

## APPLICATION

### Study field "Health Care" for assessment

Study field	<i>Health Care</i>
Title of the higher education institution	<i>Latvijas Lauksaimniecības universitāte</i>
Registration code	<i>2841101568</i>
Legal address	<i>LIELĀ IELA 2, JELGAVA, LV-3001</i>
Phone number	<i>63005601</i>
E-mail	<i>rektors@llu.lv</i>

# **Self-evaluation report**

Study field "Health Care"

Latvia University of Life Sciences and Technologies

<b>Self-evaluation report</b>	2
<b>Study field</b>	4
I - Information on the Higher Education Institution/College	4
II - Description of the Study Direction (1. Management of the Study Direction)	14
II - Description of the Study Direction (2. Efficiency of the Internal Quality Assurance System)	22
II - Description of the Study Direction (3. Resources and Provision of the Study Direction)	29
II - Description of the Study Direction (4. Scientific Research and Artistic Creation)	41
II - Description of the Study Direction (5. Cooperation and Internationalisation)	47
II - Description of the Study Direction (6. Implementation of the Recommendations Received During the Previous Assessment Procedures)	50
<b>Annexes</b>	54
<b>Other annexes</b>	56
<b>Nutrition Science (45722)</b>	57
<b>Study programme</b>	60
III - DESCRIPTION OF THE STUDY PROGRAMME (1. Indicators Describing the Study Programme)	60
III - DESCRIPTION OF THE STUDY PROGRAMME (2. The Content of Studies and Implementation Thereof)	62
III - DESCRIPTION OF THE STUDY PROGRAMME (3. Resources and Provision of the Study Programme)	71
III - DESCRIPTION OF THE STUDY PROGRAMME (4. Teaching Staff)	75
<b>Annexes</b>	80

# I - Information on the Higher Education Institution/College

## 1.1. Basic information on the higher education institution/ college and its strategic development directions, including the following information:

Latvia University of Life Sciences and Technologies (LLU) is the fourth-largest university in Latvia (established in 1936 as an independent higher education institution) which implements studies and research for various industries of the national economy and which has developed relevant educational and research competence and expertise in:

- unique fields: agriculture, forestry, veterinary medicine, food technology and landscape architecture;
- universal fields: information technology, economics and social sciences, agricultural engineering, environmental sciences, civil engineering and pedagogy, as well as nutrition science.

**LLU vision** - Latvia University of Life Sciences and Technologies is one of the leading science and technology universities of the Baltic Sea region, with a specialisation in the sustainable use of natural resources to improve the life quality of society.

**Mission** - to build internationally competitive intellectual potential based on excellence in research, application of research results in the national economy, high quality of studies and effective university management.

### **LLU long-term goals:**

1. Excellence in research that promotes technology and innovation and is integrated into the study process.
2. High-quality studies that provide the development of internationally competitive specialists.
3. Effective university management ensures the targeted and efficient use of resources for high-quality studies and excellence-focused research.

**LLU medium-term objectives** are subordinated to the vision, the mission and the long-term goals and are as follows:

1. Excellence in research.
2. Application of research results in the national economy (research results are understood to mean the university's knowledge, technology and innovation accumulated and generated).
3. Integration of studies and research.
4. Internationalisation of studies and lifelong education.
5. High quality and competitive studies that meet the current demand.
6. Diversified supply of lifelong education that meets the current demand.
7. Effective university management at all levels.

The LLU Development Strategy for 2015-2022 (<https://www.llu.lv/index.php/en/mission-and-vision>) prescribes three action programmes with relevant targets to achieve the long-term goals:

1. Research Programme;
2. Education Programme;
3. Management Programme.

LLU is comprised of the following eight faculties:

1. **LF** – the Faculty of Agriculture (established in 1863);
2. **VMF** – the Faculty of Veterinary Medicine (established in 1919);
3. **MF** – the Forest Faculty (established in 1920);
4. **TF** – the Faculty of Engineering (established in 1944);
5. **VBF** – the Faculty of Environment and Civil Engineering (established in 1947);
6. **PTF** – the Faculty of Food Technology (established in 1948);
7. **ESAF** – the Faculty of Economics and Social Development (established in 1968 as the Faculty of Agricultural Economics; in 2013, the Faculty of Economics merged with the Faculty of Social Sciences);
8. **ITF** – the Faculty of Information Technologies (established in 2001).

Totally, the Faculties of LLU implement 61 study programmes within **14** study directions (as of October 1, 2020).

Table 1.1.1.

### Number of students and programmes in LLU study directions

B – bachelor programmes; M – master programmes; D – doctoral programmes

No	Study direction	Number of programmes				Number of students (01/10/2020)	Faculties
		Total	B	M	D		
1	Agriculture, Forestry, Fishery, and Food Hygiene	<b>12</b>	6	3	3	1,140	LF, MF, VMF
2	Architecture and civil engineering	<b>9</b>	5	2	2	434	VBF
3	Production and processing	<b>8</b>	4	2	2	443	PTF, MF, TF
4	Information technology, computer engineering, electronics, telecommunications, computer management and computer science	<b>4</b>	2	1	1	286	ITF
5	Environmental protection	<b>3</b>	1	1	1	98	VBF
6	Health care – a joint programme with LU and RSU	<b>1</b>		1		22	PTF
7	Mechanics and metal working, heat power engineering, heat engineering and mechanical engineering	<b>6</b>	4	1	1	272	TF
8	Power industry, electrical engineering and electrical technologies	<b>1</b>	1			85	TF

No	Study direction	Number of programmes				Number of students (01/10/2020)	Faculties
		Total	B	M	D		
9	Sociology, Political Science, and Anthropology	2	1	1		68	ESAF
10	Economics	3	1	1	1	389	ESAF
11	Management, administration and real estate management	5	2	3		342	ESAF
12	Hotel and restaurant service, tourism and recreation organisation	1	1			141	PTF
13	Internal security and civil defence	1		1		53	MF
14	Education, pedagogy and sports - the direction to be closed in 2023	5	2	2	1	118	TF
Total		61	30	17	12	3,891	

LLU personnel, job positions and age group statistics information are presented in Table 1.1.2.

Table 1.1.2.

**LLU personnel, job position and age group statistics** (as of October 1, 2020)

	Total	incl. women
<b>University personnel</b>	<b>957</b>	<b>652</b>
incl. academic staff members who have been elected at LLU	305	190
professors	57	33
associate professors	53	36
assistant professors	64	47
lecturers	40	30
leading researchers and researchers	91	44
Academic staff members – professors, associate professors, assistant professors, lecturers – who are also elected as leading researchers and researchers	156	105
<b>Other personnel</b>	<b>652</b>	<b>462</b>
Academic staff who have not been elected at LLU (visiting professors, visiting assistant professors, visiting lecturers)	253	153

of which foreign visiting professors, visiting assistant professors, visiting lecturers	<b>21</b>	<b>4</b>
Distribution of <i>academic staff members</i> by age:		
25-29 years	4	3
30-34 years	21	12
35-39 years	49	24
40-44 years	39	28
45-49 years	46	32
50-54 years	30	24
55-59 years	31	23
60-64 years	41	26
65 years and over	44	18

227 members of the total academic staff have a scientific degree (74.43%).

LLU promotes and supports the engagement of young teachers in academic work. Of the current academic staff, 52% are less than 50 years old, 33% are from 50 to 65 years old and only 14% are over 65 years old.

### **Changes in the number of students at LLU in the period 2013-2020 (October 1 of each year)**

In the period from the academic year 2013/2014 to the academic year 2020/2021, the total number of students accounted around 4,000. The decrease in the number of students over the six-year period reflects overall negative demographic trends concerning the natural increase of population and migration. The total number of students at LLU decreased by 18% over the six-year period, yet a positive fact is that the number of students tends to remain stable in last years. Overall, the total number of students was affected by the processes occurring in the country: 1) the number of individuals who finished the secondary school decreased by 20% in the reference period; 2) the number of individuals who finished their secondary school and continued their education at university was very volatile from year to year: a 5% decrease in 2015 and 2017 and a 1-2% increase in 2014 and 2018. Currently (in 2020), the number of students has levelled off, and there has even been a slight increase in the total number of students studying at LLU compared with the previous year.

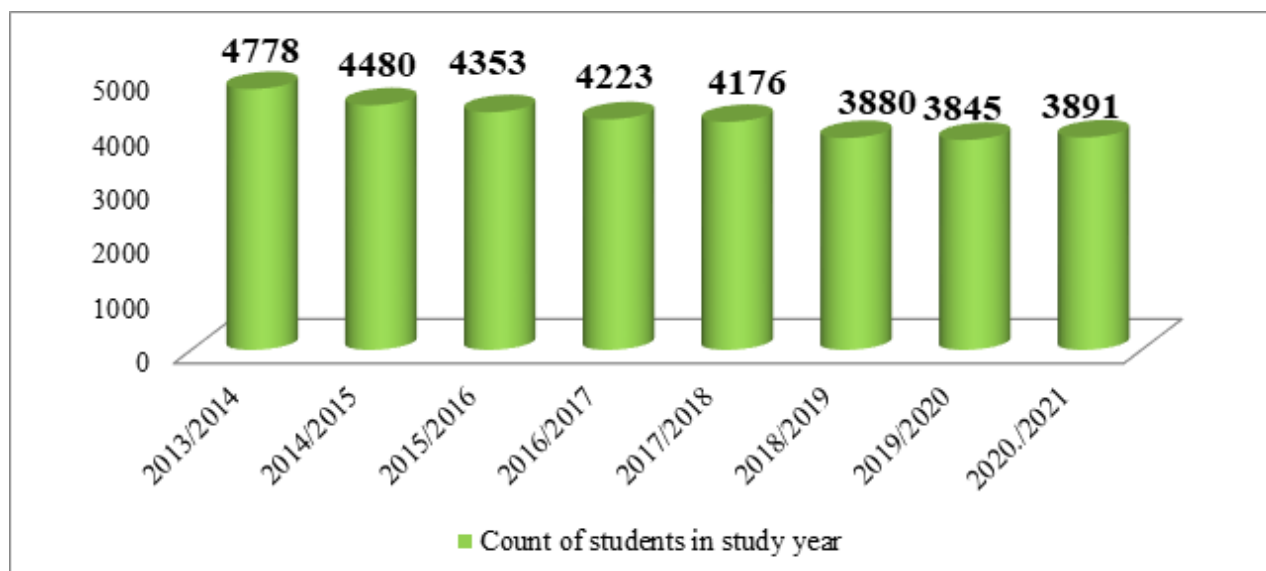


Figure 1.1.1. **The total number of students in the period from 2013/2014 till 2020/2021**

After the university had succeeded in tackling the external factors affecting the number of students, a number of reasons for the decrease in the number of students were established; the reasons were identified from the analysis of the matriculation of students.

The major reasons are as follows:

1. There was a considerable increase in the number of students who discontinued their studies during the first semesters owing to the wrong study programme or study direction chosen, their jobs or private life problems;
2. Some students could not continue their studies because of financial problems or due to the schedule requirements (especially working part-time students) since they could not combine studies with their working hours;
3. Master's degree students were unable to combine studies with their jobs;
4. Interest in doctoral studies tended to decrease because financial support for doctoral students was insufficient (a monthly scholarship determined by the state was EUR 113.83), and the availability of funding for research was limited.

The distribution of the number of students by level of studies at LLU in the reference period was as follows:

1. Bachelor's degree studies - 79-84%;
2. Master's degree studies - 13-17%;
3. Doctoral studies - 4%.



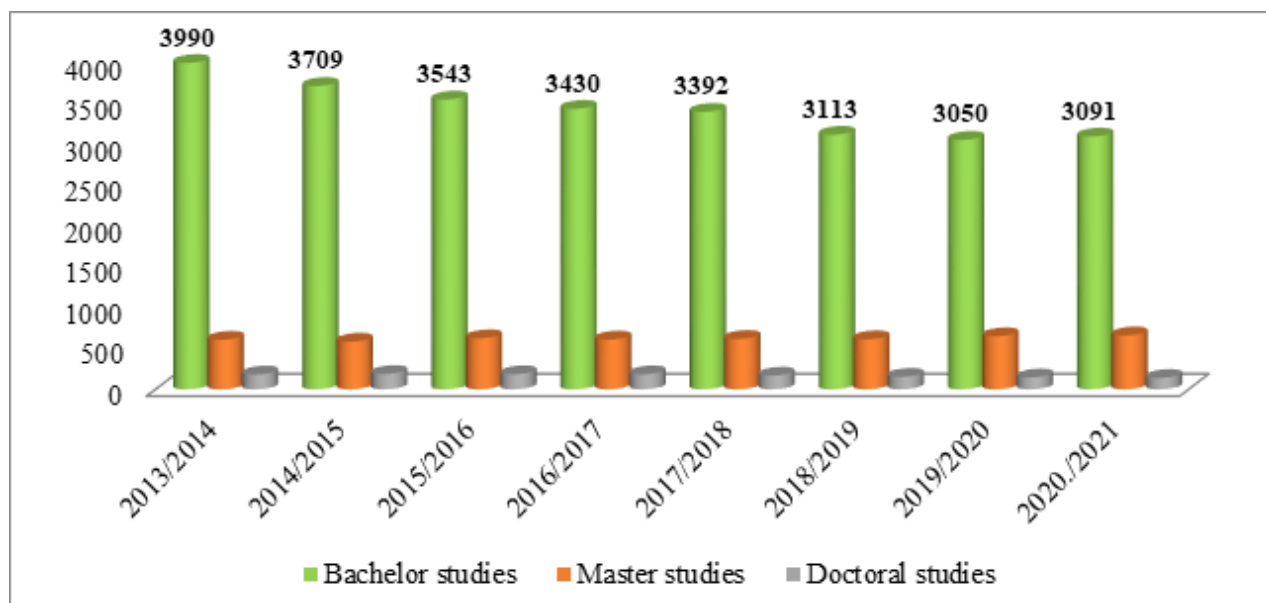


Figure 1.1.2. **The number of bachelor, master, and doctoral students in the period from 2013/2014 till 2020/2021**

The analysis of changes in the number of students distributed by the level of studies allows concluding that the numbers of undergraduate students were the most volatile (a negative trend). Notwithstanding, the number of master students shows an increasing tendency. The decrease in the number of doctoral students could be explained by the insufficient amount of funding allocated to science and research as well as the fragmented nature of that funding.

Main activities implemented by LLU to increase its number of students:

1. In the academic year 2015/2016, LLU began admitting international students for studying in English. Thus 161 international students studied at LLU in 11 study programmes (at all levels of studies) in the academic year 2020/2021.

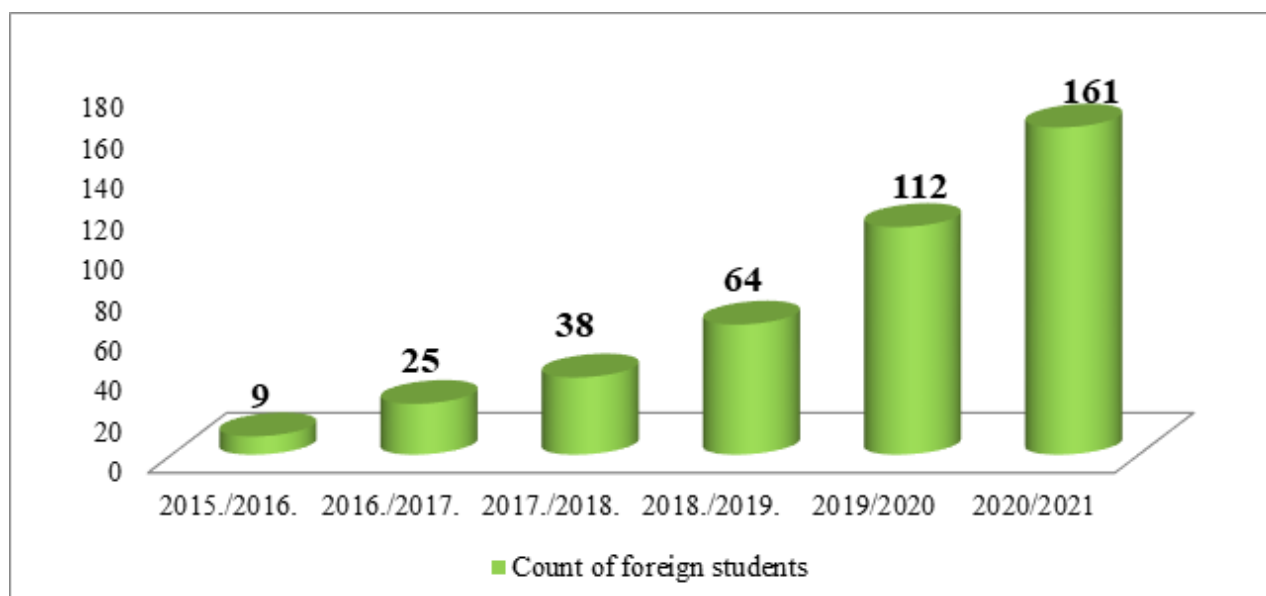


Figure 1.1.3. **The number of foreign students at LLU**

2. Infrastructure for studies and research has been improved and modernised.
3. Opportunities to receive scholarships funded by patrons tend to increase.
4. LLU provides doctoral students with internal research grants.

**1.2. Description of the management of the higher education institution/ college, the main institutions involved in the decision-making process, their composition (percentage depending on the position, for instance, the academic staff, administrative staff members, students), and the powers of these institutions.**

The following collegial institutions are involved in making **strategic decisions** at LLU:

The **Council** is a supreme collegial representation, management and decision-making body for academic and scientific matters authorised by the personnel of LLU.

The **Council**:

- approves and amends the Constitution of LLU;
- elects and dismisses the members of the Senate of LLU;
- elects and dismisses the rector of LLU;
- elects the Academic Arbitration Court of LLU and dismisses its members;
- hears reports by the Senate, the Rector and the Academic Arbitration Court;
- approves and amends regulations on electing the Council, electing and dismissing the Rector and the statutes of the Senate and the Academic Arbitration Court;

discusses and makes decisions on conceptual matters on the performance and development of LLU

The Council is composed of 240 members who are elected by the organisational units of LLU by secret ballot for three-year terms in the following composition:

- 160 academic staff (67%);
- 50 students (21%);
- 30 other personnel (13%).

The Council functions in accordance with its Statute - <https://www.llu.lv/lv/konvents> (in Latvian)

The **Senate** is collegial management and decision-making body of the personnel of LLU, which approves the rules and regulations that govern all the spheres of LLU activity, with the exception of those that fall within the remit of the Council in accordance with the Constitution of LLU.

The Senate is approved by the Council for a period of three years. The Senate consists of 60 senators, of which:

- 41 are representatives of academic staff who represent all the Faculties (68%);
- one representative of other personnel (2%);
- the Rector of LLU, the Vice-Rectors for studies and science and the chair of the Council as representatives of academic personnel, the director and the Chancellor of LLU as representatives of other personnel (10%);
- 12 representatives of students who have been nominated by the Student Self-government (20%).

The Senate functions in accordance with its Statute - <https://llu.lv/lv/senats> (in Latvian)

Regulations, decisions and procedures in relation to the matters pertaining to the basic activity of LLU are also passed, within the scope of competence, by:

1. Rector;
2. Vice-Rectors for studies and science;
3. Chancellor;

4. Director;
5. Deans of the Faculties

*Annex 1. Main internal legal acts and regulations.*

*Annex 2. LLU Management Structure.*

### **1.3. Description of the mechanism for the implementation of the quality policy and the procedures for the assurance of the quality of higher education, as well as the stakeholders involved in the development and improvement of the quality assurance system and their role in these processes.**

#### Quality management system at the University

The quality management of study processes is part of the overall quality management system of LLU. Since 2016, the quality management system of LLU has been based on the international standard for excellence (see Investors in Excellence Standard, [www.investorsinexcellence.com](http://www.investorsinexcellence.com)).

The quality management system of LLU is externally audited every two years (audits may be done by the organisations recognised by the Investors in Excellence organisation, which either grant or do not grant an Investors in Excellence certificate to the organisation audited). Such a certificate was granted to LLU both in 2016 (the first audit) and in 2018 (the repeated audit).

The quality management system of LLU is part of the overall LLU Development Strategy and covers a broad spectrum of matters. A short general description of the LLU Quality Management System and the Quality Assurance Plan is available at <https://www.llu.lv/index.php/en/mission-and-vision>

#### Quality management system in the context of studies

LLU has developed a detailed joint scheme of study processes that includes 90 major study processes, their sequence and interaction. Each of the 90 processes is described and arranged sequentially. The description contains the following parts: activities; responsible organisational units and employees; reference to the legislative or regulatory framework governing the activities. The detailed joint scheme of study processes provides a common approach to study processes across all the organisational units.

The descriptions of quality of studies at LLU are restricted access documents and are intended for internal use at LLU as well as are part of the management and strategic documents of LLU. The detailed information on the internal quality management system and its effectiveness is contained in Section 2.2 of the self-assessment report where the quality management system is described, assessed and defined in the context of a particular study direction.

#### The characteristics of stakeholders and their role in the development and improvement of quality assurance system.

The quality management system of LLU covers all the spheres of LLU activity. The academic staff and other personnel of LLU are involved in the quality management system. The coordinating body of the quality management system is the Administrative Centre of LLU, which is subordinate to the Rector.

