



CENTRE FOR QUALITY ASSESSMENT IN HIGHER EDUCATION

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**EVALUATION REPORT**  
**STUDY FIELD of BIOLOGY**  
at Vilnius University

**Expert panel:**

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2. Prof. dr. Jasna Štrus, *academic*;
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**Evaluation coordinator – Ms Natalija Bogdanova**

Report language – English

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## Study Field Data\*

### I.

Title of the study programme	<b>Biology</b>
State code	6121DX003
Type of studies	University
Cycle of studies	First
Mode of study and duration (in years)	Full time, 4 years
Credit volume	240 ECTS
Qualification degree and (or) professional qualification	Bachelor of Life Sciences
Language of instruction	Lithuanian
Minimum education required	Secondary
Registration date of the study programme	19 May, 1997

### II.

Title of the study programme	<b>Biodiversity</b>
State code	6211DX003
Type of studies	University
Cycle of studies	Second
Mode of study and duration (in years)	Full time, 2 years
Credit volume	120 ECTS
Qualification degree and (or) professional qualification	Master of Life Sciences
Language of instruction	Lithuanian
Minimum education required	Higher university's education of Bachelor degree
Registration date of the study programme	16 May, 2015

### III.

Title of the study programme	<b>Neurobiology</b>
State code	6211DX004
Type of studies	University
Cycle of studies	Second
Mode of study and duration (in years)	Full time, 2 years
Credit volume	120 ECTS
Qualification degree and (or) professional qualification	Master of Life Sciences
Language of instruction	Lithuanian, English
Minimum education required	Higher university's education of Bachelor degree
Registration date of the study programme	31 August, 2009

*\* if there are **joint / two-fields / interdisciplinary** study programmes in the study field, please designate it in the foot-note*

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## I. INTRODUCTION

### 1.1. BACKGROUND OF THE EVALUATION PROCESS

The evaluation of study fields is based on the Methodology of External Evaluation of Study Fields approved by the Director of the Centre for Quality Assessment in Higher Education (hereafter – SKVC) 31 December 2019 Order [No.V-149](#).

The evaluation is intended to help higher education institutions to constantly improve their study process and to inform the public about the quality of studies.

The evaluation process consists of the main following stages: 1) *self-evaluation and self-evaluation report prepared by Higher Education Institution (hereafter – HEI)*; 2) *site visit of the expert panel to the higher education institution*; 3) *production of the external evaluation report (EER) by the expert panel and its publication*; 4) *follow-up activities*.

On the basis of this external evaluation report of the study field SKVC takes a decision to accredit study field either for 7 years or for 3 years. If the field evaluation is negative then the study field is not accredited.

The study field and cycle are **accredited for 7 years** if all evaluation areas are evaluated as exceptional (5 points), very good (4 points) or good (3 points).

The study field and cycle are **accredited for 3 years** if one of the evaluation areas was evaluated as satisfactory (2 points).

The study field and cycle are **not accredited** if at least one of evaluation areas was evaluated as unsatisfactory (1 point).

### 1.2. EXPERT PANEL

The expert panel was assigned according to the Experts Selection Procedure (hereinafter referred to as the Procedure) as approved by the Director of Centre for Quality Assessment in Higher Education on 31 December 2019 [Order No. V-149](#). The site visit to the HEI was conducted by the panel on *17<sup>th</sup> November 2021*.

**Prof. dr. Mark Stephen Davies (panel chairperson)** *Professor Emeritus of Dep. of Life Sciences, University of Sunderland, U. K.;*

**Prof. dr. Trine Johansen Meza**, *Professor of Dep. of Health Sciences, Pro-rector of Research and Artistic Development, Kristiania University College, Norway;*

**Prof. dr. Jasna Štrus**, *Professor Emerita of Dep. of Biotechnologies, University of Ljubljana, Slovenia;*

**Assist. prof. dr. Mirela Sertić Perić**, *lecturer at Dep. of Biology, University of Zagreb, Croatia;*

**Mr Arūnas Leipus**, *Product Manager in Biomatter Designs Ltd., Business Development Consultant in UAB Baltymas, Ltd., Lithuania;*

**Dr. Marcel Tarbier**, *Postdoc in Computational Biology at Karolinska institutet and Science of Life Laboratory, PhD student in Molecular Bioscience at Stockholm University (PhD defended in 2021), Sweden.*

### 1.3. GENERAL INFORMATION

The documentation submitted by the HEI follows the outline recommended by SKVC. Along with the Self-evaluation report and annexes, the following additional documents have been provided by the HEI before, during and/or after the site visit:

No.	Name of the document
1.	A list of additional evidence and factual questions (18 documents)
2.	Diploma supplements
3.	Compulsory courses of SP Biology
4.	Compulsory courses of SP Biodiversity
5.	Compulsory courses of SP Neurobiology

### 1.4. BACKGROUND OF THE STUDY FIELD/STUDY FIELD POSITION/STATUS AND SIGNIFICANCE IN THE HEI

Vilnius University ('VU') was founded in 1579 and is the oldest and largest university in Lithuania. Following the principle of academic self-governance its structure is laid down in its statutes and its main decision making bodies are the Senate, the Council and the Rector. In total there were about 5,000 employees (~2,200 teaching and ~750 research staff) and 21,000 students in 2020. As of 2021 there are 15 core academic units ('CAU') and 12 core non-academic units which communicate and cooperate in the implantation of the universities strategic plan. VU is a *universitas litterarum* offering undergraduate, postgraduate and doctoral studies in humanities, social sciences, natural sciences, medical and healthcare sciences and technological sciences, resulting in more than 90 Bachelor's (7 in life sciences) and more than 100 Master's and professional study programs (9 in life sciences) in 59 fields of studies (summarized in 12 groups of fields). Biological studies are offered by the Life Sciences Centre ('LSC') which has been established in 2016. It features three Institutes: Biochemistry, Biosciences, and Biotechnology. Its main governing bodies are the Council and the Director. The LSC employs ~300 teaching, research and administrative staff and has ~850 students. Biology studies were launched in 1991 and the first programme was offered in 1997. To tackle decreasing numbers of students the studies were reorganized keeping a broad biology programme flanked by more specialized subject studies.

The Bachelor's programme in Biology was last evaluated in 2017 and accredited for 3 years. Since then the programme was updated and merged with the Ecology programme, essentially closing the Ecology programme and adding its contents as specialization to the Biology programme. Modules were harmonized to multiples of 5 credits and the number of electives was increased. Methods of assessment were diversified and new theses procedures were put in place. The Master's programme in Biodiversity was established in 2015 and the first students were enrolled in 2016. It's the only programme of its kind in the Baltic countries. The Master's programme in Neurobiology was established in 1997 in a project collaboration with Oxford and Manchester university in the United Kingdom, Kuopio University in Finland and the University of Western Ontario in Canada. It's the only Neurobiology Master's programme in Lithuania and was evaluated in 2013 and accredited for 6 years.

## II. GENERAL ASSESSMENT

*Biology* study field and first cycle at Vilnius University is given **positive** evaluation.

*Study field and cycle assessment in points by evaluation areas*

No.	Evaluation Area	Evaluation of an Area in points*
1.	Intended and achieved learning outcomes and curriculum	3
2.	Links between science (art) and studies	4
3.	Student admission and support	4
4.	Teaching and learning, student performance and graduate employment	3
5.	Teaching staff	3
6.	Learning facilities and resources	5
7.	Study quality management and public information	3
	Total:	25

\*1 (unsatisfactory) - there are essential shortcomings that must be eliminated;

2 (satisfactory) - meets the established minimum requirements, needs improvement;

3 (good) - the field is being developed systematically, has distinctive features;

4 (very good) - the field is evaluated very well in the national and international context, without any deficiencies;

5 (excellent) - the field is exceptionally good in the national and international context/environment.

*Biology* study field and second cycle at Vilnius University is given **positive** evaluation.

*Study field and cycle assessment in points by evaluation areas*

No.	Evaluation Area	Evaluation of an Area in points*
1.	Intended and achieved learning outcomes and curriculum	3
2.	Links between science (art) and studies	4
3.	Student admission and support	3
4.	Teaching and learning, student performance and graduate employment	3
5.	Teaching staff	3
6.	Learning facilities and resources	5
7.	Study quality management and public information	3
	Total:	24

\*1 (unsatisfactory) - there are essential shortcomings that must be eliminated;

2 (satisfactory) - meets the established minimum requirements, needs improvement;

3 (good) - the field is being developed systematically, has distinctive features;

4 (very good) - the field is evaluated very well in the national and international context, without any deficiencies;

5 (excellent) - the field is exceptionally good in the national and international context/environment.

