APPLICATION

Study field "Environmental Protection" for assessment

Study field	*Environmental Protection*
Title of the higher education institution	*Liepājas Universitāte*
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Self-evaluation report

Study field "Environmental Protection"

University of Liepāja

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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:

University of Liepaja (hereafter - LiepU) is the Kurzeme Regional Centre of higher education, science and culture, which contributes to regional development in the Latvia and international context.

Liepaja University Development Strategy for 2016-2020

https://www.liepu.lv/uploads/%C4%80SD/ERASMUS%20dokumenti/Liepaja_University_Development_Strategy_Summary_2016-2023_25.01.2021.pdf

LiepU based on the letter No. 4-10e/21/99 of the Ministry of Science and Education of 11.01.2021. Regarding the development strategies of institutions with decision of LiepU Senate of 25.01.2021. has prolonged the development strategy until 31st December 2023.

Mission of LiepU: be the promoter of Kurzeme education, science, innovations and culture development, which provides competitive, nationally and internationally significant studies necessary for the regional development, implements nationally and internationally acknowledged research, related to the studies, and promotes sustainable development of the society.

Values of LiepU: human being, collaboration, growth, Latvia

Overall goal of LiepU: provide acquisition opportunities of higher professional, academic education and life-long education based on research, necessary for the region, on Latvia and international scale competitive and qualitative, promoting development of national economy based on knowledge and professional competences and strengthening of creative, culture-orientated society.

Priority Development Directions of LiepU: studies, life-long education, scientific work and innovations, and development of management governance (management governance of human resources, projects, finances, infrastructure, information);

Quality Policy of LiepU: provide acquisition opportunities of higher professional, academic education and life-long education based on research, necessary for the region, competitive and qualitative on Latvia and international scale, promoting development of national economy based on knowledge and professional competences and strengthening of creative, culture-orientated society, taking into account European Standards and guidelines for quality provision in the European (ESG-2015).In 2018 three mid-term planning documents were developed which are directed towards the development of LiepU human resources.

1. LiepU Human Resources Development Plan 2018–2023;

2. Action Plan of LiepU Academic Staff Development 2018– 2022;

3. Training Plan of LiepU Management Staff 2018– 2021.
In the beginning of the evaluation period 10 study directions were implemented at Liepaja University. Currently its number has decreased and is 8. First level, bachelor, master and doctoral

study programmes are being implemented in these directions. The number of students at Liepaja University has decreased and now is 1218. The decrease of the student number is mainly related to the demographic and economic situation (the number of fee students and full-time foreign students has significantly decreased since the establishment of restrictions related to COVID-19 pandemic.

Study directions and number of study programmes implemented at LiepU can be seen in "Other attachments" **Appendix I.1.1.A.**

Dynamics of LiepU student numbers during the assessment period can be seen in "Other attachments" **Appendix I.1.1.B.**

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 principal decision-making bodies of Liepaja University are:

- **the Constitutional Assembly**
- **the Senate**
- **the Rector**
- **the Academic Arbitrage**

The Constitutional Assembly is the highest representative and management and decision-making body authorized by the University. The Constitutional Assembly:

- adopts and amends the Constitution of the University;
- decides about the change of the University status and name;
- approves the regulation for the Rector election, elects and renounces the Rector;
- listens to and assesses the Rector’s annual report about the University work;
- approves the Regulation of the Senate, elects and renounces the members of the Senate from the academic and general staff;
- approves the Regulation of the academic arbitrage, elects and renounces the academic staff members of the academic arbitrage;
- organizes new elections of the Constitutional Assembly;
- if necessary, considers all other issues important for the University work.

The Constitutional Assembly of the University consists of 65 University staff members who are elected by secret ballot for three years in the following composition:

- 40 representatives from the academic staff;
- 13 representatives from students;
- 12 representatives from the general University staff.

The Senate is a collegial management and decision-making body of the University staff. The Senate approves:

- internal order regulative documents of the University, if they are not approved by the Constitutional Assembly;

- study programmes and the responsible ones for the implementation of the corresponding programme;
- admission rules for the students' enrolment at the University;
- University budget;
- work payment principles;
- Regulations of the Study Council, Science Council and Maintenance Council;
- Regulations of the Honorary Doctor and Honorary Member of the University nominations;
- Regulations of the Advisory Convent;
- Regulations of the Students' Self-government.

The Senate decides:

- about formation, reorganization or elimination of departments, laboratories, faculties, scientific institutions and other structural units;
- about preservation or change of the corresponding science or art sub-sector and proclamation of an open competition to the vacant professor post in the science or art sub-sector;
- about the necessary science or art sub-sector in which an open competition will be proclaimed to the vacant associated professor post and what payment category the corresponding post complies with;
- about guest professors, associated guest professors, guest docents, guest lecturers or guest assistants' (if the corresponding post is vacant) recruitment for up to two years;
- about the financial resources structure, listen to the Rector's annual report on the budget implementation;
- about other study, scientific and maintenance issues important for a successful University functionating;
- about convening of the Constitutional Assembly.