**1.4. Fill in the table on the compliance of the internal quality assurance system of the higher education institution/ college with the provisions of Section 5, Paragraph 21 of the Law on Institutions of Higher Education by providing a justification for the given statement. In addition, it is also possible to refer to the respective chapter of the Self-Assessment Report, where the provided information serves as evidence for the full compliance, partial compliance or non-compliance.**

1.	The higher education institution/ college has established a policy and procedures for assuring the quality of higher education.	<p>Complies</p> <p>Investor in Excellence certificate issued in 2016. Detailed information is provided in Section 1.3 of the report</p>
2.	A mechanism for the creation and internal approval of the study programmes of the higher education institution/ college, as well as the supervision of their performance and periodic inspection thereof has been developed.	<p>Complies</p> <p>New study programmes are developed in accordance with the Regulation on Study programme Development, Approval and Amendment at LLU (No. 10-5 as of 13 March 2019) approved by the Senate. The Regulation stipulates that:</p> <ol style="list-style-type: none"> <li>1. A programme shall be developed by a Faculty, discussed by the Methodological Commission of the Faculty and approved by the Board of the Faculty;</li> <li>2. The programme developed shall be discussed by the Board of Studies and recommended for approval by the Senate;</li> <li>3. The Senate shall approve the programme and a director for the programme;</li> <li>4. Relevant documents shall be submitted to the Academic Information Centre for being licensed;</li> <li>5. New students shall be admitted to LLU and enrolled in the programme after the licence has been granted.</li> </ol> <p>Every year, annual reports are drawn up for all study programmes; the reports are approved by the Senate and published on the LLU website <a href="https://www.llu.lv/lv/studiju-virzienu-parskati-un-pasnovertejuma-zinojumi">https://www.llu.lv/lv/studiju-virzienu-parskati-un-pasnovertejuma-zinojumi</a> (in Latvian)</p>
3.	The criteria, conditions, and procedures for the evaluation of students' results, which enable reassurance of the achievement of the intended learning outcomes, have been developed and made public.	<p>Complies</p> <p>The students' learning outcome assessment system is described in:</p> <ul style="list-style-type: none"> <li>• Regulation of Studies (bachelor's and master's degree studies).</li> <li>• Regulation of Doctoral Studies.</li> </ul> <p>The requirements for assessing students' learning outcomes for each particular course are given in the descriptions of course study programmes available in Latvian and English in the LLU IS course register at <a href="https://lais.llu.lv/pls/pub/kursi.startup?l=1">https://lais.llu.lv/pls/pub/kursi.startup?l=1</a></p>

4.	Internal procedures and mechanisms for assuring the qualifications of the academic staff and the work quality have been developed.	<p>Complies</p> <p>LLU has developed procedures and regulations (approved by the Senate) to guarantee the qualifications and work quality of academic staff:</p> <ol style="list-style-type: none"> <li>1. The LLU Regulations on Academic Positions - <a href="https://www.llu.lv/sites/default/files/2021-06/Akad_amati_2021_0.pdf">https://www.llu.lv/sites/default/files/2021-06/Akad_amati_2021_0.pdf</a> (in Latvian).</li> <li>2. The Regulation regarding the Calculation of Academic Workload (see in the Annex LLU Documents in English No 8).</li> <li>3. The Motivation System for LLU Academic Staff (see in the Annex LLU Documents in English No 9).</li> <li>4. Classes for students are scheduled in accordance with the procedures approved by the Rector: classes are scheduled in a centralised way for full-time studies, while for part-time studies it is done by each Faculty. The schedules are publicly available two weeks before the beginning of a semester - <a href="https://www.llu.lv/lv/nodarbibu-grafiki">https://www.llu.lv/lv/nodarbibu-grafiki</a> (in Latvian).</li> </ol>
5.	The higher education institution/ college ensures the collection and analysis of the information on the study achievements of the students, employment of the graduates, satisfaction of the students with the study programme, efficiency of the work of the academic staff, the study funds available, and the disbursements thereof, as well as the key performance indicators of the higher education institution/ college.	<p>Complies</p> <p>LLU uses an information system that aggregates information about the entire study process of each student (decisions regarding the student, grades earned, payments made). Every semester, a survey of students is conducted to find out students' opinion regarding the courses taken, satisfaction with the way the courses are organised, the content of the courses, the teaching staff delivering the courses (an electronic questionnaire). The survey results are available to each teaching staff member, directors of study programmes, department/institute directors, deans of the Faculties and the Vice-Rector for studies.</p> <p>For financial planning and accounting, LLU employs the accounting system Horizon that is a single system connected with the Ministry of Agriculture. The achievement of the goals and targets set by the LLU Development Strategy is reported each year at different levels:</p> <ul style="list-style-type: none"> <li>Faculties – at the Board of the Faculty;</li> <li>Administrative units – at the Board of Studies;</li> <li>The Vice-Rectors, the Chancellor and the LLU Director – during the Rectorate meetings;</li> <li>The Rector – during the Council meetings.</li> </ul>
6.	The higher education institution/ college shall ensure continuous improvement, development, and efficient performance of the study direction whilst implementing their quality assurance systems.	<p>Complies</p> <p>Reports of the study directions are produced every year, reviewed by the Board of Studies and approved by the Senate. Once approved, the reports are made public on the LLU website <a href="https://www.llu.lv/lv/studiju-virzienu-parskati-un-pasnovertejuma-zinojumi">https://www.llu.lv/lv/studiju-virzienu-parskati-un-pasnovertejuma-zinojumi</a> (in Latvian).</p>

## II - Description of the Study Direction (1. Management of the Study Direction)

### 1.1. Economic and/or social grounds for the creation of the study direction and the relevant study programmes, the assessment of the interrelation among the study programmes, as well as the analysis of the significance (singularity) of the study programmes in comparison with other similar study programmes in Latvia and abroad.

The strategically developed, integrated joint master's study programme "Nutrition Science" (45722) of the University of Latvia (LU), Rīga Stradiņš University (RSU) and Latvia University of Life Sciences and Technologies (LLU) synergistically integrates into the direction of Health Care. Only one study programme is implemented in the study direction and it is the only such programme in Latvia, also in the Baltics.

The defined aims, tasks and development direction of the study programme are closely related to the study direction and correspond to the mission defined in the LLU development strategy: to achieve excellence in the fields of research specialization and to provide high quality study services. The implementation of the study direction is closely related to the state policy in health care, including health policy initiatives and the Public Health Guidelines for 2014-2020 (<https://likumi.lv/ta/id/269591-par-sabiedribas-veselibas-pamatnostadnem-20142020gadam>) (in Latvian) and the Public Health Guidelines for 2021-2027 (<http://tap.mk.gov.lv/lv/mk/tap/?pid=40498718>) (in Latvian).

The hierarchically highest medium-term planning document at the national level is the "National Development Plan 2014-2020" ([https://www.pkc.gov.lv/images/NAP2020%20dokumenti/NDP2020\\_English\\_Final.pdf](https://www.pkc.gov.lv/images/NAP2020%20dokumenti/NDP2020_English_Final.pdf)), in which one of the priorities is "Human securitability" with the strategic direction "Healthy and fit for work", and "National Development Plan 2021-2027" ([https://www.pkc.gov.lv/sites/default/files/inline-files/NAP2027\\_ENG.pdf](https://www.pkc.gov.lv/sites/default/files/inline-files/NAP2027_ENG.pdf)), in which one of the priorities is "Strong Families, a Healthy and Active Population" with the direction "Human centered healthcare". Its implementation is inconceivable without educated, highly qualified nutritionists who promote public policy initiatives, including the development and progress of the study direction.

In the Regulation of the Cabinet of Ministers of the Republic of Latvia No. 746/2017 "On the priority directions in science in 2018-2021" (<https://likumi.lv/ta/id/295821-par-prioritarajiem-virzieniem-zinatne-2018-2021-gada>) (in Latvian) among the determined priority directions of science is public health, which emphasizes the importance and topicality of research in the study direction.

The above-mentioned strategic documents determine the need for interdisciplinary knowledge, which is the basis for the implementation of the study direction.

The topicality of the joint master's study programme "Nutrition Science" is promoted by modern tendencies in the field of public health: consumers want to prevent diseases; the state wants to reduce the cost of medical care; the number of people suffering from diseases caused by unbalanced and unhealthy diet is increasing; diseases caused by eating disorders appear among young people, etc.

The joint academic master's study programme "Nutrition Science" is designed to educate qualified nutritional specialists who have acquired in-depth theoretical and methodological knowledge and

research skills to independently conduct research in the field of nutrition, food, food chemistry and toxicology, who are able to analyse, critically evaluate and generate new ideas and alternative approaches to nutrition and prevention of nutrition-related diseases. The study programme is compared with two study programmes "Nutrition & Health" of the University of Wageningen (the Netherlands) and "Human nutrition and food-related behaviour" of the University of Helsinki (Finland). Common: scope of the study program 120 ECTS, length 2 years. The programmes are implemented in English, at the University of Helsinki also in Finnish and Swedish, and a master's thesis is developed and defended at the end of the studies. Study courses with a similar name include nutrition, its value in life. Different: at Wageningen University, the emphasis is on fundamental study courses, less on nutrition therapy and diet-related courses. At the University of Helsinki, there are 2 study tracks in the programme - nutrition and food-related behaviour, a large proportion of independent work, and more fundamental study courses in the programme.

## **1.2. Aims of the study direction and their compliance with the scope of activities of the higher education institution/ college, the strategic development directions, as well as the needs and the development trends of the society and the national economy.**

The defined aims, tasks and development course of the study direction are closely related to the performance of the study programme and correspond to the mission defined in the LLU development strategy: to achieve excellence in the fields of research specialization and to provide high quality study services. The scientific potential of the study programme of the **Latvia University of Life Sciences and Technologies** included in the direction of Health Care contributes to the Latvian economy and sustainable development of society. LLU Strategic Planning vision envisages that LLU is one of the leading universities of science and technologies in the Baltic Sea Region with a specialization in the sustainable use of natural resources to improve the quality of life of the society. In this context, close cooperation of the academic and research staff, involved in the direction, with RSU and LU lecturers and researchers is encouraged, to promote the study process and research, also mobility, cooperation with professional organizations and associations in Latvia and abroad, international cooperation with implementers of similar study programmes is promoted. The study direction strategy is closely linked to the national public health policy, including health policy initiatives and public health guidelines for 2014–2020 and 2021–2027. The role of nutrition in health care as a branch of public health is growing rapidly. The strategic direction of this area is changing the focus of health care from treatment to prevention and the development of healthy habits and disease prevention. The forecasts of the Ministry of Economics in this group of programs as a whole see a significant increase in labour demand by + 120% (2020–2030). The above findings are the basis of all study courses of the study programme, which confirms the unity of the aims of the study programme and the study direction.

The significance of the study direction programme for the development of society and national economy is determined by its interdisciplinary and joint cooperation of leading Latvian universities for its implementation. The cooperation between the University of Latvia, Rīga Stradiņš University and the Latvia University of Life Sciences and Technologies has created an example of good management of study resources, how to effectively use the university's resources, academic and research potential. By implementing an interdisciplinary approach to achieve the aims of the study direction and the programme, each university brings to the programme its own special experience and strategic, deliberative use of infrastructure.

**1.3. SWOT analysis of the study direction with regard to the set aims by providing explanations on how the higher education institution/ college expects to eliminate/ improve weaknesses, prevent threats, and avail themselves of the given opportunities, etc. The assessment of the plan for the development of the study direction for the next six years and the procedure of the elaboration thereof. In case there is no development plan elaborated or the aims/ objectives are set for a shorter period of time, information on the elaboration of the plan for the development of the study direction for the next assessment period shall be provided.**

The strengths and weaknesses, opportunities and threats of the study programme of the study direction have been assessed on the basis of public health policy initiatives in the country, economic and social situation in Latvia. The development perspective of the study direction is determined by the labour market forecasts, also the strategic direction (priority) "Healthy and fit for work" defined in the national long-term and medium-term planning documents. In addition, when analysing the factors of biological ageing processes, quality of life, exogenous and endogenous factors threatening the health of the Latvian population, functional limitations caused by health disorders and their clinical epidemiology, nutrition, nutritional quality is an important health-promoting factor. This is the reason and justification for inter-university cooperation, successful implementation of the joint study programme and the strong side of the study direction and at the same time the possibility for further development.

Study direction SWOT analysis matrix

<b><i>Strengths of the study direction</i></b>	<b><i>Weaknesses of the study direction</i></b>
<p>The importance of the study direction, including the study programme, in the promotion of public health, disease prevention.</p> <p>The only joint academic master's study programme in the country, in the implementation of which 3 leading Latvian universities participate.</p> <p>Graduates have good career opportunities in the labour market.</p> <p>Qualification, experience and scientific competence of the academic staff.</p> <p>Material and methodological provision of the study process.</p> <p>Study places financed from the state budget.</p> <p>Students/lecturers mobility.</p> <p>Positive assessment of the studies by students, graduates and employers.</p>	<p>Different level of applicant readiness for the acquisition of exact science study courses.</p>
<b><i>Opportunities of the study direction</i></b>	<b><i>Threats of the study direction</i></b>



---

Involvement of the industry professionals in the study process.

Attracting foreign lecturers.

Employment of doctoral students in the implementation of the study process.

Implementation of studies in English.

Demographic situation in the country

The plan of the study direction for the elimination of weaknesses is to continue the implementation of compensative courses, organization of the entrance examination. The threat is a decline in the number of students. A possible solution scenario is the implementation of the study programme in English, thus solving the issue of attracting students. To continue cooperation with all partners, to activate monitoring of students' performance, students' involvement in research, which can also reduce the decrease of the number of students in studies.

The development plan of the study direction is closely related to the development strategy of the LLU, the policy documents of the sector. The main development priorities of the study direction are related to:

- 1) improvement of the study and research infrastructure;
- 2) promoting students mobility;
- 3) more cooperation of higher education institutions in attracting foreign lecturers;
- 4) involvement of industry professionals (medical specialists of various fields) in the implementation of the study process and supervision of Master's theses.

**1.4. The structure of the management of the study direction and the relevant study programmes, and the analysis and assessment of the efficiency thereof, including the assessment of the role of the director of the study direction and the heads of the study programmes, their responsibilities, and the cooperation with other heads of the study programmes, as well as the assessment of the support by the administrative and technical staff of the higher education institution/ college provided within the study direction.**

The study direction is a part of the general structure of the LLU. The Faculty of Food Technology (PTF) is responsible for the implementation of the study direction, but cooperation partners from the University of Latvia, Faculty of Chemistry, Biology and Medicine and Rīga Stradiņš University, Faculty of Public Health and Social Welfare are involved in the implementation of the study programme courses.

Each partner university has appointed a programme director. The duties and rights of each director are determined by the internal normative documents of the respective higher education institution. For the implementation of the joint academic master's study programme, a Programme Council has been established, which includes the program directors of all partner universities and the programme director of the University of Latvia has been elected as the head of the Program Council.

The head of the Program Council supervises the implementation of the joint study program in all partner universities. All program implementers are bound by the Cooperation Agreement concluded on 29 November 2004 and the Amendments of 13 March 2007 to the Cooperation Agreement of 29 November 2004, which defines the responsibilities, obligations and liabilities of the higher education institutions for the implementation of certain study modules and their optional courses,

cooperation in the research, financial commitments, etc.

The following is a description of the study direction management at LLU. The academic staff of the Faculty of Food Technology is involved in ensuring the operation of the study direction: the dean, the study programme director, and the heads of departments. The secretary of the dean's office of the Faculty supervises the students' files, arranges the record-keeping, and prepares the diploma supplements. The director of the programme is responsible for the implementation of the study programme in accordance with the Senate decision No 9-81 (13 March 2007) "Regulations on study programme directors", which defines the duties and rights of the director. The director of the study programme is approved by the LLU Senate on the basis of the decision of the LLU Board of Studies.

The duties of the study programme director are to organize the development of the study programme; to prepare information for the annual self-assessment report of the study programme and study direction and for the accreditation self-assessment report; to co-operate with the dean of the faculty, heads of departments, teaching staff and students in the improvement of the study programme; to follow the evaluation of the teaching staff involved in the study programme at LLU IS and to evaluate them; to analyse the results of the conducted surveys and to propose the elimination of the revealed shortcomings; to perform academic recognition of the study courses or parts thereof; to inform students about current processes, activities and requirements in studies, to cooperate with LLU Studies Centre and Communication and Marketing Centre.

In the implementation of the joint study programme, the study programme director is obliged to cooperate with the partner universities directors of the academic master's study programme "Nutrition Science", to organize the study process at the respective university, to inform students and teaching staff, cooperate with the Resources Accounting Centre in preparing inter-university settlements, to plan joint entrance examination and organise it, to analyse the evaluation of all partner university students in the implementation of the study process and courses, to organize the work of the teaching staff, to involve doctoral students in the implementation of study courses.

The study programme director prepares information for the annual self-assessment report of the study direction, which is approved by the Board of PTF.

The study programme directors and the dean are involved in the work of the PTF Methodological Commission (Decision No. 6-17 of the LLU Senate of April 9, 2008 "Regulations of the Methodological Commission"), thus establishing cooperation in evaluating and coordinating study programmes implemented at the faculty.

The organization of the study programme is conducted taking into account the needs of students in the study process, regularly evaluating and analysing the performance of the study program. The study work is organized by PTF and its departments but supervised by the Board of PTF, Studies Centre, LLU Boards and Senate.

The study direction includes one study programme, the head of which is at the same time the head of the study direction. The internal documents of the LLU regulate the preparation of study direction reports (the person responsible for the preparation of study direction reports is determined by the Vice-rector for Studies Order No. 2.4-8 / 66 of 6 October 2020 "On the procedure for preparation of annual study direction report and self-assessment report").

The efficiency of management at LLU is promoted by the unified procedures in the study organization in all study directions and programmes, unified document samples and availability of information on ongoing processes and current events, regular meetings with management, deans, supporting administrative units.

See the scheme of the management structure in the Annex *The structure of the management of the*

**1.5. Description and assessment of the requirements and the system for the admission of students by specifying, inter alia, the regulatory framework of the admission procedures and requirements. The assessment of the study period, professional experience, and the options for the students to have their previously acquired formal and non-formal education recognised within the study direction by providing specific examples of the application of these procedures.**

The enrolment procedure and requirements for students are determined by the *Procedure for Enrolment*. The procedure for enrolment in the study programme "Nutrition Science" included in the study direction "Health Care" is approved by the Senate in October every year and published on the LLU portal. The procedure for enrolment is available in Latvian at <https://www.llu.lv/lv/uznemsana> and [https://www.llu.lv/sites/default/files/2020-10/Uznemsanas\\_noteikumi\\_pamatstudijas\\_2021\\_2022.pdf](https://www.llu.lv/sites/default/files/2020-10/Uznemsanas_noteikumi_pamatstudijas_2021_2022.pdf).

Persons with higher second level professional education Medicine or Dentistry, Food technology, Veterinary medicine, bachelor's or master's degree in Health Sciences (Nursing, Public health, Occupational therapy, Physiotherapy, Rehabilitation), Biology, Chemistry, Environmental science, Pharmacy, Food Science, Catering and hotel management, Sports pedagogy and Health education and other related fields can apply for master's studies in the joint academic master's study programme "Nutrition Science". It is mandatory for all applicants to pass the entrance examination.

LLU graduates can apply for master's studies electronically using the LLU Information System, graduates of other higher education institutions shall apply in person at LLU. When submitting the documents, the applicant receives information about the time and place of the entrance examination and the content of the entrance examination. Conditions/criteria for the entrance examination:

- substantiation of the choice of the study programme;
- outline of the research work experience;
- participation in conferences;
- mobility in a foreign university/universities;
- outline of problems of the potential master's thesis topic;
- self-assessment of the applicant's exact knowledge (natural sciences);
- outset of the master's thesis.

Each criterion is evaluated in points, the maximum number of points per the criterion is 50, and the maximum total number of points is 350. The evaluation is performed by the entrance examination commission.

The entrance examination takes place centrally for the applicants of all partner higher education institutions together, the entrance examination is accepted by the entrance examination commission established by the joint master's study programme and approved by each higher education institution (Boards of Faculties). The entrance examination commission summarizes the results and ranks the applicants according to the results of the entrance examination, evaluating also the weighted average grade of the previous education diploma. **Applicants who have passed the competition enter into a study agreement on matriculation at the respective higher education institution (LU, RSU or LLU).**

Previously acquired formal and non-formal education opportunities in the study direction are not applied.

**1.6. Assessment of the methods and procedures for the evaluation of students' achievements, as well as the principles of their selection and the analysis of the compliance of the evaluation methods and procedures with the aims of the study programmes and the needs of the students.**

The basic principles of student knowledge evaluation are determined by the Cabinet of Ministers regulations No. 240/2016 "Regulations on the State Academic Education Standard" and LLU internal regulatory acts, for example, the Study Regulations. Criteria, conditions and binding procedures for assessing students' progress are described in the Study Regulations, see [https://www.llu.lv/sites/default/files/2021-05/Studiju\\_nolikums\\_2021.pdf](https://www.llu.lv/sites/default/files/2021-05/Studiju_nolikums_2021.pdf) (in Latvian). The basic principles of assessment are based on the learning outcomes in the study programme. Basic principles of the student performance evaluation:

- 1) principle of honesty - a set of requirements for study courses is defined, the quality of knowledge is assessed qualitatively (on a 10-point scale or passed/failed) and quantitatively (in credit points);
- 2) principle of mandatory - it is required to obtain a successful assessment in all study program courses;
- 3) principle of assessment review - LLU determines the procedure for review of the obtained assessment;
- 4) the principle of diversity of examination types - see the types of examination used in the assessment of the study program acquisition in the descriptions of study courses.

The study course programme defines knowledge, skills and competencies, as well as their assessment is specified in the requirements for obtaining credit points and the organization of students' independent work. The teaching staff acquaint the students with the aim of the study course, tests, organization of independent work and the procedure and terms of performance, as well as the evaluation criteria at the beginning of the study course. This information is also included in the e-studies for the respective course.

The lecturer chooses the study course evaluation methods, taking into account the specifics of the study course, the level of students' preparedness, the previously acquired study courses. The types of examination are collegially discussed in the Program Council of the joint master's study program "Nutrition Science".

The analysis of the success of the students of the programme is evaluated twice a year, at the end of each semester. The study regulations stipulate the procedure for the implementation of studies in case of academic debts.

The principles of evaluation of the final theses have been developed at the LLU, it is determined by the "Regulations on Final Examinations" (approved by the decision of the LLU Senate) and subordinated Rector's and Vice-rector's orders, methodological instructions for the development and defence of a master's thesis developed at the Faculty of Food Technology. The procedure for the evaluation of the Master's thesis is described in the description of the Master's Thesis study course. The master's thesis is developed according to a certain scheme. In the course work "Nutrition Science" students prepare a theoretical review of the master's thesis topic, which is defended at a public meeting organized by the joint master's study programme. One month before the submission of the Master's thesis, a pre-defence of the Master's thesis is organized, in which the

progress of development and the degree of readiness of the master's thesis is assessed. The Master's thesis is defended at the meeting of the Master's Examination Commission (MEC), its evaluation (with a grade) is formed from the evaluation of the reviewer and the members of MEC commission.

The defined principles, criteria and procedures for evaluating student performance promote the achievement of the goal of the study programme and ensure the evaluation of student-centred learning.

**1.7. Description and assessment of the academic integrity principles, the mechanisms for the compliance with these principles, and the way in which the stakeholders are informed. Specify the plagiarism detection tools used by providing examples of the use of these tools and mechanisms.**

Academic integrity is the performance of academic work with the highest standards of professionalism and accuracy, objectivity and truthfulness, moral and ethical principles, integrity, including the prevention of plagiarism, truthful reporting and accuracy in academic publications, as well as in communication and publicity activities that shape the image of the academic environment.

The task of academic integrity of the University is:

- 1) to adhere to a high academic and scientific culture;
- 2) to promote public confidence in the quality of education and the results of scientific research;
- 3) to prevent and eliminate violations of the principles of academic integrity;
- 4) to establish liability for unfair and unauthorized conduct.

Students and LLU academic, general, scientific and administrative staff are equally responsible for the observance of the principles of academic integrity and for the consequences of violation.

LLU has developed and follows certain procedures for the examination of plagiarism of the final theses and actions, if they are found:

- 1) Rector's order "Procedures for Submitting Electronic Copies of Final Theses and Their Verification in the Plagiarism Control System";
- 2) Rector's order "Violations of Academic Integrity in Final Theses / Doctoral Theses".

In 2014, LLU concluded an agreement on the use of the inter-university unified computerized plagiarism control system and started the examination of all final theses on plagiarism in undergraduate and master's studies, but since academic year 2017/2018 also in doctoral studies.

The procedure provides that if in the final work the system finds a 10% coincidence of the text with another work, the Methodological Commission of the Faculty of Food Technology of the LLU decides on the presence or absence of plagiarism. When making a decision, the explanations of the author of the work and his /her supervisor are considered. In the period from 2014 to 2020, 40 works have been examined in the study direction "Health Care". None of them showed signs of plagiarism in any of their work.

**1.8. Specify the websites (e.g. the homepage) on which the information on the study direction and the relevant study programmes is published (in all languages in which the**

**study programmes are implemented) by indicating the persons responsible for the compliance of the information available on the website with the information published in the official registers.**

Information about the study programme of the study direction is published on the LLU portal ([www.llu.lv](http://www.llu.lv)), providing basic information about the programme, including current events. A detailed description of the study programme is available in the section *Studijas / Studiju programmas (in Latvian)*, where one can see the detailed information of the study programme - <https://www.llu.lv/lv/magistra-studijas/uzturzinatne> (Uzturzinātne). Information about the study program can be found in the section *Nāc studēt/Ko studēt? Palīgs studiju programmu izvēlē (in Latvian)* - <https://www.llu.lv/lv/nac-studet-llu>

The description of the study programme is also available on the website of the Faculty of Food Technology (<http://www.ptf.llu.lv/lv>) in the section *Studijas / Studiju iespējas (in Latvian)*, see master's studies (<http://www.ptf.llu.lv/lv/magistra-studijas>).