### III. STUDY FIELD ANALYSIS

#### 3.1. INTENDED AND ACHIEVED LEARNING OUTCOMES AND CURRICULUM

*Study aims, outcomes and content shall be assessed in accordance with the following indicators:*

*3.1.1. Evaluation of the conformity of the aims and outcomes of the field and cycle study programmes to the needs of the society and/or the labour market (not applicable to HEIs operating in exile conditions)*

##### *(1) Factual situation*

The SER contains a very detailed text on this indicator. According to SER, VU aims to actively contribute to the country's strategic goal of attracting, training and retaining young domestic and foreign professionals (future labour market participants) in the field of biology so that they can contribute to the Lithuanian economy. The SER further notes that the degree programmes in biology offered at VU (Bachelor in Biology, Master in Biodiversity and Master in Neurobiology) are the only ones in the country strongly oriented towards the training of biology professionals with a broad profile in the first degree programme and professionals with in-depth knowledge in biology in the second degree programme. In addition to a broad biological knowledge, the Biology B.Sc. programme aims to provide general competencies and to identify the scientific and professional interests of students within the framework of modern life sciences. In terms of content, this programme is closest to the Biology and Genetics programme offered by Vytautas Magnus University, but according to the SER, these two programmes differ in terms of courses and choice of specialisations. The M.Sc. programme Biodiversity is the only Master's programme of its kind in Lithuania and neighbouring countries. Its aim is to train students in the application of Lithuanian and international legal acts related to biodiversity, global change, ecology, sustainability and conservation. The M.Sc. Neurobiology programme is the only programme in Lithuania that trains neurobiologists who are able to apply modern knowledge and understanding of neurobiology in research and practical activities related to life sciences, biotechnology, biomedicine, etc. The SER notes that there is close collaboration between VU and social partners from academia and industry, government agencies and non-governmental organisations. According to the SER, the relevance of VU biology programmes to the requirements of the labour market and society is additionally ensured by study accreditation (external expert evaluation of the programme) and surveys of students, graduates and social partners. Graduates of the first cycle (Bachelor's degree in Biology) can work in research institutes, environmental protection, business enterprises and non-governmental organisations engaged in biology, ecology and environmental research. They can also work as a biology teacher, as there is an option to choose a minor in education to obtain the teaching qualification. Graduates of the Bachelor's programme can continue their studies in the Master's programme in biological sciences (Microbiology, Biodiversity, Genetics, Neurobiology, Biophysics), medicine (Medical Biology) and in specialised programmes (Biology Teacher). Graduates of the Master's Degree in Biodiversity and the Master's Degree in Neurobiology can work as researchers, lecturers, teachers, experts, consultants in research



and training areas at various academic institutions (e.g. Nature Research Centre), VU and other national and foreign academic institutions; public institutions (e.g. Ministry of Environment, municipalities); medical institutions, non-governmental organisations, and private companies (e.g. pharmaceutical companies). Graduates of the Biodiversity and Neurobiology programmes can also continue their studies in the third cycle (i.e. PhD programmes) in Lithuania and abroad.

## *(2) Expert judgement/indicator analysis*

The part of SER dedicated to indicator 1.1 is too long (about 3 pages) and should be reduced to the main facts and evidence in the future. The panel judges that the objectives and outcomes of the biology degree programmes offered at VU (Bachelor in Biology, Master in Biodiversity and Master in Neurobiology) meet the needs of society and the labour market. This judgement is based on the positive opinions of alumni and social partners during the site visit. VU faculty members also confirmed that the programmes as a whole enable their graduates to successfully integrate into the labour market in Lithuania. According to the students of the Master's programme, a biologist with broad expertise is in demand on the modern market, as (s)he is able to understand the general scientific, biomedical, biotechnological, economic, ecological and environmental problems. Graduates confirm that the VU's study programmes prepared them well for the job market, and employers confirm that the programme provided graduates with a broad theoretical knowledge and solid practical skills. The panel concluded that there are strong links between academic staff and employers and that the study programme benefits from this. Representatives of the social partners indicated that they are actively involved in (re)designing the programmes (e.g. by listing the types of skills they expect from their future employees) and some of them are invited to lecture on certain courses, which gives graduates the opportunity to learn about the needs of the labour market and to understand what knowledge and skills future employers expect. Graduates indicated that some lectures are held at social partner sites where students meet future employers and learn the ins and outs of the job. For some courses, lab classes are taught by PhD students at VU.

Some social partners point out that there is a need in Lithuania, albeit a small one, for specialists with versatile knowledge and a range of skills related to issues of biodiversity, its use and protection. They would like to have more specialists in their fields, but think that the shortage of well-trained specialists depends strongly on the global demographic situation. Panel members believe that despite the global demographic situation, VU could increase the active involvement of social partners in the development of study programmes to better meet the rapidly changing needs of society and the labour market. In addition, undergraduate biology programmes should allow for the development of skills that encompass contemporary issues within biology (not just broad classical biological theoretical knowledge). However, it appears that VU is improving its programmes, as evidenced by the fact that changes were made to the programmes after the last external evaluation of the programmes in 2017, and these changes have reduced the downward trend in the number of students enrolled in the master's programmes. Students indicate that about 50% of B.Sc. graduates after the first cycle either work in the biology branch (e.g. Thermo-Fisher) or in other branches unrelated to biology, while 30-40% continue their studies in the second and third cycles (i.e. M.Sc. and PhD

programmes), mostly at VU. Some students confirm that they can work as educators in school (after completing a summer pedagogical module).

### *3.1.2. Evaluation of the conformity of the field and cycle study programme aims and outcomes with the mission, objectives of activities and strategy of the HEI*

#### *(1) Factual situation*

In several strategic priority areas identified for 2018-2020, one of the main missions of VU is to foster cognitive and creative forces both in Lithuania and in the world, to cultivate academic and other spiritual and social values, and to educate active, responsible citizens and leaders of Lithuanian society. In 2021, VU adopted its new long-term strategic plan for 2021-2025, which is dedicated to: i) maintaining high academic performance and high-quality training of students' competences required for the labor market and society, ii) developing interdisciplinary and international aspects of studies, iii) creating specialists able to successfully engage in national and international research teams. According to the SER, the plan implies that the University is committed to becoming a recognized European university and developing research and studies at an international level. This strategic priority is to be achieved by training graduates according to the international standards/programmes of universities in other countries. The strategic goal of VU is to be the university that enhances Lithuania: to strengthen the economic, social and cultural capital of the country and to prepare students for the global working environment. The strategy also includes the principles of the European Green Deal, which is important for the country's participation in the circular economy and the preservation of ecosystems and biodiversity.

#### *(2) Expert judgement/indicator analysis*

The panel concludes that the goals and learning outcomes of the biology programmes are consistent with the primary mission and strategy of VU. Further explanation was provided in the senior management meeting during the site visit, where meeting participants indicated that they have ongoing collaboration with local (national) and international biodiversity and biomedical professionals/organisations. Discussions with staff, students and social partners provided solid evidence that the focus of VU 's biology programmes is on providing students with comprehensive theoretical and laboratory training that is recognised as highly valuable by members of the local (national) labour market. Regarding the goal of internationalisation of the university, the SER gives some examples (e.g., the international study environment in biology programmes is maintained by international mobility of students and offering courses/programmes e.g., Neurobiology, entirely in English). In addition, VU students and faculty members confirmed during the visit that VU supports student exchange/internship programmes. Faculty and management representatives from VU indicated that they would like to develop an effective strategy to maintain the quality of their study programmes, which they consider one of their greatest strengths. The panel concluded that biology study programmes at VU would certainly benefit from the development of an effective and appropriate strategy to support VU's mission to design (and sustain) high quality study programmes that embrace not only a broad classical theoretical approach to teaching,

research and learning, but also modern/emerging teaching, learning and research methods. The strategy should also be supported by the curriculum and associated learning outcomes.

### *3.1.3. Evaluation of the compliance of the field and cycle study programme with legal requirements*

#### *(1) Factual situation*

The study programmes in the field of study Biology have been prepared/implemented in accordance with the Lithuanian Qualification Framework, the Description of General Requirements for Study Implementation, the Descriptor of Study Cycles and the Study Regulations of Vilnius University. All studies in this area meet the requirements of the legal acts for the first and second cycle of studies, as shown in Table 1 of the SER. Detailed study plans of the study programmes showing the coherence between the learning outcomes and the courses of the programme can be found in Annex 1 and 2 of the SER.

#### *(2) Expert judgement/indicator analysis*

The panel considers that the study programmes of VU in the field of biology meet the respective legal requirements and the needs of the Lithuanian society and labour market. The objectives and outcomes of the study programmes in the field of biology are aligned with Lithuanian qualification levels (for Bachelor's programmes – qualification level 6 and for Master's programmes – qualification level 7). No less than 15 credits are appointed to final thesis in Bachelor's programme (25 credits) and no less than 30 credits in the Master's programme (35 credits in Biodiversity and 30 in Neurobiology); no less than 120 credits of courses (modules) are in the field of study in the Bachelor's programme (170 credits) and no less than 60 credits in the Master's programme (65 credits in Biodiversity and 70 credits in Neurobiology). The SER provides basic/supporting legal documents. Evidence to support the factual claim can be found in Appendices 1 and 2 of the SER, which provide a clear rationale for the relevant legal parameters, i.e. the alignment of the objectives of the study programmes and the relevant competences and student learning outcomes arising from the listed legal documents. As indicated by the teachers and management during the site visit, they are aware that there is much room for improvement in terms of their own organisational structure in line with the legal/governmental decisions, their own mission and strategy, and the available infrastructure and funding.

