. They also evaluate progress, assess workload, and gather qualitative and quantitative data related to the quality of studies.

One of the primary tasks of the SPCs is to enhance study program coherence by aligning program aims, competences, content, methods, and student performance assessment. They analyse feedback from academic units, students, graduates, teaching staff, and social partners to identify areas for improvement and address problems relevant to students. The SPCs collaborate with senior management, teaching staff, and students to find solutions and discuss resource allocation with the LSC management. Alumni and social partners confirmed their involvement in quality management process.

The LSC deputy director for studies, who also serves as the chair of the LSC Collegium of Studies, plays a vital role in the internal quality assurance system. The Collegium of Studies ensures the balance and consistency of programs implemented by the Learning Services Center. They address issues and make decisions when the SPC's opinion alone is insufficient. The Collegium also disseminates good practices and experiences. The Study Department administrators assist the LSC deputy director for studies in carrying out the internal quality assurance of the Biophysics study programs.

Changes to study programs are considered and approved by the SPCs, LSC Council, and sometimes, the University Senate. The aim is to ensure a rational number of study programs and maintain the uniqueness



and compatibility of their aims, outcomes, and content. The VU Study Quality and Development Department supervises the process of study program updates.

Overall, the study quality assurance system at Vilnius University is designed to promote continuous improvement, ensure program coherence, and provide a supportive and enriching study environment for students.

An area in which some room for improvement has been detected, is related to the promotion of quality, and in particular of teaching, is the lack of a systematic, comprehensive and periodic evaluation protocol of the quality of teaching activity. The evidence provided shows that it is currently based on the results of satisfaction surveys that are passed on to students, which, while undoubtedly relevant evidence, is nevertheless not able to provide a complete and rigorous measure of this dimension so important for the quality of the study programs. It is recommended to pay more attention to the systematic evaluation of teachers' pedagogical skills and include it in their career promotion. Additionally, it is suggested that the evaluation of teachers' skills should incorporate other metrics beyond student feedback..

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

Social partners contribute to improving study quality by collaborating with educational institutions in various ways. They offer internships, participate in lectures and career events, review theses, and provide feedback. Employers' opinions are essential, and surveys are conducted to gather their evaluations and improve program organization, study processes, and faculty composition. Alumni involvement is crucial, as they participate in meetings, conferences, and serve as lecturers or supervisors, bringing valuable expertise to enhance education quality.

Students also benefit from the contributions of social partners. Through internships, they gain practical experience and exposure to real-world challenges. Career events organized by these partners help students explore different industries and connect with potential employers. By reviewing theses, social partners provide valuable insights and ensure that academic research aligns with industry needs. Moreover, their involvement in program organization ensures a relevant and up-to-date curriculum. The expertise shared by alumni during meetings and conferences helps students understand the latest industry trends and equips them with the necessary skills for their future careers.

Overall students and social partners are actively involved in study programme quality assurance processes.

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

The CAU's administration and faculty utilize the VU Study Information System (VUSIS), featuring various applications and functioning as a repository for managing field study programs. One primary application is the study program administration, which allows for managing student information, including their personal data, academic assessments, registration for elective courses, thesis topics, and certificate issuance. This system generates student-related decrees from the Dean or Rector regarding topics such as term papers, visits to foreign universities, etc. VUSIS processes admission information and student statistics, and facilitates diplomas supplements preparation.

Teaching staff uses electronic workstations to input examination results, upload course descriptions, and access student lists. VUSIS facilitates information management and study implementation. Students can view

study assessment results on the vu.lt page, CAU websites, intranet, and in VUSIS. Reports on study improvement plans and progress are published on the intranet for student access through SPC activities. Information on study quality and stakeholder feedback is gathered according to the procedure for gathering feedback from VU stakeholders to enhance study quality. These efforts link to indicators within the VU Strategic Plan. Surveys on study quality are carried out and monitored by core academic and non-academic departments, with students, teaching staff, and LSC administration working together to recognize emerging issues and propose solutions.

It would be advisable for the sake of clarity and transparency, that the study programs and contents of the modules of the study program are publicly accessible to provide correct knowledge of it to potentially interested students.

#### 7.1.4. Student feedback is collected and analysed

VU conducts surveys during and at the end of each semester to assess the quality of studies in various fields. The surveys are carried out by the VU Study Quality and Development Department and the Department of Study Quality and Development. The surveys gather feedback from students regarding the quality of the course units (modules), studies in a semester, and the quality of the study programme. The results of the surveys are used to improve the content of courses, quality of instruction and assessment procedures, improve study programmes and ensure their quality, advise lecturers about professional training opportunities, improve the activities of the faculties and the University, and monitor the quality of studies. The students are also represented by the VU Student Representation, which is a legislative body of the University. The students can express their opinions anonymously and contribute to the improvement of the quality of their studies by submitting suggestions.

#### ANALYSIS AND CONCLUSION (regarding 7.1.)

Vilnius University has a comprehensive and effective internal quality assurance system, ensuring continuous improvement and alignment with European standards. Stakeholder involvement, including students, alumni, and employers, is strong, contributing to relevant and high-quality study programs. The transparency of program information through VUSIS is commendable, although further clarity and accessibility of study program content are recommended. Regular student feedback collection and analysis support ongoing improvements, though a more systematic evaluation of teaching quality could enhance the system further. Overall, VU's commitment to quality assurance fosters a supportive and enriching environment for students.