Information about the study programme is also compiled in the electronic catalogue, at the same time also feedback from graduates and employers is presented. See the catalogue of master's study programmes - <https://www.llu.lv/buklets/llu-magistra-studijas-buklets-2020>.

The structural units responsible for the compliance of the information available on the LLU portal in the official registers are:

- Studies Centre - for undergraduate, master's and doctoral study programmes;
- International Cooperation Centre - for study programmes that are implemented in English.

Information about LLU study programmes is also available on the portal [www.prakse.lv](http://www.prakse.lv) in the section *Izglītība/ Izglītības iestādes (in Latvian)* - <https://www.prakse.lv/edu/profile/84/latvijas-lauksaimniecibas-universitate>.

The LLU portal provides information on the conditions and procedures of academic mobility in accordance with the ERASMUS + University Charter and programme guidelines:

- <https://www.llu.lv/lv/starptautiska-mobilitate> in Latvian;
- <https://www.llu.lv/en/exchange-studies> in English.

LLU subscribes to study e-marketing sites for popularisation of the study programmes:

- <https://www.masterstudies.com/universities/Latvia/LLU/>
- <https://www.educations.com/search/jelgava>

## **II - Description of the Study Direction (2. Efficiency of the Internal Quality Assurance System)**

**2.1. Assessment of the efficiency of the internal quality assurance system within the study direction by specifying the measures undertaken to achieve the aims and outcomes of the study programmes and to ensure continuous improvement, development, and efficient performance of the study direction and the relevant study programmes.**

The internal quality assurance system is a continuous process, the aim of which is the continuous improvement and development of the study direction and the study programme included in it. This is confirmed by the internationally recognized certificate “Investor in Excellence” obtained by the LLU, which has been obtained for the second time and currently the activities of the LLU are audited according to this certificate until 2022 (<https://www.llu.lv/lv/sertifikats-investors-in-excellence>).

The internal quality assurance system is based on several stages:

- plan – set goals, plans personnel, finances, time, etc. resources – the desired operational results are defined in the LLU Development Strategy 2015–2022, in the PTF Work Plan, LLU Enrolment Limits and Forecasts;
- do – implement the study and research process, the activities of the Faculty;
- check – control and implement performance monitoring measures (for example, analysis of the results of the implementation of the strategy);
- act – improve processes and activities, initiate changes in internal regulatory documents.

LLU study work is organized and managed in accordance with standards and guidelines for quality assurance in the European Higher Education Area. Taking into account these guidelines, internal normative documents for the study organization have been developed. Supervision of LLU activities is ensured by performing activities integrated into daily work and activities, such as coordination, approval, evaluation of work quality, division of duties and responsibilities, etc., at the same time targeted control measures are implemented throughout the year at different times.

The indicators characterizing **the quality of studies** are:

- number of matriculated students – once a year, the Studies Centre sends information to the dean and the study programme director for data evaluation and statistics;
- number of students in the study programme – the Studies Centre once a month sends information to the dean and the study programme director for data evaluation, analysis, and action, if necessary;
- fulfilment of the state-funded places – the Studies Centre once a month sends data to the LLU management, dean.

The indicators characterizing **the qualification and work quality of the teaching staff** are:

- students' assessment at the end of each semester: the survey is conducted electronically at LLU IS. The results of the survey are available to the directors of the study programmes, the heads of the structural units and each lecturer individually (assessment of the study course taught in the respective semester). The results of the survey and the comments provided in it give the lecturer the opportunity to evaluate and improve his / her work, provide the study program director with insight and recommendations for improving the quality of study courses and the programme. Heads of the structural units and administration use the information obtained from the surveys for study quality improvement measures at the university level. The results of the survey are one of the criteria in the motivation system of the LLU teaching staff;
- the qualification of the teaching staff is ensured by the LLU regulations on academic positions, which confirm the compliance of the person's academic and professional qualification with the study and research work (<https://www.llu.lv/lv/nolikumi>);
- in order to promote the continuous professional development of the teaching staff in the didactics of the higher education institution, the professional development program for higher education teachers “Innovations in Didactics of the Higher Education Institutions” has been established.

To monitor the quality assurance of **the study environment**, a self-assessment report of the study programme is prepared once a year, which includes information on changes in study plans and courses, development of new study courses, study materials and information resources, cooperation with stakeholders, infrastructure changes, etc.

An important part of the study quality is the provision of study materials, textbooks and resources, therefore the fund of the LLU Fundamental Library is constantly supplemented with literature recommended by the lecturers in the state language and foreign languages (mainly in English). The lecturers themselves prepare study materials, write textbooks and monographs, which are used in the study process.

The management of the Faculty constantly monitors the compliance of the study environment and material and technical provision with the needs of the study process.

In accordance with the results of quality monitoring measures, the quality of studies is reviewed and measures are taken to improve it.

For the implementation of the joint master's study programme, the co-operation partners have integrated the quality assurance systems of the higher education institutions for effective internal quality assurance of studies, within the framework of which the following activities are performed:

- 1) internal quality control is performed by the Programme Council, management and teaching staff of the responsible faculties of the University of Latvia, Rīga Stradiņš University and Latvia University of Life Sciences and Technologies, once a year discussing and evaluating the study results;
- 2) the Programme Council performs strategic planning of the study process and supervises the implementation thereof, initiates the necessity of changes which are discussed and approved in the Boards of the responsible faculties at the higher education institutions;
- 3) preparation of a joint annual self-assessment report, and joint analysis of students performance;
- 4) a joint survey of students, graduates and employers;
- 5) preparation of study materials, common requirements for the development of a Master's thesis, etc.

## **2.2. Analysis and assessment of the system and the procedures for the development and review of the study programmes by providing specific examples of the procedures for the development of new study programmes within the study direction (including the approval of study programmes), the review of the study programmes, the aims, and regularity, as well as the stakeholders and their responsibilities. Description of the mechanism for obtaining and providing a feedback, including with regard to the work with the students, graduates, and employers.**

The development of new study programmes is performed in accordance with the regulations "Regulations for the Development, Approval and Change of the Study Programmes at the LLU" approved by the Senate. The regulations stipulate that the programme is discussed and analysed in the Methodological Commission and the Board of the Faculty, and the LLU Board of Studies. The developed programme or its changes are confirmed by the decision of the Senate.

The existing study programmes are reviewed every study year, preparing an annual report of the study direction. The reports are publicly available on the LLU portal at



<https://www.llu.lv/lv/studiju-virzienu-parskati-un-pasnovertejuma-zinojumi> (in Latvian). Representatives of the Board of Faculty, Studies Centre, and LLU Board of Studies are introduced to the prepared reports and those are approved by the Senate.

In the period from 2018 to 2021, LLU implements ESF project No. 8.2.3.0/18/A/009 "The Management Improvement of the Latvia University of Life Sciences and Technologies", within the framework of which the content analysis of study programmes was performed from the point of view of industry experts (employers) and foreign experts (professors of related fields of study). Recommendations of the industry and foreign experts have been taken into account for further improvement of the study programme, namely, the results to be achieved by the study programme have been specified, the usefulness and scope of the individual study courses have been considered, as well as higher involvement of master students in research.

The surveys of students, graduates and employers are being conducted for the acquisition of feedback. The results of the survey can be found in Section 2.6 of the self-assessment report of the study programme. The recommendations of students, graduates and employers are discussed in the Programme Council of joint academic master's study programme "Nutrition" and implemented in the study programme (see Section 2.6 of the study programme self-assessment report).

**2.3. Description of the procedures and/or systems according to which the students are expected to submit complaints and proposals (except for the surveys to be conducted among the students). Specify whether and how the students have access to the information on the possibilities to submit complaints and proposals and how the outcomes of the examination of the complaints and proposals and the improvements of the study direction and the relevant study programmes are communicated by providing the respective examples.**

Students have the right and opportunity to submit proposals, complaints about the course of the study process and the content of the study programme. Students can submit proposals:

- in writing or orally at the Faculty level - to the study programme director, the head of the department or the dean;
- in writing or orally at the LLU management level - the Studies Centre, the Vice-rector for Studies, the Rector, also the Board of Studies and the Senate, reviewing and approving the internal regulatory enactments of the Latvia University of Life Sciences and Technologies;
- anonymously, using the alert system at LLU - <https://www.llu.lv/lv/trauksmes-celsana> (in Latvian).

The LLU Study Regulations, which are available to students at *Mans LLU* (My LLU), set out the procedure for submitting and reviewing complaints. If a student has submitted a written complaint, then after its review, he or she will receive a written response if the review of the complaint has taken place without the student's presence.

The student can submit a complaint to the LLU Academic Arbitrage, which operates in accordance with the regulations. Assessing that the joint master's study programme "Nutrition Science" of the study direction is implemented by cooperation partners, the student can also make proposals, complaints and recommendations to the head of the joint study programme "Nutrition Science" Program Council, who coordinates joint supervision, management and planning of the study process at RSU, LLU and LU.

More often students inform orally or in writing the director of the study program or the dean. During the negotiations solutions, compromises are sought in case of a specific problem (change of lecturer, etc.).

**2.4. Provide information on the mechanism for collecting the statistical data, as developed by the higher education institution/ college. Specify the type of the data to be collected, the collection frequency, and the way the information is used to improve the study direction.**

LLU centrally collects statistical data from different aspects and with different regularity.

**Once a month:**

1) the number of students in study programmes - the number of students in the type and form of studies, study directions and Faculties, the compiled statistics are sent to the management of LLU and the deans of faculties; statistical data are used to follow the dynamics of the number of students at LLU;

2) fulfilment of the state-funded study places – data are compiled by study programmes in order to follow the fulfilment of state-funded study places; these data are used to forecast the number of new state-funded study places to be enrolled and to rotate the number of places in each semester (competition for state-funded study places); the compiled statistics are sent to the LLU management and the deans of the Faculties, if necessary also to the vice-deans.

**Once an academic year:**

1) number of graduates in study programmes, study directions and faculties, types of funding, these data are used for preparation of various reports (for example, LLU annual report - <https://llu.lv/lv/llu-pamatdokumenti> - in Latvian);

2) enrolment results from different aspects, those are used for planning the enrolment limits and forecasts for each following year;

3) compilation of statistical data of the LLU *Augstskola-1* for the Central Statistical Bureau (CSB). The data collection is based on the forms specified by the CSB. The collected data is sent to the Ministry of Education and Science and is available to all interested parties (<https://izm.gov.lv/publikacijas-un-statistika/statistika-par-izglitibu/statistika-par-augstako-izglitibu> - in Latvian). The data is also used to prepare various reports (for example, LLU annual report).

**Once a year:**

1) summary of statistics on study per the type and form of studies, graduates, dropouts, reasons, statistics of foreign students. These summaries are received by the study programme directors and these data are used to evaluate the preparation of annual reports of study directions (available at <https://www.llu.lv/lv/studiju-un-reglamentejosie-dokumenti> - in Latvian);

2) fulfilment of state-funded study places by year, data are used for the preparation of LLU, Ministry of Agriculture and Ministry of Education and Science contract execution reports;

3) Summary of the implementation of the performance indicators of LLU Development Strategies 2015–2022 in the educational programmes, the data are used for the annual reports on the implementation of the Development Strategy and for cascading the objectives of the performance

indicators for the next year. Strategy implementation reports on Faculties are presented in face-to-face meetings;

4) Student and teacher mobility indicators. It is compiled by the LLU International Cooperation Centre and the data are used in the preparation of various reports.

At the Faculty level, data are collected and analysed with a certain frequency in relation to the results to be achieved in studies and research planned in the LLU Strategy. The following items are also analysed:

- 1) evaluation of the teaching staff work quality from the students' point of view (every semester);
- 2) results of the graduate survey (once a year);
- 3) information regarding the employment of students (once a year before the end of studies);
- 4) qualitative and quantitative indicators of the scientific activity of the teaching staff, incl. involvement of students in research (once a year);
- 5) infrastructure provision (once a year).

This information is the basis for the planning of the staff development direction in the Faculty, for the improvement of the study process, for the planning of material and technical and study material provision.

The joint academic master's study programme "Nutrition" Programme Council collects the data of students achievements for the analysis of study quality, the implementation of knowledge compensating (limited choice) courses and monitoring of study process organisation.

## **2.5. Description and assessment of the integration of the standards set forth in Part 1 of the ESG. Specify which of the standards are considered a challenge and which require special attention.**

LLU Development Strategy, quality management assurance, staff development, management improvement plan, infrastructure development plan are the main strategic priorities.

Integration of the standards included in Part 1 of the ESG in ensuring the internal quality of the study direction:

1. ESG 1.1. Quality Assurance Policy – LLU has developed a strategy, policy and related measures for ensuring the quality of study programmes and degrees/qualifications to be awarded. The policy documents and their implementation measures are summarized at <https://www.llu.lv/lv/llu-pamatdokumenti> (in Latvian). The quality assurance policy developed by LLU envisages the responsibility of the involved parties in quality assurance. See points 1.3 and 1.4 for more information.
2. ESG 1.2. Development and approval of programmes – LLU has developed procedures for the development and approval of study programs, regular control and supervision, and periodic review. For more information, see point 1.4.
3. ESG 1.3. Student-centred learning, teaching and assessment – LLU implements student-centred learning.
4. ESG 1.4. Matriculation of students, course of studies, recognition and certification of

qualifications – enrolment to LLU takes place on the basis of enrolment regulations approved by the LLU Senate. These regulations are approved by the Senate every year. In the LLU Information System, there is an option to follow the student's progress during studies. The student also has the opportunity to follow the progress, the acquired learning outcomes, financial information.

5. ESG 1.5. Teaching staff – LLU has developed procedures for assessing the quality of teaching staff, including criteria for obtaining a position. Professional development is provided. For more information, see point 1.4.

6. ESG 1.6. Study resources and support for students – LLU provides appropriate study resources for the education of students, plans acquisitions/provision with the support of various projects, programmes and budget funds. Provision of resources in the study programme, including the offer of the LLU Fundamental Library, see point 3.1 of the current report. The study programme director regularly communicates with students about the study process, organizational issues, course content, etc. The lecturers of the study programme have individual consultations (at least two times a week), students have the opportunity to communicate both remotely (e-mail, e-environment, telephone) and in person.

7. ESG 1.7. Information management – LLU ensures the collection of information from various aspects on the implementation of the study process, including the student's achievements (student's individual account). Details see in point 2.4.

8. ESG 1.8. Public information – LLU provides public information (qualitative and quantitative data) about study programmes, student performance, current information about research projects and cooperation projects, activities and events at LLU. Detailed information about the study offer can be found on the LLU portal in the section *Studijas / Studiju programmas (in Latvian)*. Also in the study catalogue - <https://www.llu.lv/buklets/llu-magistra-studijas-buklets-2020> (for master's studies, *in Latvian*), including thoughts and opinions of study graduates. Social networks and mass media are also used to inform the public. Representatives of LLU are actively involved in the work of branch organizations, ministerial working groups, commissions, development of regulatory enactments, various initiatives, organization of conferences, etc. LLU Faculty of Food Technology actively participates in LLU centralized events (Open Day, Career Day, participation in the exhibition School, Researchers' Night), also organizes international scientific conferences "FoodBalt" (International Baltic Food Science and Technology Conference, which takes place every year in one of the Baltic countries), in cooperation with the partners of the joint academic master's study programme "Nutrition Science" – the University of Latvia and Rīga Stradiņš University organize an international scientific conference "Nutrition and Health" (every four years, starting in 2012, continuing in 2016 and 2020).

9. ESG 1.9. Survey and regular inspection of programmes – LLU has developed procedures for reviewing, supplementing and updating the content of study courses. Students, graduates and employers, as well as industry experts, participate in the improvement of the study programme. Recommendations for the improvement of the program are reviewed in the Programme Council, ranked according to their relevance and implemented in the study process.

10. ESG 1.10. Cyclical external quality assurance - external quality assessment takes place every six years, taking into account the provisions of regulatory enactments.

Increased attention is paid to the implementation of each standard, the most important is the implementation of student-centred teaching, the material base corresponding to the level of science, the qualification of lecturers, and the implementation of the research. The major challenge is student-centred learning implementation (ESG 1.3).

## II - Description of the Study Direction (3. Resources and Provision of the Study Direction)

**3.1. Provide information on the system developed by the higher education institution/ college for determining the financial resources required for the implementation of the study direction and the relevant study programmes. Provide data on the available funding for the relevant study programmes, as well as the sources of the funding for the scientific research and/or artistic creation activities and their use for the development of the study direction. Provide information on the costs per one student (for each relevant study programme of the study direction) by specifying the headings indicated in the calculation of costs and the percentage of the funding among the indicated headings.**

The joint academic master's study programme included in the study direction is implemented by three cooperation partners. Each higher education institution receives state budget funds for a certain number of state-funded study places in the programme of this direction.

The financial provision/acquisition of LLU is described in detail below. In accordance with the LLU financial strategy, management and action policy, the use of financial resources is implemented by the LLU Financial Planning Centre. Every year, the LLU Senate approves the distribution of revenues and expenditures of the general budget of the Latvia University of Life Sciences and Technologies, which is prepared in accordance with the Law "On the State Budget". The general budget estimate is discussed and updated by the working group "Working Group on the Use and Development of Resources", it is approved by the LLU Senate. The working group includes Deans of Faculties, Chancellor, Rector, Vice-rector for Science, Vice-rector for Studies, Head of the financial centre, Head of the resource accounting centre, Lawyer, etc. The Faculty of Food Technology, which is the implementer of the study direction "Health Care", has at its disposal a certain % of the budget and paid study income, science base financing, project financing, etc. The Faculty can make operational decisions on budget planning, infrastructure purchases, etc.

The number of state-funded study places is coordinated in a tripartite agreement between the Ministry of Education and Science (MES), the Ministry of Agriculture and the Latvia University of Life Sciences and Technologies (LLU). The tripartite agreement on funding for 2020 stipulates that the basic costs of one study place are 1518.98 EUR, social security for master's studies 164.34 EUR. The minimum value of the study cost coefficient in the thematic area of education "Health Care" is 3, in accordance with the Cabinet of Ministers Regulations No. 994/2006 "Procedures for Financing Higher Education Institutions and Colleges from the State Budget". For master studies, the study level coefficient is 1.5.

Table 3.1 summarizes the costs per student in the joint academic master's study programme "Nutrition Science" at LLU.

Table 3.1

Costs per student in 2020 in the joint academic master's study programme "Nutrition Science" at LLU

Programme	Study cost coefficient	Cost per student, EUR
-----------	------------------------	-----------------------

The total budget distribution of LLU consists of estimates of structural units/faculties, where costs are estimated by type of expenditure. In 2020, the share of costs of the master's study program "Nutrition Science" consisted of:

- remuneration - 74%;
- scholarships - 8%;
- goods and services 17%, incl. utilities 6%;
- share capital formation 1%.

Material-technical resources are required for the implementation of the study program. The newly established Study and Science Centre of the Faculty of Food Technology has a variety of modern analytical equipment, engineering equipment for various foods production, as well as food raw materials and product composition analysers, including nutrient detection equipment. For the purchase of new equipment (spectrophotometers, chromatographs) the allocated budget funds, ERDF or ESF project funds are used, which are intended for the improvement of the quality of studies and the scientific base.

In addition to this funding, there are also opportunities to acquire ERASMUS + funding for the promotion of student and lecturer mobility, strengthening international cooperation, gaining contacts, etc.

The funding granted and attracted by the PTF allows for the implementation of student education, full-fledged scientific work, involvement of students in the performance of research work, etc.

Pursuant to Article 5.4 of the *Cooperation Agreement* of 29 November 2004, the higher education institutions make interim payments for the actual contribution to the implementation of the joint study programme, for detailed information see point 3.1 of the program self-assessment report. The performed calculations for the current calendar year are coordinated by the representatives of the Finance Department of all partner Universities, the directors of the joint academic master's study programme and the Vice-rectors of studies.

**3.2. Provide information on the infrastructure and the material and technical provision required for the implementation of the study direction and the relevant study programmes. Specify whether the required provision is available to the higher education institution/ college, availability to the students, and the teaching staff (the specific equipment required for the relevant study programme shall be indicated in Part III, Chapter 3 below the respective study programme).**

The joint master's study programme "Nutrition Science" is implemented in all cooperating higher education institutions, using the material and technical base of higher education institutions, in accordance with the study plan and the concluded Cooperation Agreement. It should be noted that during the last 7 years, significant resources have been invested in the improvement of the technical provision of all partner universities, as well as in the modernization and adaptation of the study environment for students with mobility impairments.

Three faculties - Biology, Chemistry and Medicine are involved in the implementation of this

programme at the University of Latvia. The study process mainly takes place in the LU House of Natural Sciences and in the LU Science House (Riga, Jelgavas Street 1). All auditoriums have projectors, laptops for presentations, large auditoriums have sound equipment and recording facilities. Wireless internet is available in the building. Study courses, which include laboratory work, take place in the laboratories of the Faculties of Biology, Chemistry and Medicine, which are equipped with the necessary equipment and data processing programs. LU has modern analytical equipment for the determination of various compounds, microbiological examinations, etc. (e.g. HPLC equipment, flame atomic absorption spectrophotometer, microorganism collection and laboratory equipment for human microbiome research, bioreactors, equipment for evaluating the analgesic results in laboratory animals *in vitro*, cell damage analysis equipment, body mannequins for an anatomy course, etc.). Professionals (clinicians) also participate in the study process, students use the infrastructure of P.Stradiņš Clinical University Hospital, Children's Clinical University Hospital (BKUS), Riga City 1<sup>st</sup> Hospital, Institute of Microbiology and Biotechnology of the University of Latvia, Institute of Food Safety, Animal Health and Environment BIOR.

Students have at their disposal the resources of the University of Latvia Library with a rich repository of information resources. For example, "Nutrition Science" students can use 22 databases – Britannica online, Cambridge Journals Online (CJO), EBSCO Academic Search Complete, EBSCO eBook Academic Collection, EBSCO Health Source - Consumer Edition, EBSCO Health Source: Nursing/Academic Edition, EBSCO MasterFILE Premier, EBSCO MEDLINE, Emerald, ISI Web of Knowledge/Web of Science, Letonika, OECD Library, Oxford Reference Online: Premium Collection, Project MUSE, ProQuest Dissertations & Theses, SAGE Journals Online, Science Direct, Scopus, UpToDate.

LU students and lecturers have access to e-studies environment, where study materials, information about the study course are added, communication with students takes place, students' knowledge is evaluated, etc. and students of partner universities (RSU and LLU) have access to library funds, e-studies.

The Faculty of Food Technology is involved in the implementation of this programme at the **Latvia University of Life Sciences and Technologies**. The study process takes place at the Study and Science Centre of the Faculty of Food Technology (Rīgas Street 22a, Jelgava). Projectors and laptops for presentations are available in all auditoriums. Wireless internet is available in the building. The **material-technical provision** of the study program is able to ensure an efficient study process, including the development of master's theses in selected topics. Master students have the opportunity to study independently and communicate with lecturers electronically using the e-environment. Study materials are added in the e-environment, in the e-studies created by LLU, which are available on the website <https://estudijas.llu.lv/?lang=en>. Students of partner Universities (RSU and LLU) have access to LLU e-studies.

The LLU Fundamental Library with a wide range of scientific literature and various databases is available for the preparation of the independent work, including the development of the theoretical review of the Master's thesis <http://llufb.llu.lv> (in Latvian). The electronic catalogue of the Fundamental Library contains information on more than 3,500 publications in the field of food and beverage technology, including nutrition. There are various options for searching for information. Databases "Electronic catalogue of LLU Fundamental Library", "Publications of LLU lecturers and researchers", "Doctoral dissertations defended at LLU", "Articles of LLU journals and conferences" created by LLU Fundamental Library. Subscribed databases, e-journals, e-books: AGRIS, CABI abstract, CABI Animal Health and Product Compendium, CRC Press e-books, EBSCO e-book Academic Collection, EBSCO database, newspaper library, Letonika, ScienceDirect journals, SCOPUS, Scival, Web of Science, Wiley Online. The library's holdings in thematic areas (%) are as follows: agriculture (38%), natural sciences (10%), social sciences (24%), engineering (19%), other



sciences (9%) and Internet resources (encyclopedias, dictionaries), information search engines and portals (CiteseerX Scientific Literature Digital Library and Search Engine, Elsevier, Springer link, etc.). From June 11, 2012, the LLU Fundamental Library provides access to subscribed databases outside the LLU network with the EZproxy tool, using the LLU Information Systems or e-studies user account.