### *3.1.4. Evaluation of compatibility of aims, learning outcomes, teaching/learning and assessment methods of the field and cycle study programmes*

#### *(1) Factual situation*

The SER contains a very detailed text dealing with this indicator. The objectives and outcomes of the study programmes in the field of biology are formulated following the Lithuanian qualification levels (for Bachelor's programme – qualification level 6 and for Master's

programmes – qualification level 7). The SER identifies 16 study programme outcomes for Biology B.Sc., 12 study programme outcomes for Biodiversity M.Sc. and 13 study programme outcomes for Neurobiology M.Sc. The programme outcomes are divided into 2 large categories (General competences and Special skills) and to 5 subcategories, respectively: 1) personal skills, 2) social skills, 3) knowledge and application of knowledge, 4) specific skills and 5) ability to conduct research. Most of the programme outcomes are achieved through coursework accompanied by hands-on instruction and laboratory work, while courses focused on specialised knowledge cover a few specific programme outcomes.

Learning outcomes are achieved through courses. Most courses bring 5 credits, while some (more demanding ones) earn 10 credits. The bachelor's thesis earns 25 credits and the master's thesis 30 credits. One credit is equivalent to 25-30 student hours of work, consisting of contact hours and independent study. The first cycle study (B.Sc. Biology) provides students with a broad basic knowledge in the field of biological sciences, but also in mathematics, physics and chemistry. The second cycle studies (M.Sc. Biodiversity, M.Sc. Neurobiology) also provide students with a broad theoretical knowledge, and (according to the SER) also subject-specific knowledge and practical skills that are important for their research activities. The compatibility of objectives, learning outcomes, teaching/learning and assessment methods of field and cycle study is supported by Annex 1 (Aims and Outcomes of the Study Programmes in the Field of Biology), Annex 2 (a table linking the study plans of student competencies and learning outcomes across course units) and Annex 3 (a table showing the coherence between programme outcomes, course outcomes, study and assessment methods) of the SER.

Achievement of each course outcome is supported by a variety of study methods as outlined in Annex 3 of the SER. Students learn to work individually and in groups, to search and use literature sources, and to communicate their findings. In addition to a broad theoretical knowledge, students also train specific skills such as the ability to work safely with chemicals, biological materials and equipment, to perform standard laboratory procedures, to collect and process biological samples and to perform qualitative and quantitative biological measurements. The study programmes also allow students to develop their social and personal skills: they learn to independently analyse and critically discuss scientific literature.

Lecturers choose assessment methods at their discretion (as shown in Annex 3 of the SER). Most courses in biology programmes at VU are assessed by midterm and/or final exams, which may contribute to a cumulative grade at the discretion of the instructor. Laboratory and practical work are assessed by laboratory diaries, they are compulsory and their assessment is part of the cumulative grade. Achievement of learning outcomes is also assessed through other means – individual theoretical and practical assignments, seminars, presentations, written work, participation in discussions, etc. In the second cycle of study, students also participate in group research projects, plan problem solving strategies and report on their research.

## *(2) Expert judgement/indicator analysis*

The part of the SER devoted to Indicator 1.1 is too long (about 5 pages) and should be reduced in the future to the most important facts and evidence. Annexes 1, 2 and 3 provide a detailed overview/analysis of study programmes, associated learning outcomes and assessment methods. Descriptions of the compulsory courses and associated learning outcomes were provided to the panel in the additional information to the SER (in Lithuanian). The panel believes that the overview provides a good balance of study programmes associated learning outcomes, study methods and methods of assessing student learning outcomes. The panel members agree that the programmes' learning outcomes are distributed relatively evenly among courses, depending on the course scope and nature. Achievement of the same outcome in different aspects by different courses (as shown in Appendix 2 of the SER) ensures successful achievement of the learning outcomes and overall programmes' goals. In reviewing Appendix 3 of the SER, panel members concluded that the achievement of individual study programme results is adequately supported by a variety of study methods.

However, in discussions with students and teaching staff during the site visit, panel members were not convinced that teaching staff were using modern teaching methods and demonstrating contemporary research methods. The panel therefore concluded that the traditional lectures/seminars/biology research techniques often used in teaching could be replaced by greater use of modern teaching and research techniques (e.g. DNA barcoding, collaborative learning, project-based learning). With regard to examinations, the panel notes a high overall number of examinations and a strong focus on written exams often aiming at testing knowledge. Overall, the panel suggests reducing the number of written examinations, especially in courses where multiple alternative means of examination are already in place.

### *3.1.5. Evaluation of the totality of the field and cycle study programme subjects/modules, which ensures consistent development of competences of students*

#### *(1) Factual situation*

The SER contains no separate text on this indicator. However, there are subsections entitled *Principles for establishing study credits* and *Consistency of the content of study programmes in the field*, which give a detailed insight into the sequence of courses and the distribution of ECTS credits during the course of study. For the B.Sc. Biology, a total of 6450 working hours are allocated, of which 2704 are contact hours (41.9%) and 3746 are self-study hours (58.1%). For the M.Sc. Biodiversity, a total of 3204 working hours are allocated, of which 1068 are contact hours (33.3%) and 3136 are for independent study (66.7%). The M.Sc. Neurobiology has a total of 3204 working hours, of which 864 (26.9%) are contact working hours and 2340 (73%) are self-study working hours. The structure and content of the B.Sc. and M.Sc. biology programmes at VU are designed to achieve the intended learning outcomes. The degree programmes appear to be arranged in a logical sequence. The first cycle of study (B.Sc.) focuses on basic biological/life science courses (including laboratory work and practical exercises), basic physical and chemical sciences, and academic English. Second cycle (M.Sc.) studies in Biodiversity and Neurobiology offer more specialised courses, including more specific laboratory/field practicals and internships, depending on the focus of study.

Many courses include extensive laboratory exercises that focus on developing practical skills and consolidating theoretical knowledge. The compulsory course units cover the main topics and some general skills (e.g. foreign languages), while a degree of further specialisation is offered via optional course units. VU conducts anonymous surveys to allow students to express their opinions about the compatibility between the scope of the course and the number of credits or contact/self-study hours.

*(2) Expert judgement/indicator analysis*

The panel believes that the first and second cycle degree programmes at VU provide consistent development of student competencies. From interviews with students, it appears that the curricula of the study programmes are relatively logical, so that students do not have difficulties in following and successfully mastering the courses. Students expressed satisfaction with the amount of laboratory and field work during their studies, but pointed out that field work needs to be better organised. Similarly, they commented on courses with multiple teachers, noting that teachers were not aligned in terms of course content and requirements (lecturers do not interact enough with each other, so students are lost in the system – this could be solved by introducing a coordinating lecturer). Although the curricula of the programmes are relatively logical, most courses have 5 ECTS, suggesting that these courses are equally demanding. However, students indicated that not all of these courses are equally demanding and that some that have 5 ECTS require more commitment than other courses with the same number of credits. VU Faculty members claim that this was done because such a distribution of ECTS is conducive to student mobility. Panel members concluded that ECTS credits are not distributed evenly and that the ECTS system should take into account the actual time needed to prepare for the course exam and not be based solely on eligibility for student mobility opportunities.

Finally, the learning outcomes and curricula of the reviewed programmes could still be improved and updated to adapt them to emerging biological topics (i.e. knowledge and skills encompassing current trends in biology) after gathering feedback from students, alumni/graduates and social partners.

*3.1.6. Evaluation of opportunities for students to personalise the structure of field study programmes according to their personal learning objectives and intended learning outcomes*

*(1) Factual situation*

According to the SER, students have various opportunities to personalize their studies in order to train their general and subject-specific competences in the field of study (e.g. individualized study plans, academic exchanges, foreign language modules, minor studies). Students have the possibility to choose elective subjects, depending on the specialization foreseen in the study plan (Annex 2 of the SER).

*(2) Expert judgement/indicator analysis*

The panel judges that the first and second cycle biology study programmes at VU offer students clear opportunities to shape the structure of their studies according to their personal goals. The list of available electives within the degree programs, which can be found in Appendix 2 of the SER, provide good opportunities for students to achieve their personal learning goals. Judging from the statements of students, alumni and social partners (employers) during the site visit, the electives and internship opportunities for students are well matched to student demand and labour market requirements. VU is making efforts to internationalize the programmes (as evidenced by the study programme Neurobiology being offered in English) and is initiating some international partnerships in research and teaching, which is also an alignment with student needs. Students are free to choose topics for their final thesis, depending on their own interests and specializations.

### *3.1.7. Evaluation of compliance of final theses with the field and cycle requirements*

#### *(1) Factual situation*

According to Annex 2 of the SER, the Bachelor's thesis in the B.Sc. Biology programme on the VU is worth 25 ECTS and should be completed within a total of 650 hours of independent study. The Master's thesis in the M.Sc. Biodiversity programme is worth 30 ECTS and provides for 800 hours of self-study. In the M.Sc. Neurobiology, the Master's thesis earns 30 ECTS but requires 810 hours of independent student work. Students should follow the principles of writing and defending theses prescribed in the Regulations for the Preparation, Defence and Storage of Research Papers of Students Studying at Vilnius University (approved by the VU Senate) and the Procedure for Administering Research Papers in the Vilnius University Study Information System (approved by the VU Vice-Rector for Studies). The theses topics can be proposed by: 1) teachers and researchers, i.e. prospective thesis supervisors (depending on the availability of their project and research activities), 2) social partners (depending on the topics relevant to them), or 3) students (depending on their personal interests).