The Senate consists of 28 University staff members who by secret ballot are elected for three years in the Constitutional Assembly in the following composition:

- 21 representatives from the academic staff, including at least 14 professors and associated professors;
- 6 representatives from students;
- 1 representative from the general University staff.

The Rector is the highest official of the University who implements the general administrative management of the University and without any special authorization represents the University. The Rector is elected in the Constitutional Assembly for five years and not more than twice in a row. The Rector has to be a Professor. The elections of the Rector shall be governed by the regulations which have been approved by the Constitutional Assembly. The elected Rector shall be approved by the Cabinet of Ministers.

The Rector

- is responsible for compliance of the university's activity with the Law on Higher Education Institutions and other Legislation of the Republic of Latvia, as well as the Constitution of Liepaja University, Constitutional Assembly and Senate decisions;
- responsible for the quality of the education to be acquired at the University, performed scientific research and implemented artistic creativity;
- Provides the state budget resources allocated to the University and self-income, also legal, economic and purposeful application of University property;

- personally responsible for the University financial activity;
- promotes and is responsible of the development of the University staff and provides the academic staff and students' academic freedom;
- responsible for the implementation of the University Strategy and prepares the University Budget;
- knows, manages and is responsible for the performance of all the tasks stated in the Law of Higher Educational Institutions and University Constitution.

The Academic Arbitrage consists of 7 members, who are elected for three years. The Constitutional Assembly elects 5 representatives by secret ballot from the academic staff. They may not be representatives from the administrative staff. The Students' Self-government elects 2 representatives in the Academic Arbitrage; when considering the Students' applications, the presence of the representatives is mandatory.

The Academic Arbitrage shall consider:

- the students and academic staff applications about the restrictions of academic freedom and rights or trespasses stated in the University Constitution;
- arguments between the University officials, also the institutions of structural units which are subordinated;
- In the cases stated in the Constitution applications shall be considered about challenging the administrative act or actual action and make corresponding decisions about them.

The Faculty is a structural unit which provides the study content and course, also scientific research work in one or several science or profession directions. They are conducted by the Dean who is elected by the Faculty Council for 5 years in compliance with the Regulations about the Faculty, but not more than twice in a row.

The tasks of the Faculty are:

- develop and implement the development strategy of the faculty;
- participate in the University budget development; organize purposeful application of the funding allocated to the Faculty;
- develop and implement efficient, strategically and economically justified study programmes;
- provide and be responsible for the quality of the study programmes; coordinate and monitor the activity of the study programme directors;
- participate in the applicants attraction (both in Latvia and abroad);
- attract and supervise teaching staff who are necessary for the study programme implementation, also cooperating with other faculties;
- plan and organize the study process and scientific research work, including students' scientific research activity;
- supervise and be responsible for the observance of the study regulatory documents in the Faculty;
- in case of a necessity promote/participate in their development; assess and analyse students' study achievements, control fulfilment of the students' academic and financial commitments;
- organize work of the faculty's study support staff and general staff;
- supervise the organizational and innovative work of the faculty's structural units;
- encourage project development and attraction;
- develop cooperation with other higher educational establishments and institutions;
- provide communication with graduates and employers.

The highest decision-making body of the Faculty is the Faculty Council, which considers and decides on the faculty's study organization, academic and scientific work, also economic, financial and other issues.

The Faculty Council elects:

- the Chairperson and Vice Chairperson of the Council;
- the Dean;
- lecturers and assistants (according to the *Regulations about Elections in Academic Posts*).

The Faculty Council recommends:

- candidates for the Senate/ Professors Councils to be elected in the docent, associated professor, professor posts;
- Senate approval of the study program directors.

The Faculty Council states:

- the main directions of the faculty's academic and scientific activity, its development strategy and perspectives in accordance with the University overall strategy and goals;
- application of the faculty's name and symbolism in accordance with the procedure established by the University.

The Faculty Council decides:

- about the organizational issues of the faculty's administrative process;
- about the organizational issues of the study process and scientific work;
- about provision and organizational issues of the study programme/direction;
- about compliance of the teaching staff with the requirements of the study programmes/directions according to the licencing/accreditation regulations;
- about promotion issues of the study programme;
- about the issues of the study programme budget and material base;
- about the spending order of the funding obtained/allocated to the faculty;
- approves the standard and annual study plans.

The Faculty Council considers:

- The annual self-assessment reports of the study directions and faculty;
- suggestions related to the study provision;
- other proposals submitted by the student academic groups or teaching staff groups.