In August 2015, the LLU Study and Science Centre of the Faculty of Food Technology was put into operation. Thanks to ERDF projects no. 2010/0119 / 3DP / 3.1.2.1.1. / 09 / IPIA / VIAA / 009 "Modernization of LLU Study Infrastructure" (2010–2015) and no. 2011/0040 / 2DP / 3.1.2.1.1. / 11 / IPIA / VIAA / 022 "Research Centre for the Utilization of Agricultural Resources and Food of National Importance" (2012–2015) a new building was built with a modern study and research base for food technology studies and research.

The following laboratories and pilot plants are at the disposal of the Faculty for the development of Master's theses: Food Process Laboratory, Food Packaging Laboratory, Sensory Evaluation Laboratory, Microbiology Laboratory, Biotechnology Laboratory, pilot plants for milk, meat, fruit-vegetable, and grain processing. Laboratories and pilot plants are provided with modern equipment, pilot-scale technological equipment for food development and quality testing. Master students can use analytical equipment (chromatographs, mass spectrometers, rheometers, texture analysers, equipment for analyses of fat, protein, fibre, including dietary fibre, flour analysers, milk analyser) and technological equipment (dryers of various constructions: spray dryer, microwave-vacuum drier, freeze-dryer; high-pressure processing equipment; spray dryer with particle microencapsulation capabilities; autoclaves, including back-pressure; flow pack packaging equipment), technological equipment for meat processing (thermal chambers, cutter, etc.), technological equipment for milk processing (cheese, butter, condensed milk products), membrane equipment module: for the implementation of ultrafiltration, microfiltration, reverse osmosis, nanofiltration; technological equipment for grain processing (mills, ovens, extruders), bioreactors' complex for simulation of gastrointestinal tract operation (implementation of *in vitro* digestion process); system for collecting and analysis of sensory evaluation results.

The description of the existing infrastructure and planned investments of the LLU is summarized in the description of the planned investments of the Latvia University of Life Sciences and Technologies

([https://www.llu.lv/sites/default/files/2020-05/LLU\\_Planoto\\_investiciju\\_raksturojums.pdf](https://www.llu.lv/sites/default/files/2020-05/LLU_Planoto_investiciju_raksturojums.pdf) - in Latvian) in accordance with the LLU development strategy 2015-2022.

The Faculty of Public Health and Social Welfare is involved in the implementation of this programme at **Rīga Stradiņš University**. The study process at this university mainly takes place at the Medical Education Technology Centre (Anņīnmuižas bulvāris 26a, Rīga). Projectors and computers for presentations are available in all auditoriums. Wi-Fi is available in the building. The Medical Education Technology Centre has a training kitchen, which is equipped with modern professional kitchen equipment, which allows to provide practical skills in the study courses included in the study process. In the RSU Biochemistry Scientific Laboratory, which is equipped with modern techniques for the determination of chemical substances, students also develop Master's theses. The RSU library subscribes to the PEN database, which provides access to evidence-based research in the field of nutrition. The university has established close cooperation with associations of nutritionists and nutritionists in Canada, Great Britain and Australia. All RSU buildings have a secure wireless network Eduroam WiFi, as well as free access computers for students, which provide access to student support systems and Internet resources. RSU students and lecturers have access to an e-learning environment, where study materials, information about the study course, communication with students, evaluation of students' knowledge, etc. are located. Students of partner universities (LU and LLU) have access to the Library's funds and e-studies.



**3.3. Provide information on the system and procedures for the improvement and purchase of the methodological and informative provision. Description and assessment of the availability of the library and the databases to the students (including in digital environment) and their compliance with the needs of the study direction by specifying whether the opening times of the library are appropriate for the students, as well as the number/ area of the premises, their suitability for individual studies and research work, the services provided by the library, the available literature for the implementation of the study direction, the databases available for the students in the respective field, the statistical data on their use, the procedures for the replenishment of the library stock, as well as the procedures and options for the subscription to the databases.**

When starting studies, each student is assigned a username and password, which can be used in the LLU IS systems intended for students: e-studies environment, *MansLLU*, LLU e-mail, students' personal account, incl. library services.

The programme of the study direction has a variety of methodological and informative support, it is available in the LLU Fundamental Library (FB) and at the place of implementation of the study programme - at the Faculty of Food Technology of the LLU.

**FB working hours** are tailored to the needs of students and teaching staff. On weekdays, the library is open from 8.30 to 19.00, Fridays from 8.30 to 17.00. The library is also open to readers on the first Sunday of each month from 9.00 to 14.00. The working hours of the FB Reading Room and Reference and Information Centre are extended until midnight during individual studies and examination session. The catalogue and online databases are available without time limit 24/7.

Table 3.3.1

Information about the reader service premises in the LLU Fundamental Library

Room No.	Name	Area, m <sup>2</sup>
161.	Subscriptions	26.9
254.	Reading room with reading room balcony	619
255-1.	Quiet reading room	34.3
255.	Reference and information centre	57.6
76.	Study literature loan	49.3
Total		787.1

The reading room has comfortable workspaces both in the hall and on the balcony. Internet and Wi-Fi are available. The reading room has also a seating area with comfortable sofas.

There is a quiet reading room. The reference and information centre has desktop computers and the services of a qualified consultant.

The following free services are available at LLU FB:

- computers with internet connection and wireless internet;
- opportunities to use the following software *Autodesk EDU Masyer suite 2018 (AutoCAD, AutoCAD Structural Detailing, Autodesk Robot Structural Analysis professional, etc.), CorelDRAW X7, SPSS Statistics v21, VISION 2013;*
- 24/7 use of online databases created by the library, subscribed and free of charge online databases;
- issuing / receiving books, serials and other documents;
- training for working with full-text and bibliographic databases, consultations for working with computers and the Internet;
- classes for LLU teaching staff, incl. online about searching for information, creating personal accounts, adding publications from the LLU faculty and researchers' publications database to the LLU IS personal account, use of Mendeley, creating researcher identification numbers ORCID and Research ID, etc.;
- classes for doctoral students, master students, undergraduate students in English;
- support materials for each target audience (researchers, students, other users) and sending them on request;
- completion of inquiries and consultations about the library and its use;
- editing bibliographies, sending examples of bibliography descriptions to e-mail upon request;
- creation of exhibitions to order.

The following paid services are available at LLU FB:

- copying (colour, black and white);
- prints (colour, black and white);
- scanning;
- execution of written thematic inquiries;
- Interlibrary and International Interlibrary Loan services (postal services must be covered);
- delivery of copies of documents (according to the suppliers' pricing);
- spiral binding.

The library offers the following e-services:

- the use of electronic catalogue 24/7;
- electronic reservation of books, extension of the return deadline 24/7;
- the use of united search engine PRIMO DISCOVERY;
- 24/7 use of library-created, subscribed and free online databases (both full-text and bibliographic), possibility to use the "Ask the Librarian" service in the EBSCO database;
- possibilities to connect to subscriber e-journal and e-book databases outside the LLU network using the EZproxy and LLU IS user account 24/7;
- use of the Mendeley scientific information retrieval program;
- opportunities to use other online information resources from the library website;
- opportunities to use information resource support materials prepared from the library home page both by LLU FB and offered by database maintainers;
- electronic delivery of documents;
- "Articles for the librarian", Skype;
- "Book Request Form" on the library's website.

Available databases for the relevant field

LLU FB offers users various online databases and databases on other media. The library has purchased the search engine PRIMO DISCOVERY, which provides opportunities to search

simultaneously in subscribed and open access online databases, in the electronic Joint Catalogue of Libraries of National Significance, in databases created by LLU FB (publications of LLU lecturers and researchers, LLU master's thesis, etc.). By registering with the LLU IS user account, one can view his/her user account and extend the deadlines for loaned publications, order publications, access full texts in subscribed online databases, save search results. The "Help in Information Finder PRIMO" is available on the library's website. Access to online databases is provided 24/7 in the LLU network, as well as to authorized users outside the LLU network, using the EZproxy and LLU IS user accounts.

Before offering databases to users, they are analysed for search capabilities, thematic coverage, chronological coverage, and access options. Information about databases is prepared, their descriptions are posted on the LLU FB website.

LLU FB users have the opportunity to search for information in the following subscribed foreign and Latvian online databases:

- *CAB Abstracts*;
- *CRC Press e-books*;
- *EBSCO eBook Academic Search Complete, MasterFILE Premier and others*;
- *ScienceDirect Journals*;
- *Scopus*;
- *SciVal*;
- *Web of Science*;
- *Wiley Online Journals*;
- *Lursoft*.

Table 3.3.2

Use of foreign databases subscribed to by LLU FB in 2020 (direction "Health Care" and "Production and processing")

Database	Number of connection sessions	Number of searches
<i>CAB Abstracts</i>	2590	7820
<i>EBSCO</i>	44174	130695
<i>EBSCO e-book</i>	6568	19364
<i>ScienceDirect Journal</i>	38118	50905
<i>Scopus</i>	18343	23859
<i>Web of Science</i>	5122	24503
<i>Wiley Online Journals</i>	7592	10439
<i>Taylor &amp; Francis Group CRC Press e-book</i>	4943	6694

LLU FB offers also various online databases for a trial period.

Readers are also offered databases created by LLU FB employees:

- *Publications of LLU lecturers and researchers;*
- *Doctoral theses defended at LLU;*
- *LLU conference materials;*
- *Patent publications of LLU lecturers and researchers;*
- *Publications about LLU.*

LLU FB is the deposit library of the Food and Agriculture Organization of the United Nations and the AGRIS national centre, which participates in the development of the international AGRIS database.

The library collection is mainly compiled according to the recommendation of the lecturers. A "Book Request Form" is available on the library's website. LLU FB purchases editions taking into account the demand of lecturers, other library users, as well as the demand created by the Faculty. The LLU FB has developed a "Collection Acquisition Policy", which stipulates that the main priority in the acquisition of the collection is the LLU study programmes and research directions. In accordance with the Law on Mandatory Copies, the LLU FB, as a library of national significance, receives one copy of each printed work and electronic publication in the fields of the LLU profile.

### **3.4. Provide information on the procedures for attracting and/or employing the teaching staff (including the call for vacancies, employment, election procedure, etc.), and the assessment of their transparency.**

The process of attracting and employing the teaching staff of the LLU (incl. announcing vacancies, hiring, election procedure, etc.) is regulated by the Regulations on Academic Positions of the Latvia University of Life Sciences and Technologies (*Latvijas Lauksaimniecības universitātes nolikums par akadēmiskajiem amatiem*) approved by the LLU Senate. Regulations are available at <https://www.llu.lv/sites/default/files/2021-04/Nolikums%2014.04.2021.pdf> (in Latvian).

#### **Selection**

The number of positions of professors, associate professors and assistant professors in the respective sub-sectors of the science field is determined by the LLU Senate according to the funding possibilities and necessity for the implementation of study programmes by the decision of the Board of Faculty. Occupation of an academic position at LLU takes place in accordance with the open competition procedure specified in the Regulations on Academic Positions of the Latvia University of Life Sciences and Technologies.

#### **Requirements**

Applicants for an academic position need a scientific or academic degree specified for the specific position. Requirements for applicants for academic positions are determined by the Law on Higher Education Institutions. The common requirements for all applicants for academic positions are:

- knowledge of the state language in accordance with the requirements of regulatory enactments;
- knowledge of foreign languages at the level required for the performance of the duties of the academic position, incl. conducting classes in these languages;
- continuous improvement of one's academic and scientific qualification.

#### **Electing**

Based on the received proposals of the academic structural units regarding the vacant academic positions, the LLU Personnel Department prepares a draft announcement and submits it to the LLU Academic Personnel and Structural Policy Commission for consideration. After the decision of the commission, the Personnel Department prepares a draft on the vacant academic positions and submits it to the LLU Senate for approval. After the decision of the Senate is made, the Personnel Department announces an open competition for the vacant academic positions by publishing an advertisement in the newspaper *Latvijas Vēstnesis* and on the LLU portal.

Elections shall be held by secret ballot: for the position of professor and associate professor in a specific field – in the respective Councils of Professors not later than within four months from the date of announcing the competition; in the position of assistant professor, leading researcher, researcher, lecturer, assistant and research assistant – in the Boards of Faculties not later than within three months from the day of announcing the competition.

The Rector concludes a contract with the person elected to the academic position for the term of election. If the LLU has a vacant academic position, the LLU Senate may not announce a competition upon the proposal of the Board of Faculty. In this case, the Rector may hire a visiting professor, visiting associate professor, visiting assistant professor, visiting lecturer, visiting assistant for a period of up to two years.

The **individual academic work** of the academic staff is planned in each academic year in accordance with the *Regulations on LLU academic work calculation* and the Rector's order *On planning, accounting and control of the individual workload of the teaching staff in the academic year*, which determines the academic staff work components, regulations, accounting and control procedures.

Remuneration for the academic position is determined on the basis of the Cabinet of Ministers Regulations No. 445/2016 "Regulations Regarding Remuneration Teachers" (see <https://www.likumi.lv/ta/id/283667-pedagogu-darba-samaksas-noteikumi> - in Latvian) and the Rector's Order *On Teachers' Remuneration*.

The professional development of the academic staff includes both the acquisition of appropriate professional development programmes and the exchange of experience and participation in conferences and seminars, which is confirmed by the documents issued at the end of them.

Every six years, academic staff are entitled to paid leave of six calendar months for research and scientific work outside the university.

The procedure for professional development is determined by Cabinet Regulation No. 569/2018 "Regulations on the Education and Professional Qualifications Required for Teachers and the Procedure for Improving the Professional Competence of Teachers" (<http://www.likumi.lv/ta/id/269965> - in Latvian). These regulations stipulate that the pedagogical qualification required for university teaching staff must be obtained in further education professional development programs on innovations in the higher education system, university didactics or educational work management in the amount of 160 academic hours (including at least 60 contact hours) until the end of the election period in the academic position. The LLU has established a professional development programme for higher education teachers "Innovations in Didactics of the Higher Education Institutions". The aim of the programme is to improve the knowledge of higher education teachers in the didactics of higher education and the possibilities of their use in pedagogical work. After mastering this program, a certificate is issued.

### 3.5. Specify whether there are common procedures for ensuring the qualification of the

**academic staff members and the work quality in place and provide the respective assessment thereof. Specify the options for all teaching staff members to improve their qualification (including the information on the involvement of the teaching staff in different activities, the incentives for their involvement, etc.). Provide the respective examples and specify the way the added value of the possibilities used for the implementation of the study process and the improvement of the study quality is evaluated.**

The requirements for academic positions are determined by the Law on Higher Education Institutions, the qualification of the teaching staff is determined by the Regulations on Academic Positions of the Latvia University of Life Sciences and Technologies approved by the LLU Senate. Invited teaching staff (not elected to an academic position) must meet the same requirements and qualification as the elected academic staff of the appropriate level.

LLU describes the processes for ensuring the qualification and work quality of lecturers. One of them is the election and re-election process of the academic staff (LLU Regulations on Academic Positions).

The growth, qualification improvement and evaluation of the academic staff are important personnel management processes that promote the professional development of the existing employees. Since 2017, the LLU has established a lecturer motivation system (internal document, LLU Board of Studies Decision No. 2.4-13 / 8). The created motivation system allows to receive a bonus for quality, well-valued work. The motivation system includes the evaluation of the teaching staff according to 14 criteria, which are summarized in 5 groups of indicators: student evaluation; preparation of teaching materials and study process (including excellent and highly valued final theses); organizational work; professional development and scientific work. Each indicator has a certain weight and the points obtained are summed (a point corresponds to a specific amount in euro). This system allows to evaluate the activity of the teaching staff, the quality of work and to be remunerated according to uniform criteria.

The skills and work performance of the academic staff are evaluated according to the students' evaluation, which students perform anonymously at the LLU IS at the end of each semester after completing the study course. Students evaluate the work of the lecturer in 6 indicators, the evaluation is from very high (5 points) to very low (1 point). The obtained assessment is available to each lecturer individually, the study program director, the head of the department. The lecturer improves or complements his / her study course according to the received results and provided comments/suggestions, eliminates shortcomings in his / her work. The study programme director and the head of the structural unit take these student assessments into account as much as possible when organizing the work for the next academic year.

For the exchange of experience and control of lecturers' classes, LLU has established and operates a procedure for observing classes.

In general, the quality of the study process is ensured at several levels. At the individual level, the lecturer is obliged to ensure a quality study process by constantly improving his / her competence (including conducting research and publishing research results in scientific journals or proceedings, participating in industry and international conferences, regularly reviewing learning outcomes, improving study course content, sharing academic experience).

LLU offers several opportunities for lecturers to improve their qualifications: 1) ERASMUS + staff mobility program for both teaching and training; 2) to participate in the annual Academic

Conference of the LLU, one of the goals of which is to share the experience with colleagues; 3) as far as possible, participation in international scientific conferences and symposia is financed (the science base funding); 4) to increase pedagogical competence in the centrally organized professional development programme for higher education institutions lecturers "Innovations in Didactics of the Higher Education Institutions" (for elected academic staff these courses are obligatory once in six years). The LLU Language Centre offers English language improvement courses for university lecturers. Since 2010, in-service training courses "Moodle e-course Development Management System" are provided. In recent years this course has been integrated into the development programme "Innovations in Didactics of the Higher Education Institutions".

Since 1998, LLU has been organizing an annual competition for textbooks and study materials created at LLU, with the aim of promoting the preparation and publication of new textbooks and study materials (including in electronic form).

Several ESF projects implemented by LLU 1) 8.2.2.0/18/A/014 "The Strengthening of LLU Academic Staff", the aim is to strengthen academic staff, to improve the English language skills, professional skills in the field of IT, cooperation with industry, internships in companies of the sector, to attract doctoral students and foreign guest-lecturers; 2) 8.2.3.0/18/A/009 "The Management Improvement of the Latvia University of Life Sciences and Technologies", within the framework of which the programme directors are also involved, improving the quality of study programme content.

Faculty members appreciate the participation in pedagogical and professional development activities offered and organized by the university. The acquired skills are used in the improvement of study course materials, updating of the study course programmes. Several lecturers involved in the study direction participate in the decision-making institution of the Faculties (Board) and Methodological Commission, in the LLU Senate, the Board of Science, the experience gained can be applied in the organization of the general work process. Upgrading the qualification gives the teaching staff the opportunity to work in higher-level study programmes, receiving a higher salary.

**3.6. Provide information on the number of the teaching staff members involved in the implementation of the relevant study programmes of the study direction, as well as the analysis and assessment of the academic and research workload. Provide the assessment of the incoming and outgoing mobility of the teaching staff over the reporting period, the mobility dynamics, and the issues which the higher education institution/ college must tackle with regard to the mobility of the teaching staff.**

Both elected and non-elected academic staff participate in the implementation of the joint academic master's study programme "Nutrition Science". In the study direction, the programme is implemented by LU, RSU and LLU, all LLU lecturers have various positions of elected academic staff. In the academic year 2019/2020, 38 lecturers participated in the implementation of the study direction, of which 18% professors, 40% associate professors, 13% assistant professors, 29% lecturers and teachers. More than 57% of the study program implementers have a doctoral degree.

Each partner university plans the workload of lecturers for the academic year in accordance with internal normative documents. The LLU Regulations for Calculating the Academic Work and the Rector's Order on the Planning, Accounting and Control of the Individual Workload of the Teaching Staff in the Academic Year determine the regulations, accounting and control procedures, etc. for pedagogical workload planning. The pedagogical workload of the lecturers of the programme is planned in accordance with the plan of the study programme and the semester of the study course

implementation.

The *Curriculum vitae* (CV in Europass format) of the teaching staff, the summarized information about the teaching staff involved in the study direction, their qualification, election status at the university, teaching of the study courses are summarized in Annex 3. *Nutrition science teaching staff* and Annex *Nutrition science teaching staff CV*.

Lecturers of the study direction are also active in science. The performance results of the scientific activity of the academic staff are summarized once a year, which is the basis for determining the principles of the lecturer's remuneration. The scientific activities of the academic staff are summarized in the CVs.

Lecturers of the partner universities participate in ERASMUS + mobility, in this report mobility activities are summarized on LLU lecturers who participate in the implementation of the program. LLU has signed cooperation agreements with other EU higher education institutions that implement study programs equivalent in terms of study content. The signed agreements are more oriented towards food science/technology because the contribution of LLU in the implementation of this programme is the implementation of courses related to food technologies, the composition of food raw materials (chemical nature). The academic staff performs tuition on the chosen/agreed topics, they also participate in training mobility. In total, 6 lecturers (85% of LLU lecturers employed in this programme) participated in teaching or training mobility (a total of 28 mobilities were implemented from the academic year 2013/2014 to 2019/2020, of which 21 (75%) were teaching). Analysing the countries where lecturers did teaching, they are Estonia, Poland, Turkey, Italy, France, Germany, Austria, Czech Republic, Slovakia, Portugal, Spain, and Lithuania.

The foreign lecturers perform tuition on the nutrition topics. In total, 8 foreign lecturers participated in teaching mobility, they have represented universities of Lithuania, Finland, Iceland, Norway, Denmark and Sweden.

The mobility of the teaching staff of the study direction is implemented mainly within the framework of the ERASMUS + program, but the lecturers also have individual cooperation agreements that provide for the mobility of the lecturers.

The main difficulties of teaching staff are combining workload and responsibilities with the implementation of mobility activities.

Information on teacher mobility (incoming/outgoing) is summarized in Annex 4 *LLU lecturers and foreign lecturers mobility*.

### **3.7. Assessment of the support available for the students, including the support provided during the study process, as well as career and psychological support by specifying the support to be provided to specific student groups (for instance, students from abroad, part-time students, distance-learning students, students with special needs, etc.).**

LLU provides various types of support to students in the study process:

- Informative – information on the study process, timetable, study programme content, scholarships, enrolment procedures and necessary documents is published on the websites of LLU and Faculties. Internal normative and methodological documents have been published in the LLU intranet *MansLLU*, also tips for work in the e-studies environment have been published, etc.;



- Methodological – consultations on the acquisition of study courses in person and online (using e-studies environment, e-mail, BBB, etc.); information, requirements and materials for the successful acquisition of the study course have been published in the e-studies; the database catalogues are available at the LLU Fundamental Library, in the library catalogue it is possible to search the necessary literature source, book them and follow the return deadline (including extending it if necessary); methodological instructions for the development and design of various study papers have been published on the websites of the faculties;
- Technical – troubleshooting of e-studies environment and in the use of the Internet;
- Financial – scholarships, allowance in tuition fee in accordance with regulatory enactments and the procedure specified by the LLU;
- Careers - Career days, Career Week events organized by the Faculty, LLU Lifelong Learning Centre career events (<https://www.mc.llu.lv/karjera> - in Latvian);
- Psychological - LLU Student Union mentoring program "Student - student friend", the support provided by the director of the study programme, etc. (part-time studies, distance learning forms are not applied in this direction).