#### *(2) Expert judgement/indicator analysis*

The panel judges that the bachelor's and master's theses in biology study programmes at VU meet the requirements of the field and the cycle. The SER and Annex 5 provide a detailed list of thesis titles. The list of thesis topics covers various areas of biology, biodiversity and neurobiology. A significant number of the theses defended are clearly linked to social partner/employer interests, which was confirmed by some social partners (employers) and alumni during the site visit. Students and alumni confirmed that they have various options to choose the topic of their thesis (and also the institution where they will do most of their work) and that they encounter great support from potential mentors and social partners. The final theses available in the supplemental materials of SER are evidence that students are conducting independent biological research during the thesis process that is at a satisfactory level in terms of the scope of research tasks and the quality of statistical data processing. The panel members therefore concluded that: 1) the thesis topics are well aligned with the social partners and 2) the workload, credit load and opportunities associated with theses in the biology B.Sc. and

M.Sc. programmes of VU are optimal to demonstrate the knowledge acquired during the degree and the students' ability to analyse and apply practical skills. Given the high level of involvement of social partners in the provision of theses, the panel members concluded that it would be beneficial to further develop thesis supervision and assessment programmes to ensure the quality of supervision provided to students.

### ***Strengths and weaknesses of this evaluation area:***

#### ***(1) Strengths:***

1. The programmes provide graduates with a broad theoretical knowledge and solid practical skills.
2. Efforts to internationalise programmes, as evidenced by the Neurobiology programme offered in English, and the initiation of some international partnerships in research and teaching.
3. Strong links between academic staff and employers.
4. The study programmes at VU provide clear opportunities for students to structure their studies according to their personal goals.

#### ***(2) Weaknesses:***

1. The study programmes are overloaded with broad factual knowledge and a classical theoretical approach to teaching, research and learning, while lacking modern/emergent teaching, learning and research methods.
2. ECTS credits allocated to each course do not take into account the actual time required to achieve the outcomes and prepare for the course examination.
3. Insufficient quality of organisation and/or supervision of teaching in certain courses (especially those taught by more than one lecturer).
4. Excessive use of written examinations.

## **3.2. LINKS BETWEEN SCIENCE (ART) AND STUDIES**

***Links between science (art) and study activities shall be assessed in accordance with the following indicators:***

***3.2.1. Evaluation of the sufficiency of the science (applied science, art) activities implemented by the HEI for the field of research (art) related to the field of study***

#### ***(1) Factual situation***

The research activities related to the field of study has been evaluated by the Research Council of Lithuania and the evaluation shows that there has been an increase in all key criteria over the past years. According to the results of the comparative R&D assessment, VU is the second best in Lithuania. The research results of the staff have changed to more international peer-reviewed journal papers that are indexed in the Clarivate Analytics Web of



Science DB. This means that the number of papers has gone down, but the quality has increased. This shows evidence for internationally recognised research being carried out. The staff is involved in several national and international projects as well as in projects in collaboration with social partners. There is a long-time collaboration with several social partners that give possibilities for collaboration in research projects. Several of the projects have competitive external financing from sources such as the EU and the Lithuanian research council. The university has strategic plans including priorities and attention to specific research areas. The VU long-term R&D programmes related to the biology field of studies ensures the achievement of scientific activities.

### *(2) Expert judgement/indicator analysis*

The science in the field is very good and improving. The scientific staff has attracted external funding from competitive external sources and are part of both national and international research collaborations. The strategic R&D plans will make it possible for the university to increase internationally recognised research even further. As the whole CAU is evaluated at the same time, it is not possible to evaluate if there is difference in the sufficiency of science in the different fields of the evaluated study field. The university should try to find means of evaluating the different academic subunits, so that it would be possible to have targeted measures to different subunits if necessary. Overall, the research activities are very good and improving.

### *3.2.2. Evaluation of the link between the content of studies and the latest developments in science, art and technology*

#### *(1) Factual situation*

Lecturers connected to the study programmes are conducting research, and they are integrating the outcomes into the programmes they teach in different ways. The latest scientific and technological achievements are presented during lectures and workshops, information is included in lectures and discussed during seminars. Research is also used in the preparation of final theses and several public events are held such as public lectures, seminars and conferences. In addition, the students have the possibility to participate in research and some projects and evidence are given for several such projects.

Evidence is also given for courses that have included the latest research.

#### *(2) Expert judgement/indicator analysis*

The panel judges that the integration of the students in research is good. From the SER and the site-visit it is evident that the students have the possibility to participate in research during the preparation of the bachelor and master degree thesis. They are in addition able to participate in dissemination of research both in popular science events as well as preparation of scientific articles. Evidence is given to support that the teaching includes the latest research. Examples are given for

specific courses that have been changed such as courses in Neurobiology, Science of Laboratory Animals and Theory of Biological Evolution.

### *3.2.3. Evaluation of conditions for students to get involved in scientific (applied science, art) activities consistent with their study cycle*

#### *(1) Factual situation*

Students are able to participate in research when preparing their final theses, and they also have the possibility to participate in research projects during their course of study and they are able to participate in this from their first year of study. The students learn about the research performed by the social partners and are encouraged to write applications to the Lithuanian Research Council for support of summer practice and research conducted during the semester. The students are involved in research conducted by their course instructors and there has been an increase in the number of students involved in such work, and 50% of the students are now involved compared to previously 40 % (SER, Table 6 p 33). The students are encouraged to take part in scientific conferences as well as popular scientific events, especially in the field of Neurobiology.

#### *(2) Expert judgement/indicator analysis*

There is a good opportunity for students to get involved with scientific activities related to their study programme. The students have the possibility to be involved in research, as well as in conferences and public events. Several students are involved in the implementation of research projects and a small number of students prepare scientific papers. From the SER, it seems that some of the fields are more advanced in this, and the university should ensure that this will be the possibility for all the students.

Laboratories are open for student research and students are encouraged to apply for funding for their projects. The University is encouraged to build upon this and look to increase the number of students publishing work as well as students being involved in such work.

### ***Strengths and weaknesses of this evaluation area:***

#### ***(1) Strengths:***

1. The quality of the research output has increased and more research is published internationally.
2. Students have the possibility to be involved in research activities.

#### ***(2) Weaknesses:***

1. The evaluation of the scientific output should be performed in a manner that ensures that the university has knowledge of all the areas of the field.

### 3.3. STUDENT ADMISSION AND SUPPORT

*Student admission and support shall be evaluated according to the following indicators:*

#### *3.3.1. Evaluation of the suitability and publicity of student selection and admission criteria and process*

##### *(1) Factual situation*

The admission for first cycle studies is carried out by the Lithuanian Association of Higher Education Institutions for Organizing General Admission (LAMA BPO) and follows standardized procedures for the calculation of competitive scores. The score includes grades in biology, mathematics or chemistry, Lithuanian language and additional subjects. Extra scores can be added based on military or voluntary service, vocational training with honours, national and international contests, excellent thesis work, or to Lithuanians who live abroad and representatives of the Lithuanian diaspora. Additional scores are only added if the initial score is 5.4 or higher. A minimum score needs to be reached for admission. These rules are publically available on the universities and the associations website. VU advertises its study opportunities at study fairs and exhibitions, selected high schools and specific recruitment events.

Admissions to second cycle studies are governed by the VU Admission Procedure to Second-Cycle Study Programmes. Bachelor's degree in related studies allow for entrance into the Master's programs. For Biodiversity these include life sciences, agricultural and veterinary sciences, but also neighbouring sciences such as geography, rehabilitation, forestry, and engineering. For Neuroscience accepted degrees include life sciences, health and veterinary sciences, but also distant fields such as agriculture, education, all natural sciences including mathematics and computer science, and social sciences such as sociology, social work, anthropology, psychology, and philosophy. Some students who lack basic biology qualifications need to take up to one year of additional courses. For both programs scores are calculated based on the weighted grades of the courses taken, the thesis grade, and additional scores. Additional scores are given for various research presentations and publications.

Overall the number of applicants and average grades for admission is stable, with few exceptions, such as a decrease in first priority applicants in 2020, a steady increase of state-funded places in the Biology B.Sc. between 2017 and 2020, and a decrease in the average score for admitted students in the Biology B.Sc. programme in 2020. VU notes that all scores of admitted students are still above the minimum score required and that they follow the trend of high-school graduate performance.

##### *(2) Expert judgement/indicator analysis*

The admission criteria are public, straightforward, and suitable for the programs in question. However, the panel deems the scope of degrees that allow for the study of the masters

programmes surprisingly wide. While most programmes seem clearly related, it is not obvious how a degree in rehabilitation could provide sufficient prerequisites for advanced studies in biodiversity or how a degree in philosophy could provide the necessary qualifications for a master in neuroscience. In various meetings it was indeed mentioned that there are clear differences in the performance of master students based on their background. While it is admirable that VU gives career changers a chance, the overall level of the programmes could be higher if the student prerequisites were clearer and higher. In general, VU should rather define a set of required knowledge and qualifications needed and assess eligible degrees based on a more substantial overlap with the defined prerequisites. Few missing skills can still then be made up with additional courses, but only to a certain degree. For the bachelor programme it should be monitored how the increase from 40 to 55 students impacts the quality of studies and support.