The Faculty Council analyses:

- the academic, scientific and professional activity of the teaching staff according to the accreditation regulations;
- students' progress;
- students, employers and graduates' opinions about the study programmes.

The Faculty Councils consists of 9 people – the Dean; 6 representatives of the academic staff, including at least 3 elected teaching staff members with a Doctoral Degree; the teaching staff are elected in the Council by the General Meeting of the faculty's academic staff; 2 representatives of students studying at the University who are delegated by the monitors of the

faculty students' groups.

Appendix I.1.2.A - the set of regulatory documents of Liepaja University activity and order: https://www.liepu.lv/en/61/documents-and-regulations

Appendix I.1.2.B - structure of Liepaja University:

Structure | Liepaja University (liepu.lv)

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.

In order to implement the overall goal and goals, the University of Liepaja uses the development and planning documents and the internal Quality Management System (hereafter – QMS). In LiepU QMS there are the databases and procedures of the internal normative documents.

Responsibility

- LiepU management has made commitments to provide the necessary resources needed for the Quality Management System's efficient activity and its improvement.
- LiepU approves academic integrity and freedom, stands against academic fraud; supervises any intolerance and students or staff's discrimination.
- All LiepU employees are responsible for implementation, support and development of the Quality Policy, procedures and improvement, they are responsible for the quality and get involved in quality provision.
- Formulations of employees' responsibilities, rights and duties are written in job descriptions and procedures for all work functions affecting the quality of work.

Planning of QMS

- In the QMS manual LiepU has defined procedures and other documents how the requirements of the QMS are reached and how the development of the quality culture happens.
- Observance of the QMS requirements is achieved working according to the ESG-2015 and requirements stated in the QMS documentation.
- The order, in which the changes in processes and documentation are introduced, is stated in the Recordkeeping Instruction. Mechanisms for implementation of an efficient QMS provision;
    - analysis of outcomes of students and graduates' regular surveys;
    - compilation and analysis of employers and other social partners' opinions and suggestions,
    - Management Report considered in the Constitutional Assembly,
    - problem analysis in structural units.

In the development of the QMS procedures, regulations, rules and other normative documents and their execution control the activity of the representatives delegated by the LiepU Student Council is active. Students participate in the following LiepU institutions: in the LiepU Constitutional Assembly, in the LiepU Senate, in the LiepU Senate Development and Budget Commission and the LiepU Senate Academic Commission, in Councils of the Faculties, the Study Councils, Science Councils, Maintenance Councils, Library Council, Scholarship Commission, Scholarship Commission of the LiepU Senate, Loan Granting Commission, Study Direction Councils.

All LiepU employees are responsible for implementation, support and development, of the quality policy, procedure and management system and they take responsibility for the quality and get involved in quality provision.

The electronic link to the website where one can access:

- Quality Policy of the Higher Educational Establishment and Quality Manual: Quality policy | Liepaja University (liepu.lv)
- Information on other binding internal laws and regulations can be found in **Appendix I.1.2.A** in the previous section.

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.	Complies
		Quality Policy of LiepU: provide acquisition opportunities of qualitative and competitive on Latvia and international scale higher professional, academic education and life-long education based on research and necessary for the region, promoting development of Latvia national economy based on knowledge and professional competences and strengthening of creative , culture orientated society, taking into account the European standards and guidelines for quality assurance in European higher education space (ESG-2015). The Quality Policy is based on LiepU Strategy and values stated in it: a human being, society, growth, Latvia. The Quality Policy is implemented by all LiepU structural units and employees, according to the strategic goals. Provision of quality is described in the LiepU Quality Manual.

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.	Complies LiepU QMS are procedures which regulate formation, licensing and accreditation of study programmes. Separate procedures determine preparation, approval and change management of both study courses and study plans. Procedures are created which regulate the annual study plan development of classes and their management of changes, also preparation of timetable and change management.
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.	Complies In the study course programmes the goals and tasks, requirements for CP acquisition, independent work and expected outcomes/ competences to be acquired in the study course have to be indicated. In the regulations about the study course/module examinations the order of the examination organization and procedure have been stated, also reflection of results. https://www.liepu.lv/uploads/files/Noteikumi%20par%20studiju%20kursa%20un%20modula%20parbaudijumiem%20English%20(1).pdf