## **II - Description of the Study Direction (4. Scientific Research and Artistic Creation)**

**4.1. Description and assessment of the directions of scientific research and/or artistic creation in the study direction, their compliance with the aims of the higher education institution/ college and the study direction, and the development level of scientific research and artistic creation (provide a separate description of the role of the doctoral study programmes, if applicable).**

In the study direction, research is implemented in the following directions:

- 1) food safety and risks;
- 2) research of biologically active substances in raw materials of food and products;
- 3) reduction of production by-products and waste in processing technologies;
- 4) new products from raw materials of plants and animals, their nutritional studies.

The chosen research directions are related to the research activities, the main research topics that are implemented at the Faculty of Food Technology. These trends have emerged, as worldwide more and more attention is paid to the milder processing technologies in an effort to maintain the stability of biologically active compounds. Biologically active compounds in food raw materials and products improve the functions of the human body, prevent the formation of unwanted compounds. By looking for ways to preserve biologically active compounds, to identify their composition and content, new products with positive health effects can be developed.

The food market, which is subject to globalization and competition, also poses a challenge to operate in a highly competitive environment and to work on the development of new processes, technologies and products in search of solutions for the use of scientifically based, nutritionally important products.

Food safety is a key factor in ensuring public health, and comprehensive research into food safety, the formation of potential compounds in its production, and the factors that contribute to it are areas of scientific research and new results. Integrated food production, including the processing of

by-products and residual products into value-added products, is one of the key challenges of the European Green Deal, and promoting research to new knowledge and results accumulation is helping economic sectors to find solutions for environmental sustainability.

The research implemented in the study direction is closely related to the LLU priority research directions, which are defined in the LLU strategy ([https://www.llu.lv/sites/default/files/2020-12/StrategijaENG\\_8\\_12\\_2020.pdf](https://www.llu.lv/sites/default/files/2020-12/StrategijaENG_8_12_2020.pdf)), they are implemented by the lecturers of the Faculty of Food Technology, leading researchers, researchers and doctoral students. The Faculty is also responsible for the implementation of the study programme included in the study direction. Research in the field of food technology implemented within the direction is a key area of Latvia's Smart Specialization Strategy included in the bioeconomy sector.

#### **4.2. The relation between scientific research and/or artistic creation and the study process, including the description and assessment of the use of the outcomes in the study process.**

In the implementation of research projects, master's students also participate by developing their Master's theses. The competencies acquired in project development are the basis for the Master's thesis topic offer. For example, the findings of the EUROLEGUME project (European 7th Framework Program project) provided an opportunity to develop a Master's thesis "New bean spreads for vegetarians". The competencies acquired in the projects of the National Research Program (AgroBioRes) provided an opportunity to develop the following Master's theses "Fructo-oligosaccharides in rye bread" and "The study of galacto-oligosaccharides", "Development of new gluten-free pasta". Within the framework of the project "Scientifically proven fermented milk products production from organic milk and their clinical studies" funded by the EAFRD (European Agricultural Fund for Rural Development) was developed a Master thesis "Vitamin D3 enriched dairy products in diet", within the framework of the LLU program project "Fatty acid composition variations in human milk" a Master thesis "Fatty acid composition in human milk" has been developed.

The findings gained in the implementation of the projects have initiated the lecturers to improve the courses "Technology of Food Products", "Novel Foods and Genetically Modified Organisms", "Organic Agriculture Food Products", etc.

Every four years, the implementers of the joint academic master's study programme organize an international scientific conference "Nutrition and Health", in which sections (Nutrition Policy and Public Health and Epidemiology, Nutrition Science, Diet, Nutrition and Prevention of Chronic Diseases, Nutrition During Human Life, Health Relevant Food Products, Food Quality and Safety) Latvian and foreign scientists, European health policy makers, graduates and students of the study programme, lecturers of the study programme, doctoral students in various fields (chemistry, food, medicine) present their research results. The topics of the conference programme sessions are very similar to the main modules included in the study programme plan and provide an opportunity to strengthen the latest knowledge in this area with the theoretical knowledge acquired in the study courses, providing a broader vision for students.

#### **4.3. Description and assessment of the international cooperation in the field of scientific research and/or artistic creation by specifying any joint projects, researches, etc. Specify**

**those study programmes, which benefit from this cooperation. Specify the future plans for the development of international cooperation in the field of scientific research and/or artistic creation.**

The main international research activities of the academic staff included in the study direction are:

- 1) participation in Interreg projects;
- 2) participation in FP7 projects;
- 3) participation in Horizon2020 projects;
- 4) participation in COST activities;
- 5) participation in ERASMUS + (KA2) programme projects, etc.

Academic staff participates in various international organizations: *Nordic Association of Agricultural Scientists, L'Oréal For Women in Science Baltics, Whole Grain Initiative*, etc.

The academic staff involved in the study direction are:

- 1) members in the editorial boards of international scientific journals (*Rural Sustainable Research, Research for Rural Development, Problems of Quality, Millennium Journal of Education, Technologies and Health, Journal of Microbiology, Biotechnology and Food Science, Journal of Academic Food*);
- 2) experts in the evaluation of national and international projects;
- 3) experts in international organizations and institutions.

Participation in international organizations, editorial boards of scientific journals, various international projects and expert work promotes the dissemination of research results, integration of research findings into study courses, student involvement in research projects and information of students about research trends in the field, including food industry activities, student involvement in international events (organization and participation in conferences, etc.). Various activities promote cooperation and exchange of experience between lecturers and students.

Further cooperation is aimed at more intensive involvement of students in research, acquiring LLU grants, publishing research findings in scientific journals, integration of research results into the study process, development of new research project applications, actively involving specialists from all fields of partner universities.

**4.4. Specify the way how the higher education institution/ college promotes the involvement of the teaching staff in scientific research and/or artistic creation. Provide the description and assessment of the activities carried out by the academic staff in the field of scientific research and/or artistic creation relevant to the study direction by providing examples and the summary of the quantitative data on the activities in the field of scientific research and/or artistic creation relevant to the study direction over the reporting period, for instance, the publications, participation in conferences, activities in the field of artistic creation, participation in projects by the academic staff members, etc., by listing the aforementioned according to the relevance.**

The research work of the academic staff is related to the delivered study courses, scientific interests, and current events in the field of food and nutrition, the approved priority scientific directions at LLU.

Involvement of study programme lecturers in research is organised through:

- 1) calls for research programme and project proposals;
- 2) invitation to participate in the preparation of project applications and implementation of projects from cooperation partners (Latvia, foreign countries);
- 3) organization of international scientific conferences, participation in international scientific events;
- 4) cooperation developed within the framework of mobility;
- 5) personal contacts, etc.

Lecturers of the study direction prepare and publish articles in the issues that are indexed in SCOPUS and Web of Science (WoS) databases, anonymously reviewed international publications, conference proceedings, prepare study materials, books, scientific monographs. LLU lecturers involved in the implementation of the study programme have prepared 154 publications in the reporting period, including 121 published in editions indexed in the SCOPUS and WoS databases. The results are published in the following issues:

- 1) publications in journals on medicine and nutrition science: *Nutrients, Medicina, International Breastfeeding Journal, Annals of Nutrition and Metabolism, Public Health, Journal of Food & Nutrition and Population Health*;
- 2) food journals: *Foods, Innovative Food Science & Emerging Technologies, Croatian Journal of Food Science and Technology, European Food Research and Technology, International Journal of Food Science and Nutrition, Current Nutrition & Food Science, Nutrition and Food Science*;
- 3) publications in journals on chemistry, agriculture and the environment: *Chemical Technology, Acta Horticulturae, Agronomy Research, Sustainability, Journal of Food, Agriculture and Environment*.

Academic staff actively participates in scientific conferences (in Latvia and abroad), are international conference organizers (FoodBalt, Nutrition and Health).

The academic staff involved in the implementation of the joint master's study programme participates in the implementation of national and international projects, the following examples illustrate the activities and involvement of LLU lecturers in research:

1. In the implementation of the projects of the National Research Programme "Agricultural Resources for Sustainable Production of Qualitative and Healthy Foods in Latvia" (AgroBioRes, 2014-2018)", participated 12% of the lecturers of the master's study programme;
2. 7th Framework project FP7 KBBE 2013-7-613781 "Legume Breeding and Management for Sustainable Agriculture as well as Protein Supply for Food and Feed (EUROLEGUME)" (2014-2017), participated 2% of lecturers of the master's study programme;
3. The project of the EEA Norwegian Financial Mechanism NFI/R/2014/11 " Innovative approach to hull-less spring cereals and triticale use from human health perspective" (2015-2016), participated 2% of the lecturers of the master's study programme;
4. The COST Action CA18101 project "Sourdough biotechnology network towards novel, healthier and sustainable food and bioprocesses" (2018-2021), participate 2% of the lecturers of the master's study programme;
5. CI&CIDETS Research Centre project "Psychosocial motivations associated with food choices and eating practices" (2016-2019), participated 2% of the lecturers of the master's study programme;
6. ERANET project ERASysAPP "Systems biology platform for the creation of lean-proteome *Escherichia coli* strains" (2015-2018), participated 2% of the lecturers of the master's study programme;

7. European Maritime and Fisheries Fund project 16-00-FP1101-000005 "Production of structured fish forcemeat from Baltic sea fish and its use in fish products" (2017-2018) was implemented by 7% of lecturers of the master's study programme.

Research projects are implemented in cooperation with the partners of the joint academic master's study program "Nutrition Science", for example, Latvia University of Life Sciences and Technologies and Riga Stradins University:

1) EAFRD project No.19-00-A01612-000009 "Scientifically proven fermented milk products production from organic milk and their clinical studies", implemented by various cooperation partners, including Latvia University of Life Sciences and Technologies, Rīga Stradiņš University, Latvian Association of Diet and Nutrition Specialists, etc.;

2) EAFRD project no. 18-00-A01612-000006 "Development of Innovative Medicinal Food for Patients of Malnutrition/Dysphagia, Creating a New, Nationally Significant Product With a High Added Value", implemented by various partners, e.g.: Latvia University of Life Sciences and Technologies, Latvian Association of Dieticians, including RSU lecturers, etc.

LLU has developed and successfully evaluates the performance of leading researchers and researchers, which is the basis for determining the remuneration of scientific performance, especially by promoting the preparation of high-level publications. All LLU lecturers who participate in the implementation of the study programme are elected leading researchers.

In general, the activity of the academic staff involved in the implementation of the study direction in scientific research is high, see the list of scientific publications and projects in Annex 5. *List of publications and patents (LLU)*.

**4.5. Specify how the involvement of the students in scientific research and/or artistic creation activities is promoted. Provide the assessment and description of the involvement of the students of all-level study programmes in the relevant study direction in scientific research and/or artistic creation activities by giving examples of the opportunities offered to and used by the students.**

Student involvement in research is an integral part of the study process and important for the development of research in the study direction. Involvement is provided by:

- 1) development of Master's theses based on research in a specific topic / project or topicality in nutrition science;
  - 2) presentation of the research results at conferences: scientific students conference of the Faculty of Food Technology, LLU International scientific conference "Students on their Way to Science", the International scientific conference "Nutrition and Health", organized by LU, RSU and LLU etc.
  - 3) publication of research results in the abstract collections of the above-mentioned conferences, etc.
  - 4) participation in conferences organized by LU, RSU and LLU (separately or jointly) as a listener.
- The involvement of students in research (projects) is facilitated by the supervisor of the Master's thesis or the lecturer of the study course, employing the student as a research assistant, laboratory assistant, also a volunteer.

For example, during the academic year 2019/2020, LLU lecturers from the study direction have been involved in the implementation 19 projects, master students were involved in the

implementation of 3 projects. By working on the project, the master student acquires research experience, responsibility, the ability to meet the set deadlines, the opportunity to develop a Master thesis. These master students are also active speakers at conferences of various levels. Academic staff of the study direction has the opportunity to obtain grants announced by the research program of the LLU, such as "Strengthening the Scientific Capacity of the LLU" or "Fundamental Research", etc., aimed at promoting the involvement of young scientists, doctoral and master students. The majority of LLU lecturers (60%) who participate in the implementation of the joint master's study programme have acquired funding for this activity and actively employ doctoral students and also master students. During the academic year 2019/2020, one LLU Scientific Capacity Strengthening project was implemented, in which the student of this study programme took an active part in developing the Master's thesis "Fatty acid composition in human milk" (the thesis was defended in May 2021).

When preparing project applications, the academic staff envisages the possibility to employ both doctoral and master students. In case of a successful start, the student is invited to implement the project. An example of such a practice is the involvement of the LLU master student in the grant of the Latvian Council of Science "Excess weight, dietary habits and vitamin D and omega 3 fatty acid status in pregnancy" (2020-2022), which is implemented by an RSU lecturer. As a result of cooperation, the master thesis "Vitamin D status in pregnant women in Latvia" (2021) has been developed and defended.

With the support of the LLU Technology Transfer Department, the development of contract projects initiated by merchants and implemented by a scientific institution is promoted, preparing product prototype(s) for implementation in industry. For example, a Master's thesis "Possibilities of using pea flour in the production of gluten-free pasta" has been developed.

**4.6. Provide a brief description and assessment of the forms of innovation (for instance, product, process, marketing, and organisational innovation) generally used in the study direction subject to the assessment, by giving the respective examples and assessing their impact on the study process.**

In study direction LLU applies various forms of innovation - marketing innovations, organizational innovations, process innovations, product innovations.

LLU uses a wide range of **marketing** tools (microblogging platform, various social networks, photo and video sharing application, YouTube, etc.) to address applicants and inform students. The websites of LLU and the Faculty have been renewed and improved (unified style, structure), which facilitates the search for information, advertising campaigns are dominated by digital media, LLU Express news created on the LLU portal, also online Open Door Days.

During the reporting period, the organization of e-studies was improved (**process innovations**), there is the emphasis on conducting classes in e-studies (video lectures), which can be recorded and listened again for a better understanding of the topic. During online classes, students can present independent work, participate in seminars, discussions and group work, submit homework, assignments, take tests using tools of e-studies. In the e-studies environment, descriptions of the study courses, necessary materials, self-control questions, and links to some topical information for learning study course topics are available. Lecturers create a book of students' assessments (performance), which students (individually) can follow the course, also individual communication and explanation of the assessments. The administration of the e-studies environment at the

university is well organized, the administrator's consultations are available (in person, online or by correspondence), instructions and advice on issues related to the use of e-studies are available. Such a system is implemented for each cooperation partner (LU, RSU), there are small technical differences (different platforms are used). Students of the study program quickly learn and manage the different principles of e-studies in partner universities.

LLU has established the LLU Information System (LLU IS) (**organizational innovations**), which is a unified database of students and lecturers. This system allows to digitize several processes and document processing (certificates, orders, study agreements, their amendments, preparation of diplomas, input of grades – learning outcomes, collection of statistical data). LLU IS is integrated with e-environment and personal account, which provides students with information on progress, finances, obtained CP, application for Part B courses, assessment of lecturers, uploading the final theses, the account is aligned with the plagiarism tool for evaluation of the final thesis. The lecturer's account is aligned with the publication catalogue of lecturers and researchers created by the LLU Fundamental Library, lecturers can see the timetable, lists of students, review final theses, etc. A similar Information System has been introduced in partner universities (LU and RSU), it should be noted that LU and LLU systems are identical.

To improve work efficiency, LLU provides electronic applications for master studies for LLU undergraduate program graduates. To improve the efficiency of the document circulation in 2018 the document management system DVS Namejs was introduced, which ensures the management of correspondence, orders, contracts, certificates, procurement documents.

LLU students, lecturers and administrative staff are provided with a developed IT infrastructure and e-studies environment, which is a continuous process of further improvement for the rapid growth and development of this field.

Innovative solutions (**product innovation**) are introduced in the implementation of study courses, integrating research findings into studies. In the development of Master theses, students have the opportunity to implement innovations in research by learning new, modern analytical equipment for obtaining research results (for example, gastrointestinal tract simulation equipment, understanding its basic principles and data processing and discussion), etc.

## **II - Description of the Study Direction (5. Cooperation and Internationalisation)**

**5.1. Provide the assessment as to how the cooperation with different institutions from Latvia and abroad (higher education institutions/ colleges, employers, employers' organisations, municipalities, non-governmental organisations, scientific institutes, etc.) within the study direction contributes to the achievement of the aims and learning outcomes of the study direction. Specify the criteria by which the cooperation partners suitable for the study direction and the relevant study programmes are selected and how the cooperation is organised by describing the cooperation with employers. In addition, specify the mechanism for the attraction of the employers.**

In the study direction, cooperation takes place with governmental and non-governmental organizations, professional associations, universities, scientific institutions and food producers. The main types and directions of cooperation:

- sector policy development - cooperation with state institutions, non-governmental and professional organizations - lecturers of the study program, working in the Latvian Association of Diet and Nutrition Specialists and the Latvian Association of Nutritionists and the Nutrition Council of the Ministry of Health, actively participate in drafting normative documents, coordinating decisions and opinions, e.g., Regulations of the Cabinet of Ministers No. 127/2017 "Amendments to Cabinet Regulation No. 172 of 13 March 2012" "Regulations Regarding Nutritional Norms for Educatees of Educational Institutions, Clients of Social Care and Social Rehabilitation Institutions and Patients of Medical Treatment Institutions", also "Childhood Obesity Action Plan 2014-2020", "Latvian Guidelines on Healthy Eating for Pregnant Women", "Differentiation of Excise Duty on Sweetened Non - Alcoholic Beverages and Application of Excise Duty on Food Supplements", "Distribution of Dietary Food in Retail Bulk". In accordance with the Public Health Guidelines for 2014-2020, and 2021-2027, the recommendations for a healthy diet (Ministry of Health Order No. 212 (24.11.2017.) "Recommended Energy and Nutrient Intakes") are being developed, based on the latest nutritional knowledge and the Nordic dietary recommendations;
- implementation of the study process with the support of employers and industry specialists - representatives of the state institutions (specialists of the Public Health Department of the Ministry of Health), leading specialists (gastroenterologists, obstetricians, nutritionists, etc.) participate in teaching study courses or parts thereof, employers are members of the Master's Examination Commission, etc.;
- cooperation with scientific institutes - an opportunity to develop a Master thesis using research opportunities/base (Institute of Horticulture, Scientific Institute of Food Safety, Animal Health and Environment Bior, LU Institute of Microbiology and Biotechnology, LU Biomedical Research Centre, etc.);
- organization of international scientific events (conferences, congresses) - implementers of the joint academic master's study programme, in cooperation with long-term supporters (Latvian Bakers' Association, Food Union, Ltd Lāči, Ltd Puratos Latvija, etc.), organize the international scientific conference "Nutrition and Health", LLU also hosts the Baltic Conference on Food Science and Technology "FoodBalt", which is organized in cooperation with Kaunas University of Technology and Tallinn University of Technology;
- evaluation of the content of the study program - employers (Ministry of Health, Latvian Centre for Disease Prevention and Control), industry professional associations (Latvian Association of Diet and Nutrition Specialists), as well as foreign experts (Wageningen University) participate in the evaluation of the study program content;
- other co-operation - activity in Councils of Professors of other higher education institutions (Council of Professors of Chemistry of the University of Latvia), cooperation with RSU, implementing the bachelor's study program "Nutrition", thus ensuring continuity of studies in this field.

Cooperation partners are selected according to the study direction profile – nutrition, nutrition science, nutrition and health. Cooperation is organized in different ways, participation in projects, drafting of regulatory acts, the teaching of study courses or parts thereof, organisation of international scientific conferences, external evaluation of the study programme, identification of the performance and weaknesses of the programme, employment of graduates, etc. Employers attracting is organized as follows:

- 1) program expertise from the point of view of employers;
- 2) employer surveys;
- 3) participation of employers in the implementation of the study programme (lectures, material basis for the studies, including the development of master's thesis, management of master's thesis,



recommendation of master's thesis topics, etc.);

4) sponsors of the international scientific conference "Nutrition and Health".

The LLU Internationalization Plan, developed in 2015, sets priorities and also envisages cooperation with universities of similar study and research direction in the EU and other countries, the field and direction of which correspond to this study direction or food field. The offer of international cooperation is rich, LLU focuses on those partners with whom cooperation is long-lasting and productive. The list of universities with which ERASMUS+ agreements have been concluded is available at [https://www.llu.lv/sites/default/files/2018-10/LLU%20ligumi%20\\_Erasmus%2B%2B%20partneraugstskolas\\_HEIs%2027.03.18.xls](https://www.llu.lv/sites/default/files/2018-10/LLU%20ligumi%20_Erasmus%2B%2B%20partneraugstskolas_HEIs%2027.03.18.xls).

Information on the concluded cooperation agreements can be found in Annex 2. *The list of cooperation agreements (LLU)*.

## **5.2. Specify the system or mechanisms, which are used to attract the students and the teaching staff from abroad and provide a description of the dynamics of the number of the attracted students and the teaching staff.**

In the study direction, the joint academic master's study programme "Nutrition Science" in Latvian is being implemented, foreign students have not studied in this programme, also those entering within the framework of ERASMUS + mobility.

LLU, which is a partner university for the implementation of the joint programme, implements also education for foreign students. The LLU portal provides information on the enrolment process, see <http://www.llu.lv/en/how-to-apply>, also information on the immigration procedure see <http://www.llu.lv/index.php/en/immigration> and other. In order to attract foreign students, LLU implements various marketing activities, agreements are concluded with recruitment agents, providing for the evaluation of their work efficiency, e-marketing, participation in international education fairs, agent forums. LLU is a member of the Latvian Higher Education Export Association (AIEA) and participates in its organizing activities. In order to attract foreign students in general, LLU provides information on the study programmes offer in English, see <http://www.llu.lv/en/degree-programmes>, where a detailed description of each programme is provided, including the study plan, for example, [https://www.llu.lv/sites/default/files/2017-03/Master\\_Food%20Science\\_2017\\_18.pdf](https://www.llu.lv/sites/default/files/2017-03/Master_Food%20Science_2017_18.pdf).

The mechanism for the popularization of LLU studies is implemented with the participation of ERASMUS + mobility programme, where LLU students and lecturers are ambassadors of the university, also incoming students and lecturers entering within ERASMUS + mobility, LLU foreign students are LLU promoters.

Also the project No. 8.2.2.0/18/A/014 "The Strengthening of LLU Academic Staff " (2019-2021) implemented by LLU helps to attract foreign professors in the realisation of the study process.

Projects implemented by the LLU, their funding, as well as the possibilities for the implementation of remote studies online, are used to attract foreign teaching staff, joint project applications are prepared, for example, the implementation rules of the European Economic Area Financial Instrument and the Norwegian Financial Instrument for the period 2014-2021 programme "Research and Education" activities "Baltic Research Programme" and the implementing rules of

the activity "Scholarships", as well as providing research opportunities at the university.

Each cooperation partner ensures attracting foreign lecturers in the implementation of the study programme, in the 2019/2020 academic year a visiting professor at the LLU was employed, including conducting lectures in this programme. We strive for at least one foreign teaching staff to participate in the implementation of the study programme during the academic year.

The dynamics of foreign lecturers and LLU students are summarized in Annex 7. *The foreign lecturers in the joint master's study programme Nutrition Science* and Annex *The mobility of LLU students*.

**5.3. In the event that the study programme entails a traineeship, provide a description of the traineeship options offered to the students, as well as the provision, and work organisation. Specify whether the higher education institution/ college provides assistance in finding traineeships.**

***(Not applicable)***

**5.4. In the event that joint study programmes are implemented in the study direction, provide the justification of the creation of the joint study programmes and a description and assessment of the selection of the partnering higher education institutions by including information on the principles and the procedures for the creation and implementation of these joint study programmes. In the event that no joint study programmes are implemented in the study direction, provide a description and assessment of the plans of the higher education institution/ college for the creation of such study programmes within the study direction.**

Only one study programme is implemented in the study direction - the joint academic master's study programme "Nutrition Science". The direction report and the self-assessment report of the study programme have been prepared, providing the justification, the description of the partner universities, their responsibility and contribution to the implementation of the study program.