### *3.3.2. Evaluation of the procedure of recognition of foreign qualifications, partial studies and prior non-formal and informal learning and its application*

#### *(1) Factual situation*

VU has defined procedures, descriptors and methodology for the recognition of foreign qualifications adhering to the Lisbon Recognition Convention. Qualifications are considered to be equivalent if there are no essential differences. Decisions are made on a case to case basis based on the available information and previous practice to ensure consistency in decision making. Similarly, informal and non/formal qualifications can be recognized either based on previous agreements or without in accordance with the procedures up to 50% of the total programme credits. Partial previous studies can be recognized up to 75%. Final exams, theses or written papers cannot be recognized.

#### *(2) Expert judgement/indicator analysis*

Adequate procedures for the recognition of foreign, partial and non-formal/informal qualifications are in place. These procedures are in line with the Lisbon convention, and in the interviews there were no indications of problems arising from their application.

### *3.3.3. Evaluation of conditions for ensuring academic mobility of students*

#### *(1) Factual situation*

Studies abroad are administered by the International Relations Department and Erasmus placement is organized by the Student Services and Career Department. Students can choose to spend a semester or a whole year abroad or to perform their professional practice elsewhere. VU is involved in exchange programs such as Erasmus+, ISEP and Nordplus. VU is further a member of international networks such as the ARQUS European university alliance and the COIMBRA network. In addition there are many bilateral agreements inside and

outside of Europe in place (33 for B.Sc. and 34 for M.Sc.). To study abroad students in first cycle studies need to have completed at least one course at VU, students in second cycle studies need to have completed one semester of coursework. Information about mobility opportunities is available on the university's website and the unit's website, and is further distributed through newsletters, meetings and social networks. To further increase internationalization the Neuroscience M.Sc. programme is taught completely in English since 2018 and is part of the Network of European Neuroscience Schools. Also, some lecturers have international experience, guest lecturers are invited for some courses and the content of courses takes international research into account. The SER states that the number of students going abroad increases (as evident by table 11). It further states that the numbers of 2019-2020 were already impacted by the outbreak of the global pandemic in 2020. Other barriers for students are involvement in the labour market and family obligations.

## *(2) Expert judgement/indicator analysis*

VU provides students with extensive mobility opportunities. The number of students who use these opportunities as well as the number of incoming students increased in recent years, but is still low overall. For instance only 3 first cycle students went abroad for studies and 5 for practice in 2019-2020 (2 and 2 respectively in 2018-2019), despite a cohort size of about 40 students per year and 4 cohorts of active students (~160 eligible students). It is also surprising that the switch to English language has not increased the number of incoming students in the Neuroscience programme, but such a process may simply need more time. The panel recommends increasing the efforts to motivate students to use their opportunities for study exchange. Students specifically don't seem to grasp the value of such exchanges, and the support they could get. Better communication of the benefits and encouragement from responsible lecturers may be helpful.

### *3.3.4. Assessment of the suitability, adequacy and effectiveness of the academic, financial, social, psychological and personal support provided to the students of the field*

#### *(1) Factual situation*

VU provides students with academic information and support, career services, information technology services, library and information services, financial support, cultural and leisure services and many more. Academic support is available at the central level (Student Services and Career Development) and within each unit (academic councillors, head of the study unit and study administrators). These services are broad in topic and are offered to all students at VU (including exchange students). Central support works by a "one-stop shop" principle.

In addition VU has a mentorship program (two teachers in biology participate and counselled 36 students 2018-2020), career guidance services, professional development training (e.g. stress management, effective learning, and job application related topics), a Health and Sports Centre, a Counselling and Training Centre (for physiological needs), a Law Clinic (for legal support), a Culture Centre, and active student representation.

Financial support is given through various scholarships for academic achievement and social needs. Many biology students received such support. Furthermore, there are state-funded student loans and financial support for students with disabilities. Students can also apply for a reduction in tuition fees. Information about these kinds of support are available on VU's website and spread during the introductory lectures and the integration week. In addition students can live in highly subsidised dormitories.

*(2) Expert judgement/indicator analysis*

VU provides students with comprehensive and adequate academic, financial, social, psychological and personal support, as is expected from a large university with a long tradition. During the site visit the evaluation group came to the conclusion that students are happy with the support given. The "one-stop-shop" principle is appreciated by students and could serve as an inspiration for other universities – the idea is that students have one central point to turn to with problems of various nature and are helped there or redirected rather than having to deal with many different support actors.

*3.3.5 Evaluation of the sufficiency of study information and student counselling*

*(1) Factual situation*

New students start their studies with an integration week that features special lectures and meetings. There students are also introduced to the aims, intended outcomes, methods, and opportunities for individualization of their studies, as well as forms of support and leisure. Further information is provided centrally via the Student Services and Career Centre and specifically via the Study Unit, councillors and student representatives. Additional information, e.g. about schedules, examinations, evaluations, mobility, and support, is provided during meetings with the vice dean for studies, the head of the program, and academic consultants. Lectures also provide dedicated office hours for consultation. Finally, information is also provided digitally in the VMA or MS Teams environments, the central system VUSIS.

*(2) Expert judgement/indicator analysis*

VU provides students with comprehensive relevant information. During the site visit the evaluation group came to the conclusion that students are happy with the information provided. The panel judges the information provided and the counselling students receive to be good.

### ***Strengths and weaknesses of this evaluation area:***

#### ***(1) Strengths:***

1. VU offers comprehensive student support in many areas. The “one-stop-shop” principle is appreciated by students and could serve as an inspiration for other universities.
2. VU offers extensive opportunities for student mobility.

#### ***(2) Weaknesses:***

1. The student population in second-cycle programs is highly heterogeneous in their initial knowledge and competencies due to a surprisingly wide spectrum of eligible programs for entry into the programs.
2. Despite existing efforts student mobility remains low, partially due to lack of communication of benefits and lack of encouragement.

### **3.4. TEACHING AND LEARNING, STUDENT PERFORMANCE AND GRADUATE EMPLOYMENT**

***Studying, student performance and graduate employment shall be evaluated according to the following indicators:***

*3.4.1. Evaluation of the teaching and learning process that enables to take into account the needs of the students and enable them to achieve the intended learning outcomes*

#### ***(1) Factual situation***

During the external evaluation of the undergraduate Biology programme in 2017, and following the recommendations of the experts in 2016, the methods for assessing student performance were expanded and supplemented and adapted for achieving different outcomes. The three courses Origin and diversity of organisms (30 ECTS) are taught by many lecturers and the teaching methods vary widely and include mid-term tests, defence of laboratory work, surveys and examinations, which can lead to inconsistencies in assessment procedures.

The interdisciplinary MSc Neurobiology was accredited in 2013 and the MSc Biodiversity in 2015. Teaching and learning methods include modern approaches such as consultations, research work, course projects, seminars and self-studies (selected reading from current literature available in MEDLINE database). Different teaching methods within a course delivered by many lecturers can lead to inconsistency in assessment procedures. Individual study plans can be developed at the request of students, but the procedures are complicated and over-regulated, so they are very limited, especially in the MSc Biodiversity program. Currently only one individual plan has been developed.

The assessment strategies and methods used in the courses in the programmes correlate with the study methods in the programmes that enable students to achieve the planned study outcomes and motivate them to engage in regular independent learning and critical evaluation of their knowledge and skills. Assessment of student progress is very complex and usually takes the form of partial exams, which can lead to less efficient general knowledge. At the end of most courses students sit an examination, but in most cases a cumulative mark is used, made up of the sum of the marks for the various assignments. In the second cycle of study, students acquire research skills by participating in group research projects in which students plan problem-solving strategies and report written and oral findings. Each course description includes information and students know what portions of their work will be included in the final grade. During each semester, VU conducts anonymous surveys to allow students to express their opinions about the compatibility between the scope of the course and the number of credits or contact/self-study hours.

## *(2) Expert judgement/indicator analysis*

The BSc programme Biology is based on classical biology and focuses mainly on the biology of organisms and ecology. The teaching and learning methods are diverse and due to the fact that many teachers lecture in one course, this can be confusing, as was also expressed in discussions with students during site visits. The assessment described in Annex 3, which consists mainly of partial interim tests, defence of laboratory work and examinations, appears to be well defined.

The MSc Biodiversity programme covers only a few topics and methods in Molecular biology. The Biodiversity studies and Conservation of Biodiversity courses are very general, may lacking molecular approaches and are based on multi-lecturing, which can lead to problems in assessment and achievement of the intended learning outcomes. The aim of the Professional practice course is to develop skills and reflect on activities for better preparation for the labour market, but it is questionable whether 5 ECTS are sufficient to achieve the desired competences.

The MSc Neurobiology programme is based on two compulsory courses Bioelectric processes and Mechanisms of Sensation and Perception (10 ECTS) in combination with few compulsory courses and many optional specialized courses (5 ECTS), which provide students with excellent opportunities to choose special study plans. The compulsory course Research Work Project during each semester (20 ECTS) is also an excellent way to prepare graduates for independent professional work. The course descriptions are available in English, so the panel can confirm that the content of the courses is up-to-date and includes modern methods from the field. The recommended study literature is somewhat out of date and should be updated. Assessment criteria are clearly defined and it is possible to have partial exams (colloquia) culminating in a project report or assessment consisting of seminars/laboratory work and a final exam.