### AREA 7: CONCLUSIONS

AREA 7	Negative - 1 Does not meet the requirements	Satisfactory - 2 Meets the requirements, but there are substantial shortcomings to be eliminated	Good - 3 Meets the requirements, but there are shortcomings to be eliminated	Very good - 4 Very well nationally and internationally without any shortcomings	Exceptional - 5 Exceptionally well nationally and internationally without any shortcomings
First cycle				X	
Second cycle				X	

### **COMMENDATIONS**

1. The university has developed a quality management system that is applied to all study programs and is considered an important aspect.

### **RECOMMENDATIONS**

To address shortcomings

None

For further improvement

1. It would be advisable to make the name of the 1<sup>st</sup> cycle program more general but also to facilitate easy access to the programs and contents of the modules so potential students can make a well substantiated choice of the first-cycle study.

## IV. SUMMARY

The overall conclusion of the review panel is that both the 1<sup>st</sup> and 2<sup>nd</sup> cycle programmes are very good. A summary of our most important conclusions is given below together with several recommendations to address shortcomings plus recommendations for further improvements.

Both study programmes seek to offer high-quality education at an international level and they are designed to meet the needs of Lithuanian society and the labour market. Students have the opportunity to acquire both theoretical and practical skills at a very good level and students are in general happy with their study, both in the 1<sup>st</sup> and 2<sup>nd</sup> cycle. During the studies the importance of interdisciplinarity is emphasized and opportunities for specialization and practical research are provided. As part of the study program students can also follow elective courses. However, experts believe that these elective course options could be further diversified in consultation with students and social partners. Also the introduction of more courses and modules that encourage the development of critical thinking, problem-solving, and teamwork skills from the beginning of the program would be beneficial.

The link between teaching and scientific research is well guaranteed in the study programs. The teachers-researchers in the programme show a high level of research activity which ensures that courses and research projects are directly related to up-to-date science. The students have many occasions and opportunities to be informed about the latest scientific developments.

The name and contents of the 1<sup>st</sup> cycle program do not fully match. The name Neurobiophysics is rather specific and suggests a substantial biophysics component. However, the physics and biophysics parts are underrepresented. Therefore, the name Neurobiophysics is somewhat misleading. We strongly recommend to make a serious attempt to increase the (bio)physics part of the SP or otherwise give the program a more general name. Students can in principle choose for more physics and biophysics education in the elective courses but it would be good if the SP would specifically advise students which courses to take to obtain a degree that is more biophysics oriented and matches better with what would be expected internationally from a BSc in Biophysics. Another option would be to provide two tracks during the first cycle, one more (bio)physics oriented and the other more neurobiology oriented, for example after the 2<sup>nd</sup> year. In any case it would be good to facilitate easy online access to the programs and contents of the modules so potential students can make a well substantiated choice for the first-cycle study and not be misled by the name of the study program.

Additional resources for modelling and data analysis during the study would be helpful, in particular for those who want to do theoretical projects.

It is important to point out that in the 2<sup>nd</sup> cycle program there are courses that are only given in Lithuanian while they should be given in English. This should be addressed. It also turned out that not all teachers are willing to show students the mistakes in their exams or provide detailed feedback and also this issue needs to be addressed to ensure a more effective and supportive learning environment.

Regarding the teacher development, there are generally good conditions to develop competences by teachers. Mobility is possible due to participation in various programs and individual research contacts. Development of pedagogical skills is also facilitated by special programs. However, it would be advisable to provide teaching staff with more support and training in effective feedback techniques, and teach them how to integrate them more effectively into their teaching. To implement a continuous evaluation system that

involves students, teachers and employers to collect feedback on the quality of the program and identify areas for improvement could also enhance the program's quality. It is believed that gradually shifting from a teacher-centered to a student-centered model might improve the quality of teaching. It is therefore recommended to consider the implementation of a system of these characteristics that can contribute to the quality of teaching and the professional promotion of teachers as teachers. For the academic promotion of the teaching staff, it is suggested that teaching is given a balanced weight with respect to the quality of scientific production.

The facilities for teaching and research are excellent. The same is true for the library and concomitantly the access to books and (electronic) journals although not all students are aware of the offered possibilities.

The academic, financial, social, psychological, and personal support services offered to students are comprehensive and effectively address the diverse student needs, contributing significantly to their overall success and well-being.

Finally we would like to express our appreciation for all the efforts that were made in writing a comprehensive and clear self-evaluation report and to organize the pleasant site visit that provided us with the opportunity to see the premises and facilities. The meetings with many people were very insightful and the openness of the discussions is highly appreciated.

## EXAMPLES OF EXCELLENCE

Examples of excellence should include examples exhibiting exceptional characteristics that are, implicitly, not achievable by all.

*If, according to the review panel, there are no such exceptional characteristics demonstrated by the HEI in this particular study field, this section should be skipped / left empty.*