No other programmes are planned in this direction.

## **II - Description of the Study Direction (6. Implementation of the Recommendations Received During the Previous Assessment Procedures)**

**6.1. Assessment of the fulfilment of the plan regarding the implementation of the recommendations provided by the experts during the previous accreditation of the study direction, as well as the assessment of the impact of the given recommendations on the study quality or the improvement of the study process within the study direction and the relevant study programmes.**

In the previous accreditation of the study direction, evaluating the joint academic master's study

programme "Nutrition Science" of LU, RSU and LLU, the experts assessed the study direction programme as sustainable. To improve the quality of the study programme, experts provided recommendations and noted weaknesses. The following is a list of expert recommendations (see Annex 3), including overall recommendations to study direction "Health Care" in Latvia:

- 1) to strengthen lecturers' English language skills, to increase the teaching and research potential - accomplished;
- 2) to analyse labour market demand - accomplished;
- 3) to make greater emphasis on international cooperation, mobility, project implementation - accomplished;
- 4) to review the enrolment rules for the study program, taking into account the knowledge and skills of applicants from different fields - *accomplished*;
- 4) to improve the democratic principles in organization and implementation of the study programmes; the better involvement of students in the students' self-government is also desirable - not applicable;
- 5) to increase the funding of higher education institutions to fulfil their role as providers of study programmes in study direction "Health Care" - permanent;
- 6) to better use resources in areas where overlap might cause unnecessary fragmentation - not applicable;
- 7) the availability of European funding should be better advertised among administrators of the study programmes in study direction "Health Care" - not applicable.

In order to implement the recommendations and eliminate the weaknesses in the study programme, there was performed analysis of their significance in the context of the programme from the need for immediate to gradual implementation, including the annual analysis and evaluation of the implementation of expert recommendations. The implementation of the recommendations is reflected in the annual self-assessment reports of the study direction "Health Care". The Table 6.1.1. summarises the implementation of expert recommendations and performance analysis.

Table 6.1.1

#### Execution of recommendations of study field experts

Recommendation	Description of execution / non - execution
1. To strengthen lecturers' English language skills	Improvement of foreign language skills of lecturers of the study direction has been implemented in each higher education institution. During the reporting period, LLU implemented ESF project no. 8.2.2.0/18/A/014 "The Strengthening of LLU Academic Staff" (2019-2021), which allowed to improve English language skills and pass an international English language proficiency test, obtaining a certificate of an appropriate level. A similar ESF project No.8.2.2.0/18/A/010 "Renewal of Academic Staff and Improvement of Competencies at the University of Latvia" (2019-2020) is implemented at the University of Latvia, improving professional English language skills and obtaining an English language proficiency certificate, also RSU - ESF project No. 8.2.2.0/18/A/013 "Strengthening the capacity of the academic staff of Rīga Stradiņš University" (2019-2020).

2. To review the enrolment rules for the study program, taking into account the knowledge and skills of applicants from different fields	<p>In the Part B in the 1<sup>st</sup> semester of the study programme, the knowledge compensating course "Fundamentals of Food Chemistry" is offered for strengthening the foundations of exact sciences for applicants from various fields. It is chosen by all students.</p> <p>Since academic year 2019/2020, the entrance examination for the enrolment of applicants has been renewed in order to assess the applicants' motivation, knowledge and form a strong group of students.</p>
3. Promotion of international cooperation, projects, mobility	<p>During the reporting period, the mobility of LLU lecturers has significantly increased, international cooperation in the field of studies and science with universities of European and Asian countries has been strengthened, and international scientific projects have been implemented.</p>
4. Labour market demand has not been assessed in the implementation of this programme	<p>During the reporting period, a study by Ltd Dynamic University (2019) on labour demand trends was implemented in the ESF project no. 8.2.3.0/18/A/009 "The Management Improvement of the Latvia University of Life Sciences and Technologies ". The study showed that the role of nutrition in health care as a branch of public health is growing. Nutrition Science shifts the focus of health from treatment to prevention and the development of healthy habits and disease prevention. Future trends in the sector are related to the strengthening of the role of health professionals in this field, increasing participation in public health policy planning, specialization, use of technology (simulations, data analytics) (Healthcare in Europe, <a href="https://ueg.eu/files/776/8c6744c9d42ec2cb9e8885b54ff744d0.pdf">https://ueg.eu/files/776/8c6744c9d42ec2cb9e8885b54ff744d0.pdf</a>).</p> <p>The forecasts of the Ministry of Economics in this group of programmes, in general, envisage a significant increase in labour demand by + <b>120% (2020-2030)</b>.</p>

During the reporting period, LLU has started ESF project no. 8.2.3.0/18/A/009 "The Management Improvement of the Latvia University of Life Sciences and Technologies" (2018-2021), within the framework of which the study direction programme was improved for the integration of the assessment of industry experts and foreign experts.

## 6.2. Implementation of the recommendations given by the experts during the evaluation of the changes to the relevant study programmes in the respective study direction or licensed study programmes over the reporting period or recommendations received during the procedure for the inclusion of the study programme in the accreditation form of the study direction (if applicable).

On 13 May 2015, the University of Latvia (LU), Rīga Stradiņš University (RSU) and the Latvia University of Life Sciences and Technologies (LLU) submitted a joint application to the Study Accreditation Commission requesting the recognition of the academic master's study programme "Nutrition Science" as a **joint study programme** within the meaning of Article 55.<sup>1</sup> of Law on Higher Education Institutions. The academic master's study programme "Nutrition Science" is

licensed as an inter-university study programme, which is jointly implemented by the University of Latvia, Rīga Stradiņš University and the Latvia University of Life Sciences and Technologies. In the accreditation documents of the study direction "Health Care" (2013) the joint programme of LU and LLU study programme "Nutrition Science" is indicated, but RSU indicates the academic master's study programme "Nutrition Science" and the place of study RSU - Riga. Decision of the Study Accreditation Commission, in accordance with Articles 28.5 and 28.7.1 of the Accreditation Regulations:

- 1) to recognize the academic master's study programme "Nutrition Science" corresponding to the study direction "Health Care" implemented by LU, RSU and LLU as a **joint** study programme;
- 2) to approve the place of implementation of the academic master's study programme "Nutrition Science" corresponding to the RSU study direction "Health Care", indicating that the study programme is implemented at LU - Riga, RSU - Riga, LLU - Jelgava.

The execution of recommendations is summarized in Annex 3 *Execution of recommendations of study direction experts*.

# Annexes

I. Information on the Higher Education Institution/ College		
List of the governing regulatory enactments and regulations of the higher education institution/ college	1_dala_1_pielikums_EN_Main internal legal acts and regulations (1).docx	1_dala_1_pielikums_Galveno_normativo_dokumentu_saraksts (8).docx
Information on the implementation of the study direction in the branches of the higher education institution/ college (if applicable)		
Management structure of the higher education institution/ college	Annex 2. LLU Management structure.docx	2. pielikums. LLU_pārvaldības_shēma.docx
II. Description of the Study Direction - 1. Management of the Study Direction		
Plan for the development of the study direction (if applicable)		
Management structure of the study direction	The structure of the management of the study direction Health Care.pdf	Studiju virziena pārvaldības struktūra.pdf
II. Description of the Study Direction - 3. Resources and Provision of the Study Direction		
Basic information on the teaching staff involved in the implementation of the study direction	Annex 3. Nutrition science_teaching staff.xlsx	3. pielikums. Uzturzinātne_mācībspēku_saraksts_LV (1).xlsx
Biographies of the teaching staff members (in Europass Curriculum Vitae format)	Nutrition science_teaching staff_CV_ENG.rar	Uzturzinātne_docētāju_CV_LV.rar
Summary of the statistical data on the incoming and outgoing mobility of the teaching staff over the reporting period	Annex 4. LLU lecturers and foreign lecturers mobility.pdf	4. pielikums. Ārzemju docētāju un LLU docētāju mobilitāte.pdf
II. Description of the Study Direction - 4. Scientific Research and Artistic Creation		
List of the publications, patents, and artistic creations of the teaching staff over the reporting period	Annex 5. List of publications and patents_LLU.pdf	5. pielikums. Publikāciju un patentu saraksts_LLU.pdf
II. Description of the Study Direction - 5. Cooperation and Internationalisation		
List of cooperation agreements	Annex 2. The list of cooperation agreements_LLU (2).pdf	2. pielikums. Sadarbības līgumu saraksts_LLU.pdf
Statistical data on the teaching staff and the students from abroad	Annex 7. Foreign lecturers in the joint master's study programme Nutrition Science.pdf	7. pielikums. Ārvalstu docētāji programmā.pdf
Statistical data on the mobility of students (by specifying the study programmes)	The mobility of LLU students.pdf	LLU studējošo mobilitāte.pdf
Description of the organisation of the traineeship of the students		
Information on the agreements and other documents confirming the traineeship of the students in companies		
II. Description of the Study Direction - 6. Implementation of the Recommendations Received During the Previous Assessment Procedures		
Overview of the implementation of the provided recommendations	Annex 3. Execution of recommendations of study direction experts.pdf	3. pielikums. Rekomendāciju izpildes pārskats.pdf
Description of the Study Programme - Other mandatory attachments		
Confirmation signed by the rector, director or the head of the study programme or the study direction of the higher education institution/ college which states that the official language proficiency of the teaching staff involved in the implementation of the relevant study programmes of the study direction complies with the regulations on the level of the official language knowledge and the procedures for testing official language proficiency for performing professional duties and office duties.	LLU confirmation_Health Care.pdf	LLU apliecinājums_Veselības_virzienam.docx
III. Description of the Study Programme - 1. Indicators Describing the Study Programme		
Compliance of the joint study programme with the provisions of the Law on Institutions of Higher Education (table)	4. pielikums. Kopīgās programmas atbilstība AL.pdf	
Statistics on the students over the reporting period		
III. Description of the Study Programme - 2. The Content of Studies and Implementation Thereof		
Compliance of the study programme with the State Education Standard		
Compliance of the qualification to be acquired upon completion of the study programme with the professional standard (if applicable)		
Compliance of the study programme with the specific regulatory framework applicable to the relevant field (if applicable)		
Mapping of the study courses/ modules for the achievement of the learning outcomes of the study programme	4. pielikums. Kopīgās maģistra programmas Uzturzinātne atbilstība Augstskolu likumam.pdf	
Curriculum of the study programme (for each type and form of the implementation of the study programme)		
Descriptions of the study courses/ modules		
Description of the Study Direction - Other mandatory attachments		
Sample of the diploma to be issued for the acquisition of the study programme.	4. pielikums. Kopīgās maģistra programmas Uzturzinātne atbilstība Augstskolu likumam.pdf	
Description of the Study Programme - Other mandatory attachments		
Document confirming that the higher education institution/ college will provide the students with the options to continue the acquisition of education in another study programme or at another higher education institution/ college (a contract with another accredited higher education institution/ college), in case the implementation of the study programme is discontinued		
Document confirming that the higher education institution/ college guarantees to the students a compensation for losses if the study programme is not accredited or the licence of the study programme is revoked due to the actions of the higher education institution/ college (actions or failure to act) and the student does not wish to continue the studies in another study programme		
Confirmation of the higher education institution/ college that the teaching staff members to be involved in the implementation of the study programme have at least B2-level knowledge of a related foreign language according to European language levels (see the levels under www.europass.lv), if the study programme or any part thereof is to be implemented in a foreign language.		
If the study programmes in the study direction subject to the assessment are doctoral study programmes, a confirmation that at least five teaching staff members with doctoral degree are among the academic staff of a doctoral study programme, at least three of which are experts approved by the Latvian Science Council in the respective field or sub-field of science, in which the study programme has intended to award a scientific degree.		

If academic study programmes are implemented within the study direction, a document confirming that the academic staff of the academic study programme complies with the provisions set out in Section 55, Paragraph one, Clause three of the Law on Institutions of Higher Education		
Sample (or samples) of the study agreement		
If academic study programmes for less than 250 full-time students are implemented within the study direction, the opinion of the Council for Higher Education shall be attached in compliance with Section 55, Paragraph two of the Law on Institutions of Higher Education.		
Description of the Study Direction - Other mandatory attachments		
Electronically signed application form for assessment of a study direction	IESNIEGUMS_Studiju_virziena_novertesana_l_veselibas_aprupe_EN.docx	iesniegums_studiju_virzienam_Veselibas_aprupe_novertesana_l.edoc

## Other annexes

Name of document	Document
LLU Dokumenti latviešu valodā	Dokumenti latviešu valodā-20210531.zip
LLU Documents in English	Documents in English-20210603.zip
Sadarbības līgums	Sadarbības līgums_LLU_LU_RSU.pdf
3. pielikums. Rekomendāciju izpildes pārskats.pdf	3. pielikums. Rekomendāciju izpildes pārskats.pdf
Annex 3. Execution of recommendations of study direction experts.pdf	Annex 3. Execution of recommendations of study direction experts.pdf
Kruma_CV_ENG.doc	Kruma_CV_ENG.doc



# Nutrition Science (45722)

Study field	<i>Health Care</i>
ProcedureStudyProgram.Name	<i>Nutrition Science</i>
Education classification code	<i>45722</i>
Type of the study programme	<i>Academic master study programme</i>
Name of the study programme director	<i>Inga</i>
Surname of the study programme director	<i>Ciproviča</i>
E-mail of the study programme director	<i>inga.ciprovica@llu.lv</i>
Title of the study programme director	<i>profesore Dr.sc.ing.</i>
Phone of the study programme director	<i>26523437</i>
Goal of the study programme	<i>The objective of the programme is to educate qualified nutritional specialists who have acquired in-depth theoretical and methodological knowledge and research skills to independently conduct research in the field of nutrition, food, food chemistry and toxicology, who are able to analyse, critically evaluate and generate new ideas and alternative approaches to nutrition and prevention of nutrition-related diseases.</i>
Tasks of the study programme	<i>1. To give students, through the study courses in the programme Compulsory part, the opportunity to acquire basic knowledge in nutrition, food and health sciences, and theoretical and methodological knowledge in research work.</i> <i>2. To provide opportunities for master students with different pre-knowledge, through the study courses in the programme Limited choice part, to acquire the basic courses included in the Compulsory part.</i> <i>3. To develop an understanding of the interrelationship of certain fields of science in solving nutritional issues.</i> <i>4. To educate specialists with critical thinking and analytical skills for health care institutions, research work, public health policy making, educational programs implementation.</i>

Results of the study programme	<p><i>Skills</i></p> <ol style="list-style-type: none"> <li><i>1. To be able to show an in-depth theoretical knowledge in the topics of nutrition science.</i></li> <li><i>2. Knows the need for nutrients depending on physical activity, physiological and health status.</i></li> <li><i>3. Knows regulation of biochemical processes in the human body.</i></li> <li><i>4. Knows nutrition and metabolism assessment methods and the importance of these methods for early detection of nutrient deficiency.</i></li> <li><i>5. To understand the multidisciplinary of nutrition science: the fundamentals of natural sciences, food and health sciences and the main cognitions, which are the basics for creative thinking and research in nutrition science.</i></li> <li><i>6. Knows data processing methods, terminology and their application in different researches.</i></li> <li><i>7. Knows the methods of epidemiological research planning, the functioning of the health care system, the sources of health data and the basic principles of performed researches.</i></li> </ol> <p><i>Skills</i></p> <ol style="list-style-type: none"> <li><i>1. To be able to independently carry out research work in nutrition, using theory, methods and problem-solving skills.</i></li> <li><i>2. To be able to explain and discuss the current issues in nutrition.</i></li> <li><i>3. To be able to apply various research methods in problems solving and to analyse and interpret the results of Master's thesis.</i></li> <li><i>4. To be able to recommend a scientifically proven balanced diet for different groups of people.</i></li> <li><i>5. To process the research results and questionnaires data, performing statistical data analyses.</i></li> <li><i>6. To analyse and evaluate the novel trends in food processing and food market, and healthy food aspect.</i></li> <li><i>7. To carry out epidemiological and sociological research, to identify and assess the risk factors related to diet and eating habits, to perform their analyses and to make a proposal for the situation improvement.</i></li> <li><i>8. To continue academic education in PhD studies.</i></li> </ol> <p><i>Competences</i></p> <ol style="list-style-type: none"> <li><i>1. To be able to independently formulate and critically analyse the complex problems in nutrition science.</i></li> <li><i>2. To be able to integrate the knowledge of different disciplines and sub-disciplines and contribute to the creation of new knowledge.</i></li> <li><i>3. To be able to demonstrate understanding and responsibility for the potential impact of nutrition research results on the environment and society.</i></li> <li><i>4. To be able to substantiate and explain nutrition issues and research issues related to nutrition and health, nutrition and physical activity.</i></li> <li><i>5. To plan and manage research in nutrition, promoting the competitiveness of programme graduates in the field of nutrition.</i></li> </ol>
Final examination upon the completion of the study programme	Master's thesis assessed with a mark.

# Study programme forms

## Full time studies - 2 years - latvian

Study type and form	<i>Full time studies</i>
Duration in full years	<i>2</i>
Duration in month	<i>0</i>
Language	<i>latvian</i>
Amount (CP)	<i>80</i>
Admission requirements (in English)	<i>Second level professional higher education in Medicine or Dentistry, Food technology, Veterinary medicine, Bachelor's or Master's degree in Biology, Chemistry, Environmental Sciences, Health Sciences (Nursing, Public Health, Occupational Therapy, Physiotherapy, Rehabilitology), Pharmacy, Food Science, Sports Pedagogy and Health Education, and other related fields.</i>
Degree to be acquired or professional qualification, or degree to be acquired and professional qualification (in english)	<i>Master Degree of Health Science in Nutrition Science</i>
Qualification to be obtained (in english)	<i>-</i>

## Places of implementation

Place name	City	Address
Latvia University of Life Sciences and Technologies	JELGAVA	LIELĀ IELA 2, JELGAVA, LV-3001

### **III - DESCRIPTION OF THE STUDY PROGRAMME (1. Indicators Describing the Study Programme)**

#### **1.1. Description and analysis of changes in study programme parameters that have taken place since the issue of the previous accreditation certificate of study direction or the license of study programme if study programme is not included in the accreditation page of the study direction**

The parameters of the study programme have not changed significantly since the accreditation, except for the clarification of the status and place of implementation of the master's study programme for one of the implementers of the program – Rīga Stradiņš University.

On 13 May 2015, the University of Latvia (LU), Rīga Stradiņš University (RSU) and the Latvia University of Life Sciences and Technologies (LLU) submitted a joint application to the Study Accreditation Commission requesting the recognition of the academic master's study programme "Nutrition Science" as a **joint** study programme (Law on Higher Education Institutions, Section 55.<sup>1</sup>). The academic master's study programme "Nutrition Science" is licensed as an inter-university study programme, which is jointly implemented by the University of Latvia, Rīga Stradiņš University and the Latvia University of Life Sciences and Technologies. In the accreditation documents of the study direction "Health Care" (2013) the joint programme of LU and LLU study programme "Nutrition Science" is indicated, but RSU indicates the academic master's study programme "Nutrition Science" and the place of study: RSU - Riga. Decision of the Study Accreditation Commission, in accordance with Articles 28.5 and 28.7.1 of the Accreditation Regulations. points:

- 1) to recognize the academic master's study programme "Nutrition Science" corresponding to the study direction "Health Care" implemented by LU, RSU and LLU as a joint study programme;
- 2) to approve the place of implementation of the academic master's study programme "Nutrition Science" corresponding to the RSU study direction "Health Care", indicating that the study programme is implemented at LU - Riga, RSU - Riga, LLU - Jelgava.

#### **1.2. Analysis and assessment of the statistical data on the students of the respective study programme, the dynamics of the number of the students, and the factors affecting the changes to the number of the students. The analysis shall be broken down in the different study forms, types, and languages.**

Only full-time students with state funding study in the study programme. During the reporting period (2013-2020), an average of 16 master students studied/are studying in the study programme at LLU. The number of students is quite stable, without significant falls and rises.

In accordance with Section 4.1 of the signed Cooperation Agreement, each of the co-operation higher education institutions matriculate 10 students by signing a study agreement. Student matriculation takes place in accordance with the Procedure for Enrolment, which is common to all cooperation partners. All matriculated students study together.

Table 1.2.1.

#### Number of matriculated students in the programme

University	2013./2014.	2014./2015.	2015./2016.	2016./2017.	2017./2018.	2018./2019.	2019./2020.
LLU	10	10	10	10	10	10	10
LU	10	15	10	10	10	10	10
RSU	14	10	10	10	10	10	10

Table 1.2.2.

#### Dynamics of the number of graduates in the programme

University	2013./2014.	2014./2015.	2015./2016.	2016./2017.	2017./2018.	2018./2019.	2019./2020.
LLU	4	7	7	7	9	3	3
LU	7	5	6	7	7	8	9
RSU	11	10	8	11	8	4	9

Table 1.2.3.

#### Number of students by study year at LLU

LLU	2013./2014.	2014./2015.	2015./2016.	2016./2017.	2017./2018.	2018./2019.	2019./2020.
1 <sup>st</sup> year	9	9	10	10	10	10	10
2 <sup>nd</sup> year	7	7	7	7	10	4	4

Analysing the reasons for dropping out of studies, they were more often deductions from studies to one's own will (12.5%), non-fulfilment of study program obligations (5%) and non-return from academic leave (3.75%). In recent years (2018/2019 and 2019/2020) there is a decreasing trend in the number of graduates, the reasons for which can be mentioned as the worsening of the COVID-19 situation (2019/2020), weak prior knowledge in exact sciences, as well as the inability to combine studies with work. Although the situation tends to stabilize, and in study year 2020/2021 there were 9 graduates (LLU) from the study programme.

### 1.3. Analysis and assessment of the interrelation between the name of the study programme, the degree or professional qualification to be acquired or the degree and professional qualification to be acquired, the aims, objectives, learning outcomes, and the admission requirements.

The parameters of the study programme (title, degree to be awarded, aim of the study programme, objectives, results to be achieved, admission conditions) are closely related.

The title of the study programme includes "Nutrition Science", which is an interdisciplinary field (a field based on the fundamental sciences (chemistry, biology) and medicine (anatomy, physiology), as well as the regularities of health sciences and food science in maintaining and strengthening human health.

The degree to be awarded - *Master of Health Sciences in Nutrition Science* is in accordance with the

nomenclature of science in Latvia and is closely related to the content of the study programme, results to be achieved, topics of Master's theses to be developed, research object - nutrition, its quality in health prevention.

The aim of the study programme is *to educate qualified nutrition science specialists who have acquired in-depth theoretical and methodological knowledge and research skills to independently conduct research in the field of nutrition, food, food chemistry and toxicology who are able to analyse, critically evaluate and generate new ideas and alternative approaches to nutrition and prevention of nutrition-related diseases*. The objectives defined for the implementation of the aim are closely related to the results to be achieved, which allows educating specialists for health care institutions, research work, public health policy makers, implementers of educational programs, etc., who are endowed with critical thinking and analytical skills.

Admission requirements for the program provide for the admission of applicants with appropriate education – 2<sup>nd</sup> level professional higher education in Medicine or Dentistry, Food technology, Veterinary Medicine, Bachelor's or Master's degree in Health Sciences (Nursing, Public health, Occupational therapy, Physiotherapy, Rehabilitation), Biology, Chemistry, Environmental Sciences, Pharmacy, Food Science, Sports pedagogy and Health Education, and other related fields. Applicants must take an entrance examination, which includes an update of nutrition-related issues. Students are matriculated on a competitive basis based on the weighted average mark in the undergraduate education document and the results of the entrance examinations.