There are significant differences between the two MSc programmes. While the Neurobiology programme is up to date and offers opportunities for international study and good



preparation for the labour market, this is not entirely the case for the Biodiversity programme. It is stated in the SER that “Competences and learning outcomes are oriented not only to a certain degree of knowledge, but also to the development of general competences for further studies, self-study and modern labour market and successful independent professional activity”. The panel judges that the competences for further study and the modern labour market leading to successful professional activity are good but should be improved in the MSc Biodiversity programme. There is a need to provide more opportunities for the development of individual study plans for MSc students in Biodiversity. From 2017 to 2020, only 2 individual study plans were created for students in the Biodiversity programme.

### *3.4.2. Evaluation of conditions ensuring access to study for socially vulnerable groups and students with special needs*

#### *(1) Factual situation*

The Coordinator of disability concerns identifies the special needs of the student and makes recommendations to CAU for accommodations. In accordance with the recommendations, the CAU officer prepares an individualised study plan (the plan specifies methods of individualization according to area of the study, study environment, lectures or other contact hours, performance assessment, etc.) and ensures its implementation. The approved plan is forwarded to the staff directly involved in its implementation. There are flexible forms of performance evaluation for students with special needs that are adapted to the abilities of these individuals. VU has established an annual scholarship for the 100 most talented VU students from socially disadvantaged families to help reduce social exclusion.

#### *(2) Expert judgement/indicator analysis*

The panel judges that the study conditions for vulnerable groups and students with special needs are very good and improve every year due to the activities of the Community Development Division of Vilnius University with an appointed coordinator for the issues of people with disabilities. The accessibility of the physical environment of the University for disabled students is improved every year and students from socially vulnerable families are financially supported.

### *3.4.3. Evaluation of the systematic nature of the monitoring of student study progress and feedback to students to promote self-assessment and subsequent planning of study progress*

#### *(1) Factual situation*

Student progress is evaluated by the lecturer of the course. The lecturer announces the date the evaluations will be posted and information about the shortcomings prior to the start of the evaluation. When a cumulative grade is applied to a course, the lecturer provides feedback on assignments completed, evaluates the student’s progress, and indicates areas for

improvement. Progress at the level for a given year is monitored by the Study Administration Department. The Student Services and Career Department monitors the number of student dropouts and implements a dropout prevention action plan. This plan includes monitoring of student performance. After the end of the examination session, information on the final student results in the semester is evaluated.

At the programme level, monitoring of student progress is conducted by the SPCs. The SPC conducts an annual evaluation of student progress during professional practice by soliciting feedback from the institutions where students have completed their practice. This information is shared with students through student representatives on SPCs, group seniors, and directly with students during meetings.

Feedback is provided to students not only on the progress of their studies, but also on issues related to the implementation of their studies or on student opinions from surveys about changes needed in a course or study programme.

### *(2) Expert judgement/indicator analysis*

Student achievement data are reviewed annually at the subject, study programme and faculty levels. Based on data from SER and analysis of feedback questionnaires on subjects (modules) and their teaching, the panel judges that the procedures for student feedback are good. According to the discussions with students, the surveys do not lead to quick and effective changes in the study programme, but direct communication with the teachers brings substantial feedback on individual student performance. Student participation in the surveys is very low. During the COVID-19 pandemic, online communication was offered regularly, as confirmed by students during the virtual site visit.

### *3.4.4. Evaluation of employability of graduates and graduate career tracking in the study field.*

#### *(1) Factual situation*

Career tracking of graduates is implemented through the Career Tracking Information System (CTIS). Objective indicators on the careers of graduates are obtained from state information systems and government and ministry registers five years after graduation and are updated twice a year. Subjective data, based on surveys, shows graduates' opinions on various career-related issues. Subjective data are collected at one year (to assess student employment), three years (established professional activity), and five years after graduation (to determine graduates' career and job satisfaction). From the SER, approximately half of 2018 BSc Biology graduates had employment in the next two years and only 10-20% were not working or continuing their studies. Of the small number of MSc Neurobiology graduates in 2018, a half were employed and between 16 and 33 % were not working or studying. There is no data on the employment of MSc Biodiversity graduates, but about a third of the few graduates in 2018 continued their studies at PhD level. First cycle biology graduates may work in research institutes, the environmental protection system, commercial enterprises and non-

governmental organizations, or as biology teachers after completing a specialized minor in pedagogics/education. Graduates of the MSc Neurobiology and Biodiversity programs can work as researchers, lecturers, experts and consultants in research and education departments of various academic institutions.

*(2) Expert judgement/indicator analysis*

Employment of BSc graduates is rather low, usually one third of graduates continue their studies at MSc level. The feedback from the Nature Research Centre social partners on the content and organization of the programme was very good when discussed during the virtual visit. There are many employment opportunities, but only half of the graduates choose to work in this field.

Both MSc programmes Biodiversity and Neurobiology meet the needs of employers and are well matched to the labour market. The panel points out that due to the low number of graduates there is a need to attract more students to master's programmes and to establish better cooperation with potential employers. Already in the last evaluation period it was pointed out that there is a need to establish a database with information on the professional achievements of former students and to use a formal statement on the applicability of their competences to the labour market when updating the study programmes.

*3.4.5. Evaluation of the implementation of policies to ensure academic integrity, tolerance and non-discrimination*

*(1) Factual situation*

Students and staff must abide by the Vilnius University Academic Ethics Code. It defines general ethical standards for study, teaching and scientific research. The Code defines cases of cheating, plagiarism, forgery, bribery and aiding and abetting dishonest academic activity. VU has an electronic plagiarism checking system (ESAS), which can check the overlap of a paper with other papers stored in the database.

*(2) Expert judgement/indicator analysis*

The principles of academic integrity, tolerance and non-discrimination, and ethical integrity are well implemented. Students are well aware of their rights and responsibilities. No cases of violation of the policies have been registered with the LSC's Academic Ethic Commission during the last three years.

*3.4.6. Evaluation of the effectiveness of the application of procedures for the submission and examination of appeals and complaints regarding the study process within the field studies*

*(1) Factual situation*

The procedure for appeals is established by the Dispute Resolution Committee of CAU in the rules for dispute settlement. During the period analysed, one complaint was submitted to the Dispute Resolution Committee in 2020 for violations in the assessment of summer practice and violation of procedures.

*(2) Expert judgement/indicator analysis*

The panel judges that students are well aware of the procedures of appeal related to the study process. The Dispute Resolution Committee is formed to review and report on student appeals.

***Strengths and weaknesses of this evaluation area:***

***(1) Strengths:***

1. The broad and very classical BSc programme in Biology includes various basic courses and electives with different teaching and learning methods. Student numbers are somewhat low but have been constant over the last four years and students have expressed satisfaction with the organization of the programme.
2. Courses in MSc programmes Biodiversity and Neurobiology are well organized and apply student-centred and challenging learning. In general, students develop professional skills, which they use for their thesis and later during their doctoral studies/employment.
3. Individual study plans and minor programs (pedagogy) are an excellent way to meet student needs, but very few IPs have been implemented in the MSc Biodiversity, which could also be due to the strict regulatory procedures.
4. Socially vulnerable students and students with special needs have good study conditions, including access to buildings, teaching materials and financial support. Individual meetings with the coordinator in charge of working with disabled people are well organized.

***(2) Weaknesses:***

1. Multiple instructors teaching a course at BSc level can be motivating for students, but coordination of activities, especially assessment, can be compromised. Very complex assessment procedures with a final grade made up of different assignments reduces the quality of the final grade in courses with multiple teachers.
2. Student feedback is quite good and respected, but not processed very effectively. Many different surveys to implement changes in programmes updates and career planning are being processed by administration and committees, which delays the process of programmes' improvement.
3. The processing of student opinions on courses and changes in the study programmes based on numerous surveys organized by the Study Quality and Development Department of VU should be improved by establishing a database of graduates' professional achievements.

### 3.5. TEACHING STAFF

***Study field teaching staff shall be evaluated in accordance with the following indicators:***

*3.5.1. Evaluation of the adequacy of the number, qualification and competence (scientific, didactic, professional) of teaching staff within a field study programme(s) at the HEI in order to achieve the learning outcomes*

*(1) Factual situation*

Teaching staff are employed in accordance with the University's 'Procedure for the Selection and Evaluation of Vilnius University Teaching and Research (Art) Staff'. For most staff there is effectively a five year probation period: staff are appointed for five years via a public competition and if they win a second competition at the end of that first term, the employment contract becomes open-ended. Alternatively staff may be employed on rolling one-year contracts. All staff are evaluated on a five-yearly cycle to determine whether or not their qualifications and other credentials still comply with the requirements for the post. The indicators taken into account include the number of research articles published, participation in conferences, leadership roles in research, lecturing and preparation of methodological material, participation in doctoral supervision, supervision of student research, expert roles, organizational and other research activities, and student feedback garnered through course satisfaction surveys.

Of 64 teachers, 14 are full professors, 16 are associate professors and only 14 do not possess a PhD degree. Most are very experienced, both in practical experience and in teaching: only 6 have less than five years' practical experience and 18 less than five years' teaching experience. Ten visiting associate professors and one visiting assistant contribute to the programmes, as do doctoral students who teach practical courses, laboratory work, and supervise final theses and practice. Doctoral students who successfully defend their dissertations are invited to continue their academic work in the role of assistants.

The University supplied a list of the three most significant research papers per person in the last 5 years. This revealed that although six staff had no outputs in this period, 46 had at least three outputs. Most outputs are in high-ranking international peer-reviewed journals, but a small number are in local journals and some are in Lithuanian. From 2017 to 2019 staff contributed to 277 peer-reviewed publications, were granted 27 patents and were consistently awarded >€0.24M per year in research funding. Staff are part of established and productive international networks of researchers.

The staff:student ratio has remained almost constant over the last three years at approximately 1:3.3. The staffing base is stable: the most significant change is a small net loss of associate professors and a small net gain in assistants, but the numbers are small.

Nearly 90 per cent of staff are competent in English to at least B2 level.

## *(2) Expert judgement/indicator analysis*

National and University requirements for staff are complied with. In terms of numbers of staff, there is adequate to support the programmes; indeed there is a very favourable staff:student ratio that may allow for close supervision. Most staff are publishing frequently in high-quality journals, collectively giving a firm base across a broad range of subjects of relevance to the programmes to draw upon in their teaching duties. Expertise in both neurobiology and diversity is more than sufficient to support these second-cycle programmes.

The visiting associate professors show strong research credentials and complement the permanent staff well. Doctoral students receive limited exposure to teaching duties, which promotes their career prospects and is used purposefully to ensure a supply of new-blood teachers. The stable staffing base means that fruitful and sustained internal collaborations can develop and the environment for junior staff is favourable. English language competency is sufficient to support delivery in English. In general, students reported satisfaction with the quality of their teachers.

### *3.5.2. Evaluation of conditions for ensuring teaching staffs' academic mobility (not applicable to studies carried out by HEIs operating under the conditions of exile)*

#### *(1) Factual situation*

The University had 1,300 Erasmus+ agreements with 555 institutions from participating countries in 2018/2019, and 201 bilateral University agreements, 150 of which were with non-EU nations. Funds for outgoing staff mobility come, in general, from Erasmus+ funding to the University. Details of how to apply, including deadlines, are given on the University's website. The University is a founder member (2019) of the European Commission-funded Arqus network, which links seven European universities with common values and strategic priorities. The network can provide funding for mobility, though this activity has stalled somewhat owing to the pandemic. Sabbatical leave is also possible but this has not been exploited in the last five years. Funds for incoming staff mobility come typically from the Ministry of Education, Science and Sport or the Education Exchange Support Fund, and internally from the Life Sciences Centre.

In 2017-18, 2018-19 and 2019-20 there were 22, 20 and 24 outgoing visits, respectively, though these include visits for all purposes. Annually the number of teaching-related visits is of the order of five, and since 2017 only seven staff have been involved in outgoing teaching visits, though some have been outside Europe. Incoming visits since 2017 have been confined to the delivery of single lectures, rather than a series integrated into any of the programmes. There have been 8 such events.

#### *(2) Expert judgement/indicator analysis*

The University's application process for staff mobility under the Erasmus+ scheme is clear. Programme staff are well aware of the benefits of international exchanges, and there are multiple underexploited opportunities. There is clear scope for expansion in both incoming and outgoing staff mobility. Here is a missed opportunity for the exchange of ideas and topics in relation to student learning.

### *3.5.3. Evaluation of the conditions to improve the competences of the teaching staff*

#### *(1) Factual situation*

Multiple staff are multiply active in research visits, research conference presentations and training programmes related to research. The University, in the form of the Centre for Educational Competences, provides teaching competence training for staff across a broad range of topics including "Active learning methods", "Student group work", "Supervision of research papers", "Communication skills", "The integration of ICT into the teaching process", and "Application of mixed learning in university studies". Some training is delivered by overseas external experts. The SER reported that over the past three years 15 lecturers from the field of biology studies participated in the training, though when the details were provided to the panel only 13 lecturers were identified. No training was undertaken in 2017; four lecturers attended events in 2018; a different four in 2019; and eight in 2020. In 2020 each of the 8 undertook training in remote delivery. Recipients of the training have frequently emphasised its benefits and importance, particularly in reflecting on their teaching experience and sharing reflections with colleagues from diffident disciplines. Doctoral students who teach do not receive any formal training for that role, though may receive some informal mentoring by more experienced teachers; the panel heard that the Life Sciences Centre was considering the possibility of mandatory training. The self-evaluation reported that lecturers choose teaching and assessment methods based in part on Bloom's taxonomy and the panel explored the pedagogic understanding of teachers and managerial staff by asking what this meant. The term 'Bloom's taxonomy' was not recognised and the panel heard that it had been inserted into the self-evaluation by administrative staff.

#### *(2) Expert judgement/indicator analysis*

There is considerable evidence of professional updating in relation to research. However, given the low number of participants exploiting clearly valuable training opportunities, professional updating in learning and teaching is not a priority and steps should be taken to instil a culture of continuous improvement in pedagogy, starting with a much enhanced participation in training programmes. Of particular concern is that as the University pivoted to online learning in 2020, only eight lecturers availed themselves of training in effective online delivery. Similarly doctoral students are teaching without undergoing any training, and this represents a quality risk. The panel detected a lack of understanding of the basic aspects of how students learn, and perhaps more worryingly, that the self-evaluation did not reflect lecturers' understanding and behaviour.

### ***Strengths and weaknesses of this evaluation area:***

#### ***(1) Strengths:***

1. Good staff research credentials.

#### ***(2) Weaknesses:***

1. Low occurrence of incoming and outgoing staff mobility, and low numbers of individual staff involved.
2. Lack of comprehensive professional updating of teaching staff in relation to learning and teaching.

## **3.6. LEARNING FACILITIES AND RESOURCES**

***Study field learning facilities and resources should be evaluated according to the following criteria:***

*3.6.1. Evaluation of the suitability and adequacy of the physical, informational and financial resources of the field studies to ensure an effective learning process*

#### ***(1) Factual situation***

The SER describes the infrastructure of the study field. The programmes in the field of biology are implemented in the Life Science Center building, opened in 2016. The laboratories were equipped with newly purchased equipment in connection with moving into the new building. This building contains classrooms and seminar rooms equipped for lectures and media, laboratories, recreational- and work-rooms for students. There are well equipped educational as well as research laboratories. The building is adapted for students with special needs. The students may use the VU library that is in two buildings. The library has computerised work-stations as well as space for students to work privately. The students have access to all the relevant full-text research databases and the library resources are regularly updated. The university in addition has several museums, such as the Museum of Zoology and the Museum of Anatomy and Pathology.

#### ***(2) Expert judgement/indicator analysis***

The panel had the opportunity to review a video tour of the laboratory facilities. The laboratories are new and very well equipped for biology teaching and research. The library is the «gold-standard» for a university library with access to all the relevant databases with literature relevant for the study field and there has been an increase in the purchase of books. The computers at the university are equipped with relevant software and all there are computerised work-stations available for the students. The use of all the available resources could be improved.



### *3.6.2. Evaluation of the planning and upgrading of resources needed to carry out the field studies*

#### *(1) Factual situation*

The need for resources required for conducting studies are discussed in the departments and research groups and applications are sent to the administration that will take a decision based on the funding. In the period analysed in the SER, there has been no significant update of the equipment, due to the fact that the laboratories were updated in connection with the move into the LSE building. The need for resources for conducting studies is discussed in the departments and research groups, and applications are submitted to the administration that depending on available funds will acquire the equipment.

#### *(2) Expert judgement/indicator analysis*

The panel judges that the physical, informational and financial resources of the field studies to ensure an effective learning process are excellent. The university has a new building that is equipped with the latest laboratory equipment and the library offers access to all the major databases in full text. In addition the number of books in the library has increased. The university has in place a procedure for planning and updating the equipment. It would be an advantage for the university to have a strategy to ensure the high level of resources also in the future.

### ***Strengths and weaknesses of this evaluation area:***

#### ***(1) Strengths:***

1. Teaching and research laboratories with high standard equipment.
2. State of the art library facilities.

#### ***(2) Weaknesses:***

1. No long term strategy for renewal and updating of equipment.

## **3.7. STUDY QUALITY MANAGEMENT AND PUBLIC INFORMATION**

***Study quality management and publicity shall be evaluated according to the following indicators:***

### ***3.7.1. Evaluation of the effectiveness of the internal quality assurance system of the studies***

#### ***(1) Factual situation***

VU is committed to developing a culture of quality. Internal quality assessment includes programme approval, monitoring and evaluation; study process, monitoring, and analysis; student performance evaluation; faculty professional development, and dissemination of best practices and overarching goals such as student-centered learning.

Study programme committees are responsible for quality assurance and implementing improvements to study programs in accordance with the provisions of VU. They consist of faculty, social partners, and student representatives. Their chair and composition are approved by the LSC council upon the recommendation of the head of LSC. The committee reports to the council at least once a year and provides information on admissions, admission scores, internationalisation, survey results, student workload, resource needs, and teaching staff pedagogical competencies. The committee ensures coherence between the aims of the program, the competencies trained and their assessment. It analyses the feedback, discusses how to improve the program, and participates in the drafting and approval of relevant documents. Decisions are made by majority vote. At the unit level, the deputy director of studies participates in the improvement, implementation and monitoring of the programs, with the support of the study unit. They chair the college of studies, which is composed of SCP chairs and student representatives. This college makes decisions that affect multiple degree programs and disseminates examples of good practices. Substantial changes to degree programs require discussion and approval by the council or even the university's senate. The programme update process is supervised by the central study quality and development department with administrative support from the LSC study department.