### **III - DESCRIPTION OF THE STUDY PROGRAMME (2. The Content of Studies and Implementation Thereof)**

**2.1. Assessment of the relevance of the content of the study course/ module and the compliance with the needs of the relevant industry and labour market and with the trends in science. Provide information on how and whether the content of the study course/ module is updated in line with the development trends of the relevant industry, labour market, and science. In case of master's and doctoral study programmes, specify and provide the justification as to whether the degrees are awarded in view of the developments and findings in the field of science or artistic creation.**

The study programme includes **the compulsory part** (Part A) and **the limited choice part** (Part B). Part A is mandatory, Part B is elective. Part A study courses are systematized in modules (modules 7). Elective courses are subordinate to these modules. The course modules are implemented by the cooperating higher education institutions based on the competence of the higher education institution in the field of responsibility: LLU - food, RSU - nutrition and health, LU - natural sciences and health.

LLU is responsible for the implementation of the module "Basics of Food Production", assessing the competence of LLU for the implementation of the study process in the field of food, research and consulting activities.

LU is responsible for the implementation of the modules "Food and Nutrient Chemistry", "Clinical Nutrition", "Public Health and Epidemiology" and "Human Physiology and Nutrition", assessing the competence of the University of Latvia in the field of medicine and natural sciences, research, etc.

RSU is responsible for the implementation of the modules "Nutrition and Nutrition Policy", "Nutrition during a person's lifetime", taking into account the competence of RSU in the implementation of studies in the field of medicine and public health, research and consulting work in the implementation of Latvian nutrition policy.

Table 2.1.1.

The universities contribution to the limited choice study courses realisation

Course	Responsibility	Semester
<i>PārZ5024</i> Fundamentals of food chemistry	LU	1 <sup>st</sup>
<i>PārZ5004</i> Food supplements and additives	LU & LLU	1 <sup>st</sup>
<i>Ekon5066</i> Consumer and food marketing	LLU	2 <sup>nd</sup>
<i>Medi5001</i> Human anatomy	LU	1 <sup>st</sup>
<i>Medi5017</i> Practical aspects of diet therapy	RSU	3 <sup>rd</sup>
<i>PārZ5016</i> Food packaging	LLU	2 <sup>nd</sup>
<i>Medi6006</i> Obesity and its treatment	RSU	3 <sup>rd</sup>
<i>Medi5008</i> Nutrition for diseases prevention	RSU	2 <sup>nd</sup>
<i>PārZ5037</i> Food microbiology	LU	1 <sup>st</sup>
<i>PārZ5011</i> Organic agriculture food products	LLU	2 <sup>nd</sup>
<i>Ķīmi5004</i> Drinking water	LU	1 <sup>st</sup>
<i>Medi5005</i> Nutrition intolerance and allergies	LU	2 <sup>nd</sup>

Limited choice study courses are offered for selection at the beginning of the semester. The study course is implemented if not fewer than 10 students have chosen it.

The content of the study courses included in the study programme corresponds to the field of nutrition science, public health needs, health care findings and new trends. The content of the courses is constantly updated, as the courses are implemented by lecturers with their academic and research work related to the topic of the course, professionals in the field, who practically solve issues related to the topic of the course on a daily basis. For example, the study course "Nutrition Policy and Nutrition" is implemented by specialists from the Public Health Department of the Ministry of Health. The study courses "Medical nutrition in the treatment of acute diseases" and "Medical nutrition in the treatment of chronic diseases" are implemented by doctors-clinicians or lecturers, whose scientific work is related to this topic. The study courses "Food Technology" and partly "Novel Foods and Genetically Modified Organisms" are implemented by the Faculty of Food Technology of the Latvia University of Life Sciences and Technologies.

Updating the content of the courses in accordance with the tendencies of nutrition science is promoted and ensured by the scientific work of the lecturers (State research program projects, LZZP projects, LLU funded projects, ESF and ERDF projects, 7th Framework projects, etc.). Science-based knowledge is incorporated into study courses. In addition, the implementers of the joint master's

study programme, in cooperation with graduates and industry specialists, are organizing the international scientific conference "Nutrition and Health", which has already taken place 3 times (in 2012, 2016 and 2020). The aim of the conference is to provide an opportunity for scientists, students of the joint master's study programme "Nutrition Science", nutrition, food and health specialists to get acquainted with research results, give lectures by leading European nutritionists and health policy makers, highlighting nutrition trends and the current international context.

When defending a Master's thesis, the awarding of a Master's degree in health sciences is based on the findings of nutrition science, especially showing the contribution of the developed work in this field.

**2.2. Assessment of the interrelation between the information included in the study courses/ modules, the intended learning outcomes, the set aims and other indicators, the relation between the aims of the study course/ module and the aims and intended outcomes of the study programme. In case of a doctoral study programme, provide a description of the main research roadmaps and the impact of the study programme on research and other education levels.**

The information included in the study courses (aim, results to be achieved) is closely related to the aim, objectives and results to be achieved of the study programme (see in Annex 8 *The mapping of the joint master's study programme "Nutrition Science" study courses*).

The Master's study programme consists of **compulsory part** (Part A) and **limited choice part** (Part B). Part A of the programme consists of 7 modules, which consist of separate study courses according to the topics of the modules. In addition, the sequence of modules provides a logical acquisition of knowledge, where what is acquired in one module is the basis for the understanding and application of the next.

Part A modules:

Module 1. **Nutrition and nutrition policy** - provides knowledge and understanding of nutrition policy issues, the impact of nutrition as an important factor in health prevention.

Module 2. **Food and Nutrient Chemistry** - provides basic knowledge for all courses. The courses in Part B subordinate to Module 2 are Nutritional Supplements and Food Additives, Drinking Water, Theoretical Foundations of Food Chemistry.

Module 3. **Basics of food production** - provides knowledge and scientific research skills in the field of food, its composition, its variability, product development, health effects. The courses under Part B of Module 3 are Consumer and Food Marketing, Food Packaging, Organic Agriculture Food Products, Food Microbiology.

Module 4. **Human physiology and nutrition** - provides a basis for understanding the physiological processes in the human body. The course in Part B, subordinate to Module 4, is Human Anatomy.

Module 5. **Nutrition during a person's life** - gives understanding and methodological knowledge of the role of nutrition and its composition in disease prevention and health promotion. The study courses of Part B subordinate to Module 5 are Nutrition in Disease Prevention, Obesity and its Treatment, Practical Aspects of Nutrition Therapy.



Module 6. **Clinical Nutrition** - provides understanding and methodological knowledge of the importance of nutritional therapy in the prevention of certain diseases. The study courses of Part B subordinate to Module 6 are Nutritional Intolerances and Allergies, Metabolic Syndrome and Basic Principles of Medical Nutrition Therapy.

Module 7. **Public health and epidemiology** - provides an understanding of the application of science-based research programmes in monitoring, forecasting, etc. of public health and epidemiology, etc.

Part A module courses provide master students with basic knowledge, methodological and research skills in nutrition science. Part B elective courses provide an opportunity for master students with different prior knowledge (education) to acquire the knowledge necessary for full-fledged studies of the basic courses included in Part A modules. Part B courses also provide an in-depth basic course.

A logical sequence is provided for the acquisition of the courses included in the programme. For example, the acquisition of the study course "Theoretical Foundations of Food Chemistry" provides the knowledge and understanding required for the study course "Food Chemistry", while the knowledge and skills acquired in "Food Chemistry" are required for the study course "Human Biochemistry and Molecular Biology" and "Regulation of physiological processes in the human body". Knowledge and understanding of "Human Anatomy" are essential for the acquisition of courses related to health care and disease prevention.

The implementation of the study programme ensures the fulfilment of the aim and defined tasks, the achievement of study results and students' knowledge, skills and competencies in accordance with the 7<sup>th</sup> level of the Latvian qualification framework.

If the student has not acquired requirements specified in the Environmental Protection Law and the Civil Protection Law in the lower level study programme, the student acquires it additionally outside the study programme volume.

See information in Annex 9. *The study plan of the joint master's study programme Nutrition Science*.

**2.3. Assessment of the study implementation methods (including the evaluation methods) by providing the analysis of how the study implementation methods (including the evaluation methods) used in the study courses/ modules are selected, what they are, and how they contribute to the achievement of the learning outcomes of the study courses and the aims of the study programme. Provide an explanation of how the student-centred principles are taken into account in the implementation of the study process.**

In accordance with the internal regulatory enactments of LLU, in the joint master's study programme (2018-2020) the descriptions of study courses have been updated (each higher education institution determines its own procedure) in order to promote a student-centred study process with quality training. It includes innovative teaching methods, a supportive study environment, a study process based on study and research results, and ensures the study content, structure and interactivity of the study process corresponding to the aim and planned results of the study process. See Annex 10. *The summary of the joint master study programme "Nutrition Science" study courses* for the assessment of student achievements.

When formulating the results of the study course, the aim, objectives and study results of the study

programme (knowledge, skills and competences to be acquired in the course) are evaluated. In order to confirm that the study results formulated in the study courses and the programme are interrelated and achievable, the mapping of the study results is performed. The mapping of study results shows how the study courses fit into the study programme and ensure the achievement of the study programme aim, allowing to ascertain that the study results are achieved gradually and logically, that the results are interconnected, they correspond to the aim and objectives of the study programme.

Various methods are used to achieve study results: lectures, seminars, practical work, independent work, laboratory work, group work, reports, student discussions during seminars, exchange of experience, discussions between students.

Acquisition of study courses is assessed in a 10-point system in accordance with the regulatory enactments of the Republic of Latvia and the decision of the Senate of LLU on 10 June 2015 (No. 8-182), knowledge is assessed according to two criteria - qualitative and quantitative. A 10-point scale is used for the qualitative criterion, and the amount of the study course is expressed in credit points for the quantitative criterion. The course is considered successful if the grade is not lower than 4 (almost satisfactory). Compulsory attendance of seminars, practical work, laboratory work is specified in the acquisition of the study programme, see Annex 10 *The summary of the joint master's study programme "Nutrition Science" study courses*.

When evaluating the study results, evaluation principles of the Cabinet of Ministers of the Republic of Latvia Regulation No. 240/2014 "Regulations on the State Academic Education Standard" are taken into account: openness principle, evaluation review principle, evaluation obligatory principle, examination type diversity principle and compliance principle, including LLU Regulation of Studies.

In the implementation of the joint programme, each lecturer chooses the most suitable methods for the implementation of study courses, each cooperation partner has both a common and different approach in the selection of study implementation methods.

An integral part of the programme is the development and defence of a Master's thesis, in accordance with the LLU regulations on final examinations.

Table 2.3.1.

The universities contribution to the joint academic master's study programme implementation

The programme part	LU	RSU	LLU
Compulsory part, CP	26	12	6
Limited choice part, CP	6	4	4
Course paper, CP	2 CP (each university)		
Master thesis, CP	20 CP (each university)		
Total, CP	80 CP		

Studies are carried out together for all joint-universities students according to the study plan. In the 1<sup>st</sup> semester, students are studying at the University of Latvia, in the 2<sup>nd</sup> semester at the Latvia University of Life Sciences and Technologies and at Riga Stradiņš University, and in the 3<sup>rd</sup> semester at the University of Latvia and Riga Stradiņš University. Courses are scheduled in blocks, the duration of each study course is 8-12 weeks.

**2.4. If the study programme entails a traineeship, provide the analysis and assessment of the relation between the tasks of the traineeship included in the study programme and the learning outcomes of the study programme. Specify how the higher education institution/ college supports the students within the study programme regarding the fulfilment of the tasks set for students during the traineeship.**

**2.5. Analysis and assessment of the topics of the final theses of the students, their relevance in the respective field, including the labour market, and the evaluations of the final theses.**

The topics of the developed Master's theses are closely related to nutrition science, its interdisciplinarity, which includes medicine, health care, food development for special medical purposes, food development for disease prevention, research of certain nutrients important for human nutrition, food safety, etc. aspects. In the period from 2013/2014 until 2019/2020, 157 Master's theses have been developed and defended, of which 40 were LLU graduate theses (see the topics of the defended theses in Annex. *The themes of the defended master's theses\_2014-2020*).

Analysing the topics of the developed works, they can be conditionally divided into 3 groups:

- 1) nutrition and health;
- 2) nutrition and sports, nutrition and exercise;
- 3) nutritional quality, including nutrition research on foods.

A total of 87 thesis (55%) have been developed on the topic of nutrition and health, incl. 9 thesis by LLU master students (22.5%). Topics of the developed Master's thesis: *Vegan eating habits and bone density, Effects of apple fibre on lipid profile in people over 60 years of age, Assessment of eating habits in children aged 6 to 12 years and their relation to dental caries and bone density, Malnutrition recognition and treatment tactics in primary care, Possible nutritional deficiency and changes in anthropometric indicators in children with food allergies, Weight gain index and the course of pregnancy, Efficacy of the Weight Correction Program of the Children's Clinical University Hospital, Salt consumption in the Latvian population and factors affecting it, Malnutrition risk assessment of elderly people in home care, etc.*

19 thesis (12%) have been developed on the topics of nutrition and sports, nutrition and physical activity, incl. 3 thesis by LLU master students (7.5%). Topics of the developed Master's thesis: *Eating habits and insulin resistance indicators for children aged 9 to 10, Physical ability and metabolism during high-intensity training, Protein and fat diet impact on professional half marathon and marathon runners before competitions, Nutritional supplement use trends among Latvian athletes, etc.*

51 thesis (32%) have been developed on the topic of research on the quality of food, including the nutritional value of foodstuffs, incl. 28 thesis by LLU master students (70%). Topics of the developed thesis: *Research of galactooligosaccharides, Research of probiotic nutritional supplements, Occurrence of aminoglycoside class antibiotics in honey obtained in Latvia, Vitamin D<sub>3</sub> enriched dairy products in diet, Fibre evaluation in wheat and rye whole grain bread, etc.*

Table 2.5.1.

#### Average evaluation of Master theses (LLU)

Year	2013./2014.	2014./2015.	2015./2016.	2016./2017.	2017./2018.	2018./2019.	2019./2020.
Average rating	8.33	8.29	8.57	8.71	8.55	8.66	8.66

*evaluation in a 10-point system*

The developed Master's theses and their presentation confirm that the students have acquired knowledge, skills and competence in nutrition, which corresponds to the 7th level of the Latvian qualification framework. Master students know the theory of nutrition, are able to apply it in the practical solution of nutrition issues.

## **2.6. Analysis and assessment of the outcomes of the surveys conducted among the students, graduates, and employers, and the use of these outcomes for the improvement of the content and quality of studies by providing the respective examples.**

The vision of students, employers and graduates on the practical implementation of the study programme is important in assessing the quality of the joint master's study programme "Nutrition Science", which allows to understand the strengths and weaknesses, look for opportunities and solutions to improve the program performance.

The **survey of master students** was conducted in different study years, using the questionnaire developed by the Programme Council of the master study programme "Nutrition Science". The questionnaire was prepared for the analysis of the implementation of the study courses of each semester. Each questionnaire included questions on the evaluation of the work of the teaching staff, evaluation of the course content, form of knowledge test and compliance of the test with the course, evaluation and usefulness of study independent work, objections and criticism, also implementation of distance learning process within the study year 2019/2020.

The summary presents the results of the survey obtained in study years 2013/2014, 2016/2017 and 2019/2020.

Analysing the content, performance and acquired knowledge of the 1<sup>st</sup> semester study courses, the students have pointed out that they very much appreciate the implementation of the study courses "Human Anatomy", "Food Chemistry", "Regulation of Physiological Processes in the Human Body", noting the course style, practised methods, including the course of laboratory work at the Scientific Institute for Food Safety, Animal Health and the Environment Bior. The students noted that the love of the study course implementers for the work to be done and the desire to share knowledge is clearly visible.

Analysing the implementation of the 2<sup>nd</sup> semester courses, the students noted the well-structured course planning and their implementation, especially praising "Nutrition Intolerances and Allergies", "Nutrition and Exercise", "Basic Principles of Nutrition for Women at Different Periods of Life", "Food Technology", "Metabolic syndrome and eating disorders". Practical works that helped to acquire the course(s), involvement of professionals in the study process, work in the clinic, etc. were marked as positive.

Analysing the study courses of the 3<sup>rd</sup> semester, the students indicated that the courses in the 3rd semester are very interesting, important, but too intensive for acquisition. It is positive that in the

acquisition of certain courses (Medical nutrition in the treatment of chronic diseases, Practical aspects of Nutrition therapy) there were opportunities to visit clinics, analysing the patient's diet, getting acquainted and analysing the menus.

Regarding the shortcomings and weaknesses in the program, the students have noted:

- 1) a large amount of independent work, students want lecturers to discuss the results of intermediate examinations, trying to identify mistakes, there are objections to the lecturers of separate courses (analysis of the work of the 1st semester);
- 2) there is no unified study e-environment, it is separate for each higher education institution (analysis of the 2nd semester);
- 3) in some study courses there was a lack of nutrition aspect, there was a lack of practical classes in "Biological Statistics" (3rd semester).

Trying to find out the students' opinion about the quality of distance learning implementation and difficulties during the COVID-19 pandemic, several aspects came to light:

- 1) the implementers of the joint programme have successfully coped with the challenges for the implementation of distance learning, each higher education institution offered its own e-platform (ZOOM, Microsoft Teams, BigBlueButton);
- 2) higher psychological burden, more self-discipline and self-motivation for studies is needed;
- 3) by implementing such a program, it is possible to acquire full-fledged study courses;
- 4) the loss is practical classes, especially in clinics, which hindered a more complete acquisition of the course;
- 5) one of the basic facts - there will be a demand for such a form of study acquisition in the future.

Summarizing the students' opinion and the indicated shortcomings, the measures taken to improve the quality of the programme:

- 1) graduates of the study program have been invited to implement separate study courses;
- 2) a change of lecturers in the courses "Nutrition Policy and Nutrition" and "Human Biochemistry and Molecular Biology" has been implemented.

**Survey of graduates.** 40 graduates were interviewed during the study year 2014/2015 (50 questionnaires were sent out). In the questionnaires, we asked the graduates what is their connection with nutrition. The answers were dominated by the fact that 22 of the respondents (51%) deal with food and nutrition issues on a daily basis, 22 (51%) participate in informing the public about nutrition issues, 4 develop normative acts on nutrition issues, 6 work in education, etc.

Even after graduation, the masters appreciate (35) the content of the study programme, the professionalism of the teaching staff (38), the technical provision of the programme and, from the bottom of their hearts, wish luck in further progress in the implementation of the programme. At the same time, graduates note that they would like new study materials in nutrition, information and knowledge. In order to fulfil the opportunities indicated by the graduates, the implementers of the joint master's study programme have organized international scientific conferences "Nutrition and health 2016; 2020" with lectures by nutritionists and nutrition policy specialists, lectures by leading European nutritionists/scientists, etc., as well as professional organizations (e.g., Latvian Association of Diet and Nutrition Specialists) have initiated the organization of information seminars.

In the study year 2015/2016, 19 graduates of different years filled out the questionnaire evaluating the study process/programme. Graduates have indicated that the acquired education has promoted career growth and the opportunity to achieve professional self-realization. Students note the uniqueness of the programme, the research-based study process, the team of industry professionals in the implementation of the study process. It is really nice to get the graduates' knowledge that the programme has provided not only in-depth knowledge/understanding, but also

the opportunity to make full use of it in everyday work. The study programme allows to participate in the development of legislative acts.

Studies have given the ability to search, think, analyse, find solutions. The plus and uniqueness of this programme is the opportunity to study at 3 Latvian universities at the same time. From the knowledge and skills acquired during the studies it is necessary to highlight three:

- 1) a broader vision of the problems;
- 2) examination of causation;
- 3) critical analysis of information.

During the study year 2016/2017, 10 graduates gave feedback on the study programme. Assessing the satisfaction of graduates with what they have learned in the program, 30% were very satisfied, 50% were satisfied, 20% were almost satisfied. Analysing the answers of LLU, RSU and LU graduates, they are divided proportionally, namely, 33% of graduates work in the field of nutrition, 33% continue their work and 33% continue to study at a higher level.

The survey of graduates clearly confirms the fulfilment of the results to be achieved by the program.

Summarizing the graduates' opinion and the indicated shortcomings, the measures taken to improve the quality of the programme:

- 1) new study materials and textbooks are prepared;
- 2) international scientific conferences "Nutrition and health 2016; 2020" are organised.

**Employer survey.** Employers representing the Public Health Department of the Ministry of Health, the management of the Latvian Centre for Disease Prevention and Control, employers from the private sector, and heads of scientific institutions were interviewed about the knowledge, skills and competence of the graduates of the programme. The findings were dominated by the fact that graduates successfully integrate into the work environment, solve everyday situations related to nutrition issues, their work in the development of public health policy, development of guidelines and recommendations is of great importance.

Summarizing the employer's opinion, the measures taken to improve the quality of the programme:

- 1) involvement of specialists in the field in the implementation of the study programme;
- 2) targeted involvement of students in research.

Summary of the conducted surveys (especially employers and graduates) - the programme is able to provide a broader view of the problems, the causal links, critical analysis of information.

## **2.7. Provide the assessment of the options of the incoming and outgoing mobility of the students, the dynamics of the number of the used opportunities, and the recognition of the study courses acquired during the mobility.**

During the reporting period, students have participated in ERASMUS + mobility programmes in the joint master's study programme "Nutrition Science". Table 2.7.1. summarizes the mobility of LLU master students.

Table 2.7.1.

## Mobility of LLU students

Year	2013./2014.	2014./2015.	2015./2016.	2016./2017.	2017./2018.	2018./2019.	2019./2020.
Number of	-	2 (University of Helsinki)	1 (University of Agricultural Sciences and Veterinary Medicine of Cluj Napoca)	-	-	-	-

Master's students in ERASMUS + mobility have gone to the University of Helsinki (Finland) and the University of Agricultural Sciences and Veterinary Medicine of Cluj Napoca (Romania). In general, ERASMUS+ mobility in the programme is low, moreover also in the academic year 2019/2020, ERASMUS + partner universities refused to admit students. Before mobility, students coordinate the chosen study courses with the director of the study programme (prepare the *Intentional Protocol*), the choice of courses is implemented taking into account the study program plan and the interests of the student. The acquired study courses at ERASMUS partner university are LLU recognized by preparing the Recognition Protocol. If there are changes in the list of selected courses due to some unplanned reasons, the student makes a choice on the spot, coordinating it with the director of the study program.

During the reporting period, foreign students have not studied in the programme, the joint master's study programme "Nutrition Science" does not provide for such an opportunity.

### III - DESCRIPTION OF THE STUDY PROGRAMME (3. Resources and Provision of the Study Programme)

**3.1. Assessment of the compliance of the resources and provision (study provision, scientific support (if applicable), informative provision (including libraries), material and technical provision, and financial provision) with the conditions for the implementation of the study programme and the learning outcomes to be achieved by providing the respective examples. Whilst carrying out the assessment, it is possible to refer to the information provided for in the criteria set forth in Part II, Chapter 3, sub-paragraphs 3.1 to 3.3.**

**Financial provision.** The sources of financing of the joint master's study programme "Nutrition Science" are the state budget funds intended for the implementation of the study program; funding for the implementation of scientific infrastructure; science base funding; ERDF funding for the improvement of the material base. Considering that the study programme is implemented by LLU, RSU and LU and each higher education institution matriculates a certain number of students, each higher education institution receives state funding for the implementation of the programme. The

amount of state-funded study places for the University of Latvia is coordinated in an agreement with the Ministry of Education and Science, the amount of state-funded study places for Rīga Stradiņš University is coordinated in a tripartite agreement between the Ministry of Education and Science, the Ministry of Health and RSU. The amount of state-funded study places for the Latvia University of Life Sciences and Technologies (LLU) is coordinated in a tripartite agreement between the Ministry of Education and Science, the Ministry of Agriculture and LLU. The tripartite agreement on funding for 2020 stipulates that the basic costs of one study place are 1519.98 EUR, the study level coefficient for the master's programme is 1.5 and the social security of the study place for the master's programme is 164.34 EUR, the study cost coefficient for the joint master's study programme "Nutrition" is 3 (the Cabinet of Ministers Regulation No. 994/2006 "Procedures for Financing Institutions of Higher Education and Colleges from the Funds of State Budget"), the cost per student in this program is 6998.53 EUR.