### *(2) Expert judgement/indicator analysis*

VU has well defined processes and responsibilities for decision making and quality assurance. The commitment to quality culture and quality development (and not just quality assurance) is admirable. However, the panel did not witness such an attitude among local representatives, e.g., students did not know what quality culture means or how it is brought to life at VU. In general, many parts of the SER seemed to have been created at a central level and its contents were not known to local stakeholders, e.g. teachers did not know Bloom's taxonomy.

### *3.7.2. Evaluation of the effectiveness of the involvement of stakeholders (students and other stakeholders) in internal quality assurance*

#### *(1) Factual situation*

Stakeholders are represented in decision-making bodies and share their opinions. Some companies strive to become social partners of VU, and there are various forms of cooperation, such as external lecturers, internships, supervision of student research projects and theses, counseling, and career days. Additional surveys are organized, such as a one-time multi-stage study in which quantitative surveys were supplemented with interviews to assess the competencies acquired and demonstrated by VU graduates and the competencies required in

the modern labor market, resulting in the creation of a list of key competencies. Alumni are invited to attend LSC meetings and discussions, participate in formal surveys, and can become members of the alumni society. At VU, students are represented by the VU student council 'VUSA' and students participate in decision making at all levels. Students also participate in surveys and discussions, such as roundtables at the end of each semester.

*(2) Expert judgement/indicator analysis*

VU involves stakeholders in various ways and uses their feedback for improvements. During the site visit, panel members met with social partners, alumni, and students to see that they are all clearly involved at all levels in decision making, public-private partnerships, formal surveys, alumni associations, and other activities that affect the transparency of quality assurance at VU. However, as noted in criterion 3.7.1, panel members were not convinced during interviews that social partners and students were aware of the defined quality guidelines (i.e., the importance and influence of their involvement in quality assurance processes conducted at VU).

*3.7.3. Evaluation of the collection, use and publication of information on studies, their evaluation and improvement processes and outcomes*

*(1) Factual situation*

The VU Study Information System VUSIS, serves as a platform for managing degree programs. It contains students' personal data, course evaluations, elective course registrations, final theses topics, student and study statistics, and relevant student assignments. It also includes the VU online survey system. The SER states that detailed survey results of general unit and course surveys would be posted in the feedback section of the intranet. Course surveys can only be viewed by faculty themselves, the chair of the SCP, the LSC director and deputy director for studies, and faculty administrators. Additional studies of the study process and environment are conducted directly by the student council. The SER provides one example where, based on student comments and the results of the external evaluation, the process for student decision-making on electives was changed.

*(2) Expert judgement/indicator analysis*

The SER does not address the collection and use of information about the study very much. While it is apparent that some data are used for monitoring, evaluation, and improvement, details remain unclear. It is also not clear what survey results are posted on the intranet, in what detail, and who can access them.

*3.7.4. Evaluation of the opinion of the field students (collected in the ways and by the means chosen by the SKVC or the HEI) about the quality of the studies at the HEI*

### *(1) Factual situation*

Students actively participate in the surveys (~participation). There, about 60% of the students in the Biodiversity programme and about 50% of the students in the Biology programme expressed satisfaction with the quality of their courses. An important issue raised was the distribution of workload across semesters. The SER states that this aspect was taken into account.

### *(2) Expert judgement/indicator analysis*

The overall satisfaction of the students is comparatively low, 60% and 50% respectively cannot be described as good. There is no detailed analysis of the aspects that work well and those that need to be improved. For the only example given, the distribution of workload, there is no comment on how VU will address this issue.

## ***Strengths and weaknesses of this evaluation area:***

### ***(1) Strengths:***

1. Well-defined processes and responsibilities for decision making and quality assurance
2. Enviably student and other stakeholder participation in decision making at all levels.

### ***(2) Weaknesses:***

1. Lack of stakeholder (management, faculty, students) awareness of defined quality guidelines.
2. Insufficient information on the collection and use of information on studies, their evaluation and improvement processes and results in the SER.

#### IV. RECOMMENDATIONS\*

Evaluation Area	Recommendations for the Evaluation Area (study cycle)
Intended and achieved learning outcomes and curriculum	<p>Develop an effective and appropriate strategy to support the mission of VU, to maintain high quality degree programmes that include not only broad factual knowledge and a classical theoretical approach to teaching, research, and learning, but also modern/emergent teaching, learning, and research methods that would enable students to acquire knowledge and skills that encompass current trends in biology.</p> <p>Re-evaluate the ECTS allocated to each course taking into account the actual time required to achieve the outcomes and prepare for the course examination.</p> <p>Improve the organisation and/or supervision of teaching in certain courses (especially those taught by more than one teacher).</p> <p>Reduce the number of written examinations, especially in courses where there are already several alternative forms of examination.</p> <p>Develop final thesis supervision and evaluation programmes to ensure quality of student supervision.</p>
Links between science (art) and studies	<p>The university should evaluate the research output in such a manner that it would be possible to disclose possible differences within the CAU.</p> <p>The university could encourage even more students to take part in scientific work.</p>
Student admission and support	<p>For second-cycle studies VU should define a set of required knowledge and qualifications needed and assess eligible degrees based on a more substantial overlap with the defined prerequisites, effectively narrowing the scope of eligible programmes. Few missing skills can still then be made up with additional courses, but only to a certain degree.</p> <p>The panel recommends increasing the efforts to motivate students to use their opportunities for study exchange. Responsible lecturers should better communicate the benefits and encourage students.</p>
Teaching and learning, student performance and graduate employment	<p><u>BSc Biology</u>: Basic courses with multi-teaching should be omitted at this level for better student performance and more effective</p>

	<p>assessment.</p> <p><u>MSc Biodiversity and Neurobiology</u>: more practical work in the form of independent projects/professional practice should be included in the programs.</p> <p>Better procedures for preparation of Individual study plans should be established.</p> <p>Course descriptions should be available in English for foreign students and for courses taught in English for national students.</p> <p>Opinions of alumni on their competences for the labour market should be followed systematically. More communication with potential employers is necessary for updating the programs.</p>
Teaching staff	<p>Increase both incoming and outgoing staff mobility, and increase the numbers of individual staff participating.</p> <p>Re-visit the approach to ensuring that teaching staff are competent to perform their duties. This involves ensuring that all staff, including doctoral students, are properly trained for her/his role as a teacher and assessor in higher education.</p>
Learning facilities and resources	<p>The university should make a long term strategy for renewal and updating of equipment</p>
Study quality management and public information	<p>Increase stakeholder (management, faculty, students) awareness of defined quality guidelines (i.e., explain to them the importance of their role in quality assurance processes conducted at VU).</p>

## V. SUMMARY

### **Main positive and negative quality aspects of each evaluation area of the study field *Biology at Vilnius University:***

The report on the overall evaluation of the BSc programme in Biology and the MSc programmes in Biodiversity and Neurobiology at Vilnius University is positive. The panel has received all the information necessary for a successful evaluation of the programmes. Based on the detailed SER and virtual meetings with various stakeholders, as well as additional documentation kindly provided by VU, the panel highlights the main positive and negative quality aspects of the programmes' evaluation:

#### Positive quality aspects of the evaluation:

The programmes provide graduates with broad theoretical knowledge, solid practical skills, and clear opportunities for students to shape their studies according to their personal goals. The broad classical BSc programme in Biology includes various basic courses and electives with different teaching and learning methods, as well as the MSc programmes Biodiversity and Neurobiology, which are well organised and provide student-centred and challenging learning. VU provides comprehensive student support in many areas, including extensive opportunities for student mobility and good study conditions for socially vulnerable students and students with special needs. Efforts are made to create strong links between VU academic staff and employers, to internationalise programmes, and to initiate international partnerships in research and teaching. The quality of research in the VU biology field is increasing, more research is being published internationally, and students have opportunities to participate in research activities. The teaching and research laboratories of VU are equipped with high quality equipment and the library facilities are state of the art. VU has clearly defined processes and responsibilities for decision-making and quality assurance, and the involvement of students and other stakeholders at all levels is enviable.

#### Negative quality aspects of evaluation:

Degree programmes are overloaded with broad factual knowledge and a predominantly classical theoretical approach to teaching, research, and learning. Certain courses (i.e., those taught by more than one faculty member) are not adequately organised and/or supervised, and there is a lack of professional development for faculty on learning and teaching. ECTS credits allocated to courses do not take into account the actual time required to achieve outcomes and prepare for course exams, and written exams are overused. Despite existing efforts to increase student and staff mobility, it is still quite low, due in part to a lack of communication of benefits and encouragement to staff and students. Although student feedback plays a role in improving programme quality, it is not effectively processed and managed. There is no long-term strategy for renewing and updating research equipment at VU. Although VU has well-defined quality assurance procedures, there is a lack of awareness among stakeholders (management, faculty, students) of these policies and their role in the quality assurance processes conducted at VU.

Signature of expert panel chairperson:

Prof. dr. Mark S. Davies