Every year, the Senate of LLU approves the distribution of revenues and expenditures of the LLU General Budget, prepared in accordance with the Saeima annual law "On the State Budget" and the LLU Rector's Order "On LLU Budget Planning". The control and audit of the general budget is performed by a sworn auditor, whose opinion and report are reviewed and approved by the Senate of LLU.

Before approving the distribution of LLU general budget revenues and expenditures in the Senate, it is reviewed, discussed and approved by the Working Group on Resource Use and Development, which consists of Rector, Chancellor, Vice-rectors, Deans of all faculties, Head of Resource Accounting Centre/Chief Accountant, Head of Financial Planning, chief economists, chief specialists in real estate and legal issues.

The distribution of the total budget of LLU is formed by the estimates of structural units/faculties, where costs are estimated by types of expenditure.

In 2020, the share of costs of the joint academic master's programme "Nutrition Science" consisted of:

- remuneration - 74%;
- scholarships - 8%;
- goods and services 17%, incl. utilities 6%;
- share capital formation 1%.

State funding by years:

In 2019, within the framework of the tripartite agreement on state funding for the programme, the cost of one study place is 1518.98 EUR, the study level coefficient is 1.5 and the social security of the study place is 164.34 EUR, the education thematic area coefficient is 3, the cost per student in the programme is EUR 6998.05.

In 2018, within the framework of the tripartite agreement on state funding for the programme, the cost of one study place is 1458.51 EUR, the study level coefficient is 1.5 and the social security of the study place is 164.34 EUR, the education thematic area coefficient is 3, the cost per student in the programme is EUR 6724.84.

In 2017, within the framework of the tripartite agreement on state funding for the programme, the cost of one study place is 1393.33 EUR, the study level coefficient is 1.5 and the social security of the study place is 164.34 EUR, the education thematic area coefficient for the program is 3, the cost per student in the programme is EUR 6433.84.

Within the framework of the 2016 tripartite agreement on state funding for the programme, the cost of one study place is 1333.11 EUR, the study level coefficient is 1.5 and the social security of



the study place is 164.34 EUR, the education thematic area coefficient for the program is 3, the cost per student in the programme is 5230.81 EUR (financial provision only 84.45%).

In 2015, within the framework of the tripartite agreement on state funding for the programme, the cost of one study place is 1333.11 EUR, the study level coefficient is 1.5 and the social security of the study place is 164.34 EUR, the education thematic area coefficient for the program is 3, the cost per student in the programme is 5231.15 EUR (financial provision only 84.46%).

In 2014, within the framework of the tripartite agreement on state funding for the programme, the cost of one study place is 1333.11 EUR, the study level coefficient is 1.5 and the social security of the study place is 164.34 EUR, the education thematic area coefficient is 3, the cost per student in the programme is 5187.31 EUR (financial provision only 83.72%).

In 2013, within the framework of the tripartite agreement on state funding for the programme, it is determined that the cost of one study place is 1333.36 EUR, the study level coefficient is 1.5 and the social security of the study place is 164.34 EUR, the education thematic area coefficient is 3, the cost per student in the programme is 5244.17 EUR.

According to Section 5 sub-paragraph 5.4 of the Cooperation Agreement signed on 29 November 2004 and the Amendments of 13 March 2007 to the Cooperation Agreement, the cooperation partners shall implement the redistribution of state funding in accordance with the actual contribution of the cooperation higher education institution to the implementation of the study program (credit points - CP). Once a calendar year, the cooperating higher education institutions make inter-university settlements by mutual agreement. The redistribution of funding is based on the actual performance (CP) of each higher education institution, the number of Master's theses supervised.

The joint master's study programme "Nutrition Science" is implemented in all cooperating higher education institutions, using the material and technical base of higher education institutions, in accordance with the study plan and the signed Cooperation Agreement.

Three faculties of the **University of Latvia** are involved in the implementation of this programme - Faculty of Biology, Faculty of Chemistry and Faculty of Medicine. The study process mainly takes place in the LU House of Nature and in the LU House of Science (1 Jelgavas Street, Riga). All auditoriums have a projector, a laptop for presentations, large auditoriums have sound equipment and recording facilities. Wireless internet is available in the buildings. The study courses, which provide for laboratory work, take place in the laboratories of the Faculty of Biology, Chemistry and Medicine, which are equipped with the necessary equipment and data processing programs. LU has modern analytical equipment for the determination of various compounds, microbiological examinations, etc. (e.g., AESH equipment, flame atomic absorption spectrophotometer, collection of microorganisms and laboratory equipment for human microbiome research, bioreactors, equipment for evaluating the analgesic result in laboratory animals *in vitro*, cell damage analysis equipment, body mannequins for anatomy courses, etc.). Professionals (clinicians) also participate in the study process, students use the infrastructure of P. Stradins Clinical University Hospital, BKUS, Riga 1<sup>st</sup> Hospital, LU Institute of Microbiology and Biotechnology, Food Safety, Animal Health and Environmental Research Institute BIOR.

Students have at their disposal the resources of the University of Latvia Library with a rich repository of information resources. For example, Nutrition students can use 22 databases - Britannica online, Cambridge Journals Online (CJO), EBSCO Academic Search Complete, EBSCO eBook Academic Collection, EBSCO Health Source - Consumer Edition, EBSCO Health Source: Nursing/Academic Edition, EBSCO MasterFILE Premier, EBSCO MEDLINE, Emerald, ISI Web of Knowledge / Web of Science, Letonics, OECD iLibrary, Oxford Reference Online: Premium Collection,

Project MUSE, ProQuest Dissertations & Theses, SAGE Journals Online, Science Direct, Scopus, UpToDate.

LU students and lecturers have access to e-learning environment, where study materials, information about the study course, communication with students, evaluation of students' knowledge, etc. are located and students of co-operation universities (RSU and LLU) have access to library funds, e-studies.

The Faculty of Food Technology is involved in the implementation of this programme at the **Latvia University of Life Sciences and Technologies**. The study process takes place at the Study and Science Centre of the Faculty of Food Technology (22a Rīgas Street, Jelgava). A projector and a laptop for presentations is available in all auditoriums. Wireless internet is available in the building. **The material-technical provision** of the study program is able to ensure an efficient study process, including the development of Master's theses in selected topics. Master students have the opportunity to study independently and communicate with lecturers electronically using the e-environment. Study materials are placed in the e-environment, in the e-studies created by LLU, which are available on the website <http://estudijas.llu.lv/> Students of Cooperation Higher Education Institutions (RSU and LLU) have access to LLU e-studies.

For the preparation of the independent work, also for the development of the theoretical review of the Master's thesis, the Fundamental Library of LLU with a wide range of scientific literature and various databases is available at <http://llufb.llu.lv>. There are various options for searching for information. Databases created by the LLU Fundamental Library: "Electronic catalogue of the LLU Fundamental Library", "Publications of the Academic and Research Staff of the LLU", "Theses Presented at the LLU", "Journal and Conference Articles of Latvia University of Life Sciences and Technologies". Subscribed databases, e-journals, e-books: AGRIS, CABI abstract, CABI Animal Health and Product Compendium, CRC Press e-books, EBSCO e-book Academic Collection, EBSCO database, newspaper library, Letonika, ScienceDirect journals, SCOPUS, Escival, Web of Science, Wiley Online. The library's holdings in thematic areas (%) are as follows: agriculture (38%), natural sciences (10%), social sciences (24%), engineering (19%), other sciences (9%) and Internet resources (encyclopaedias, dictionaries), information search engines and portals (CiteseerX Scientific Literature Digital Library and Search Engine, Elsevier, Springer link, etc.). From June 11, 2012, the LLU Fundamental Library provides access to subscribed databases outside the LLU network with the EZproxy tool, using the LLU Information Systems or e-learning user account.

In August 2015, the Study and Science Centre of the Faculty of Food Technology of LLU was put into operation. Thanks to ERDF projects No. 2010/0119 / 3DP / 3.1.2.1.1. / 09 / IPIA / VIAA / 009 "Modernization of LLU study infrastructure" (2010-2015) and No. 2011/0040 / 2DP / 3.1.2.1.1. / 11 / IPIA / VIAA / 022 "Research Centre for the Utilization of Agricultural Resources and Food of National Importance" (2012-2015), a new building was erected with a modern study and research base for food technology studies and research. The following laboratories and pilot plants are at the disposal of the Faculty for the development of Master's theses: Laboratory of Food Processes, Laboratory of Food Packaging, Laboratory of Sensory Evaluation, Microbiology Laboratory, Biotechnology Laboratory, and milk, meat, fruit-vegetable, and grain processing pilot plants. Laboratories and pilot plants are provided with modern equipment, small-scale technological equipment for food development and quality testing. Master students can use analytical equipment (chromatographs, mass spectrometers, viscometers, analysers of structural properties of food, fat, protein, fibre, including dietary fibre, flour analysers, milk analyser) and technological equipment (dryers of various constructions: spray dryer, microwave and freeze-dryer; high-pressure processing equipment; spray dryer with particle microencapsulation capabilities; autoclaves, including back-pressure; flow pack packaging equipment), technological equipment for meat production (thermal chambers, homogeniser, etc.), technological equipment for milk processing (for the production of

cheese, butter, condensed milk products), membrane equipment module: for the implementation of ultrafiltration, microfiltration, reverse osmosis, nanofiltration; technological equipment for grain processing (mills, ovens, extruders), bioreactor complex for simulation of the gastrointestinal tract (implementation of *in vitro* process); system for input and analysis of sensory evaluation results.

The Faculty of Public Health and Social Welfare is involved in the implementation of this programme at **Rīga Stradiņš University**. The study process at this university mainly takes place at the Medical Education Technology Centre (26a Anniņmuižas bulvāris, Rīga). A projector and a computer for presentations are available in all auditoriums. Wireless internet is available in the building. The Medical Education Technology Centre has a study kitchen, which is equipped with modern professional kitchen equipment of recent years, which allows to provide practical skills in the study courses included in the study process. In the RSU Biochemistry Scientific Laboratory, which is equipped with modern equipment for the determination of chemical substances, students also develop Master's theses. The RSU library subscribes to the PEN database, which provides access to evidence-based research in the field of nutrition and food. The university has established close cooperation with associations of dietitians and nutritionists in Canada, Great Britain and Australia. All RSU buildings have a secure wireless network Eduroam WiFi, as well as free access computers for students, which provide access to student support systems and Internet resources. RSU students and lecturers have access to an e-learning environment, where study materials, information about the study course, communication with students, assessment of students' knowledge, etc. are located. Students of co-operation higher education institutions (LU and LLU) have access to the library's collections and e-studies.

### **3.2. Assessment of the study provision and scientific support, including the resources provided within the cooperation with other science institutes and institutions of higher education (applicable to the doctoral study programmes).**

## **III - DESCRIPTION OF THE STUDY PROGRAMME (4. Teaching Staff)**

### **4.1. Analysis and assessment of the changes to the composition of the teaching staff over the reporting period and their impact on the study quality.**

During the reporting period, the number of teaching staff is summarized in Table 4.1.1.

Table 4.1.1.

Teaching staff in the implementation of the study programme, LLU contribution is given in numbers in brackets

Position	2013./2014.	2014./2015.	2015./2016.	2016./2017.	2017./2018.	2018./2019.	2019./2020.
Professor	11 (3)	9 (3)	8 (3)	7 (3)	6 (4)	6 (4)	7 (4)

Associated professor	11 (2)	12 (3)	12 (3)	12 (4)	12 (3)	12 (3)	15 (3)
Assistant professor	8 (2)	7 (1)	7 (1)	7	6	6	5 (1)
Lecturers and teachers	14	16	17	18	18	18	11
In total	44	44	44	44	42	42	38

During the reporting period, there have been positive changes in the composition of the teaching staff of LLU, the teaching staff has been elected to a higher position (associate professor or professor). In total, such changes have affected 1 professor and 2 associate professors.

The core of the teaching staff in the implementation of the study program has not changed significantly during the reporting period.

With study year 2019/2020, the process of renewal of the teaching staff also takes place in the programme, inviting the graduates of the programme who have defended their doctoral thesis in one of the disciplines of nutrition or food. At the same time, the involvement of graduates ensures the improvement of the content of the programme, prevents duplication of topics within the courses, etc. There have also been positive changes in the composition of the teaching staff of LLU, 1 graduate of the study programme participates in the implementation of the study programme and supervision of Master's theses.

Changes in the qualification of teaching staff ensure the corresponding quality of the study programme.

**4.2. Assessment of the compliance of the qualification of the teaching staff members (academic staff members, visiting professors, visiting associate professors, visiting docents, visiting lecturers, and visiting assistants) involved in the implementation of the study programme with the conditions for the implementation of the study programme and the provisions set out in the respective regulatory enactments. Provide information on how the qualification of the teaching staff members contributes to the achievement of the learning outcomes.**

In accordance to the rules of Section 55 (Subsection 1, Point 3) of the Law on Higher Education Institutions, *not less than five professors and associate professors must participate in the implementation of the compulsory part and the elective part of the academic study program*. The compliance of the qualification of the teaching staff involved in the joint master's study programme in the reporting period with the conditions for the implementation of the study programme and the requirements of regulatory enactments is summarized in Table 4.2.1.

Table 4.2.1.

Qualification of teaching staff (data of study year 2019/2020)

Position	Rules of the Law on Higher Education Institutions (Section 55, Subsection 1)	Number, total	% of involved in the program	LLU contribution, number	% of LLU
Professors	min 5	7	18.42	4	50
Associate Professors		15	39.47	3	37.5
Assistant Professors	-	5	13.15	1	12.50
Lecturers and teachers	-	11	28.94	-	-
<b>Total</b>		<b>38</b>	<b>100</b>	<b>8</b>	<b>100</b>

The study programme is implemented by lecturers who are professionals in their field, actively carry out scientific work, have been elected to academic positions at the partner university. The selection and recruitment of academic staff takes place in accordance with the requirements of regulatory enactments, announcing a competition and ensuring an appropriate election procedure. The cooperation university provides lecturers with opportunities for growth and professional development, in accordance with the Cabinet of Ministers Regulation No. 569/2018 "Regulations on the education and professional qualifications required for teachers and the procedure for improving the professional competence of teachers". Lecturers' knowledge, work in research projects, publication of scientific results, reports at conferences, congresses, symposia, etc. is the basis for achieving these results in this area.

**4.3. Information on the number of the scientific publications of the academic staff members, involved in the implementation of the doctoral study programme, as published during the reporting period by listing the most significant publications published in Scopus or WoS CC indexed journals. As for the social sciences, humanitarian sciences, and the science of art, the scientific publications published in ERIH+ indexed journals may be additionally specified (if applicable).**

**4.4. Information on the participation of the academic staff, involved in the implementation of the doctoral study programme, in scientific projects as project managers or prime contractors/ subproject managers/ leading researchers by specifying the name of the relevant project, as well as the source and the amount of the funding. Provide information on the reporting period (if applicable).**

**4.5. Provide examples of the involvement of the academic staff in the scientific research and/or artistic creation activities both at national and at international level (in the fields related to the content of the study programme), as well as the use of the obtained information in the study process.**

In order to ensure research-based studies that would promote the development of public health and well-being, the implementers of the study process (lecturers) carry out research, actively involving master students. In addition, approbation and popularization of research results is carried out with the help of the international scientific conference "Nutrition and Health" (held every 4 years), Science Night events, etc. It promotes the implementation of the aim of the study programme, promotes and develops scientific capacity, knowledge transfer and creation of new intellectual values for the development of public health and well-being, promotes further education of programme graduates, ensures the renewal of scientific and academic staff.

The academic staff involved in the implementation of the joint master's study programme participates in the implementation of national and international projects, the following examples illustrate the activity and involvement of LLU lecturers in research:

1. 12% of the lecturers of the master's study programme implemented the projects of the state research programme "Sustainability of Agricultural Resources for the Production of Quality and Healthy Food in Latvia (AgroBioRes, 2014-2018)"
2. FP7 KBBE 2013-7-613781 "Enhancing of legumes growing in Europe through sustainable cropping for protein supply for food and feed (EUROLEGUME)" (2014-2017), was implemented by 2% of lecturers of the master's study programme;
3. The EEA Norwegian Financial Mechanism project NFI/R/2014/11 "Innovative approach to hull-less spring cereals and triticale use from human health perspective" (2015-2016) was implemented by 2% of the lecturers of the master's study programme;
4. COST Action CA18101 project "Sourdough biotechnology network towards novel, healthier and sustainable food and bioprocesses" (2018-2021) is implemented by 2% of the lecturers of the doctoral study programme;
5. CI & CIDETS Research Centre project "Psycho-social motivations associated with food choices and eating practices " (2016-2019) was implemented by 2% of the lecturers of the master's study programme;
6. ERANET project ERASysAPP "Systems biology platform for the creation of lean-proteome *Escherichia coli* strains" (2015-2018) was implemented by 2% of the lecturers of the master's study programme;
7. European Maritime and Fisheries Fund project 16-00-FP1101-000005 "Production of structured fish forcemeat from Baltic Sea fish and its use in fish products" (2017-2018) was implemented by 7% of the lecturers of the master's study programme;

8. and others (see detailed list of projects in annex).

Master's students also participate in the implementation of projects, developing their Master's theses. The competencies acquired in project development are the basis for the offer of Master's thesis topics.

For example, the findings of the EUROLEGUME project provided an opportunity to develop a master's thesis "New legume products for vegetarians". In the state research programme projects, the acquired competencies provided an opportunity to develop such Master's theses as "Fructo-oligosaccharides in rye bread" and "Research of galacto-oligosaccharides", "Development of new gluten-free pasta". Within the framework of the EAFRD (European Agricultural Fund for Rural Development) funded project "Scientifically proven fermented milk products production from organic milk and their clinical research" Master's thesis "Vitamin D<sub>3</sub> enriched dairy products in nutrition" was developed, while LLU program project "Fatty acid composition variations in human milk" provided the opportunity to develop master's thesis "Fatty acid composition in human Milk".

The knowledge gained during the implementation of the projects has also given the lecturers an opportunity to improve their skills at a higher level in the implementation of the courses included in the study program "Novel Foods and Genetically Modified Organisms", "Organic Agriculture Food Products", etc.

**4.6. Assessment of the cooperation between the teaching staff members by specifying the mechanisms used to promote the cooperation and ensure the interrelation between the study courses/ modules. Specify also the proportion of the number of the students and the teaching staff within the study programme (at the moment of the submission of the Self-Assessment Report).**

The implementation of the joint master's study programme takes place in cooperation with the lecturers of the programme, jointly implementing the study courses or parts of courses included in one module (for example, study courses "Nutritional Supplements and Food Additives" and "Novel Foods and Genetically Modified Organisms" are jointly implemented by lecturers of LU and LLU, the study course "Medical Nutrition for the Treatment of Chronic Diseases" is implemented jointly by lecturers of RSU and LU. The cooperation of the teaching staff of the study programme takes place in: the development and updating of the content of the study courses; improvement of methodological work; the preparation of textbooks and study materials, the organization of the entrance examination, the integration of scientific achievements in the study process; research projects, organization of the international scientific conference "Nutrition and Health", supervision of Master's thesis, where the student invites an additional consultant of a certain field / topic.

In order to ensure the succession and quality of the content of the study courses included in the study programme to achieve the aim of the study programme, the content of the study courses is updated at least once a year.

The ratio of the number of students and teaching staff within the study programme (at the time of submitting the self-assessment report) is 13.2.

# Annexes

III. Description of the Study Programme - 1. Indicators Describing the Study Programme		
Compliance of the joint study programme with the provisions of the Law on Institutions of Higher Education (Table)	Annex 4. Compliance on joint master's study programme Nutrition Science to the Law of Higher Education Institutions.pdf	4. pielikums. Kopīgās maģistra programmas Uzturzinātne atbilstība Augstskolu likumam.pdf
Statistics on the students over the reporting period	Annex 5. Students' statistics.pdf	5. pielikums. Studējošo statistika.pdf
III. Description of the Study Programme - 2. The Content of Studies and Implementation Thereof		
Compliance of the study programme with the State Education Standard	Annex 6. Compliance of the master's study programme Nutrition Science with the state academic education standard.pdf	6. pielikums. Kopīgās maģistra studiju programmas Uzturzinātne atbilstība valsts izglītības standartam.pdf
Compliance of the qualification to be acquired upon completion of the study programme with the professional standard (if applicable)		
Compliance of the study programme with the specific regulatory framework applicable to the relevant field (if applicable)		
Mapping of the study courses/ modules for the achievement of the learning outcomes of the study programme	Annex 8. The mapping of the joint master's study programme Nutrition Science study courses.xlsx	8. pielikums. Kopīgās maģistra studiju programmas Uzturzinātne studiju kursu kartējums.xlsx
Curriculum of the study programme (for each type and form of the implementation of the study programme)	Annex 9. The study plan of the joint master's study programme Nutrition Science.pdf	9. pielikums. Kopīgās maģistra studiju programmas Uzturzinātne plāns.pdf
Descriptions of the study courses/ modules	Annex 10. The summary of the joint master's study programme Nutrition Science study courses.pdf	10. pielikums. Studiju kursu anotācijas Uzturzinātne.pdf
Description of the Study Direction - Other mandatory attachments		
Sample of the diploma to be issued for the acquisition of the study programme.	Diploma & diploma supplement of the joint master's study programme Nutrition Science.rar	Kopīgās maģistra studiju programmas Uzturzinātne diploms & diploma pielikums.rar
Description of the Study Programme - Other mandatory attachments		
Document confirming that the higher education institution/ college will provide the students with the options to continue the acquisition of education in another study programme or at another higher education institution/ college (a contract with another accredited higher education institution/ college), in case the implementation of the study programme is discontinued	Testimony_Nutrition Science.pdf	Uzturzinatne_Apliecinajums_LU_RSU_LLU.edoc
Document confirming that the higher education institution/ college guarantees to the students a compensation for losses if the study programme is not accredited or the licence of the study programme is revoked due to the actions of the higher education institution/ college (actions or failure to act) and the student does not wish to continue the studies in another study programme	Testimony_Nutrition Science.pdf	Uzturzinatne_Apliecinajums_LU_RSU_LLU.edoc
Confirmation of the higher education institution/ college that the teaching staff members to be involved in the implementation of the study programme have at least B2-level knowledge of a related foreign language according to European language levels (see the levels under www.eurpass.lv), if the study programme or any part thereof is to be implemented in a foreign language.		
If the study programmes in the study direction subject to the assessment are doctoral study programmes, a confirmation that at least five teaching staff members with doctoral degree are among the academic staff of a doctoral study programme, at least three of which are experts approved by the Latvian Science Council in the respective field or sub-field of science, in which the study programme has intended to award a scientific degree.		
If academic study programmes are implemented within the study direction, a document confirming that the academic staff of the academic study programme complies with the provisions set out in Section 55, Paragraph one, Clause three of the Law on Institutions of Higher Education	LLU_apliecinajums_Uzturzinatne_programmai_EN.docx	LLU_apliecinajumu_Uzturzinatne_programmai_LV.edoc
Sample (or samples) of the study agreement	Study Agreement_2021.pdf	Studiju līgums_2021.pdf
If academic study programmes for less than 250 full-time students are implemented within the study direction, the opinion of the Council for Higher Education shall be attached in compliance with Section 55, Paragraph two of the Law on Institutions of Higher Education.	The decision of the Council of Higher Education_Nutrition Science.pdf	Augstākās izglītības padomes atzinums_Uzturzinātne.docx