4.	Internal procedures and mechanisms for assuring the qualifications of the academic staff and the work quality have been developed.	Complies In 2018, three mid-term planning documents were developed, directed towards the LiepU human resources development. LiepU Human Resources Development Plan 2018-2023 in which the current situation is assessed, the goals of human resources management processes, the tasks to be executed and results achieved are determined. The goal of LiepU Human Resources Development Plan are to provide LiepU with the necessary human resources, promote development of the current human resources (academic and general staff), professional growth and development, new teaching staff and scientific staff inclusion in the university education and research process in order to provide modern, towards development orientated studies, research, life-long education in compliance with the LiepU Development Strategy. The Action Plan of LiepU Academic Staff Development 2018-2022 is the staff development and attraction plan, in which the envisaged activities of the academic staff competence improvement, development and attraction are determined and described. The goal of the Action Plan of LiepU Academic Staff Development 2018-2022 is to provide the increase of the LiepU academic staff competences and skills, promote the staff development and LiepU work development according to the quality requirements. 3.The Training Plan of LiepU Management Staff 2018-2021 in which the activities for the envisaged managerial staff competence development are stated and described. The goals of LiepU Managerial Staff Training Plan: the increase of LiepU managerial staff competences and skills for a skilful administration, process management, managerial team with a vision of a modern, competitive international university which understands global tendencies, a managerial team which is able to inspire students and employees for a fast and ambitious development. LiepU QMS has procedures about the Employees' training planning, organisation and efficiency assessment and Academic Staff selection and assessment.

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.	Complies Every year on October 1 the data is collated about the number of students, number of the matriculated, number of graduates, number of staff- which is included and analysed in the self-assessment report of the study direction. In LiepU procedures are developed which state the order in what way the annual surveys of students' satisfaction and graduates' surveys are carried out. In the reports of the study direction self-assessments the compliance of the study direction and study programmes with the labour market demand, the annual employers' surveys are analysed. In the study direction self-assessment reports the information on financial resources for the study direction in order to implement the corresponding study programmes are analysed, also to provide the academic staff research (creative) activities. Every year in the Senate the enrolment results are analysed, assessment of the Scientific activity and analysis of financial and economic activity are carried out.
6.	The higher education institution/ college shall ensure continuous improvement, development, and efficient performance of the study direction whilst implementing their quality assurance systems.	Complies LiepU normative documents and QMS determine continuous improvement, development and work efficiency of the study direction. To prepare the self-assessment reports of the study direction, there must be the development plan of the study direction and its execution analysis.

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 field of study is represented by two programmes reflecting the succession of environmental studies at LiepU (hereinafter - LiepU) **- the professional bachelor's programme 'Environmental and Renewable Energy Management and Engineering' (hereinafter - the EREME) and the professional master's programme 'Ecotechnologies'**.

The study programmes of the field are implemented at the LiepU Faculty of Science and Engineering (hereinafter - the FSE).

In regards to the bachelor's studies, during the self-assessment period, the professional bachelor's programme EREME was implemented in the study field, however, the programme 'Environmental Innovation Technologies' (EIT) ended up being developed and licensed in its stead. The content of both programmes is similar because they contain the requirements of the same professional standard, 'Environmental Engineer', therefore, their objectives and tasks are alike. Thus, EREME is not submitted for evaluation to the study field, as it is replaced by EIT. Though, judging by how EIT has not enrolled any students yet and those studying EREME have been transferred to the appropriate EIT courses, the self-evaluation, statistics and other information relevant to students in this self-assessment report are provided for EREME.

The LiepU field of study 'Environmental Protection' with one study programme - the professional bachelor's programme EREME - was evaluated within the scope of the ESF project 'Evaluation of higher education programmes and proposals for quality improvement' (No. 2011/0012/1DP/1.2.2./11/1.PIA/VIAA/001).

In 2013, work was started on the development of the professional master's study programme 'Ecotechnologies', and it was licensed on 23.04.2014 (license No. 04043-70, 23.04.2014). In 2015, the field of study was accredited for six years (accreditation sheet No. 351, 6.10.2015, the study field was accredited until 2 June 2021).

The common goal of the field of study 'Environmental Protection' is to ensure high-quality and competitive acquisition of interdisciplinary professional higher education in the field of environment and prepare academically and professionally educated environmental specialists whose theoretical and practical knowledge and skills allow applying modern environmental knowledge and methodology in natural and social environmental research and sustainable development.

The conceptual approach implemented by the field contributes to the achievement of the set goal: the methodological principles of interdisciplinary environmental science as a modern environmental study paradigmatic framework (complementarity of natural, social and human sciences, interactivity, system and analytical approach, uncertainty conception in interpretations, ecological thinking), the principle of goal-orientation of sustainable development, the principle of adaptability to the 'rapidly changing modern world' (incl. the changing requirements of the labour market), the principle of reflecting the economic and social needs of the state, the principle of democracy and interactive communication in programme management.

The programmes of the field 'Environmental Protection' have been developed in response to the dynamic changes in the economic situation and the labour market in connection with the need to train higher education specialists in science and engineering, as well as in environmental management.

The Liepaja University *Development Strategy* 2016-2020 has been taken as a base for the current plan of the field of study development (LiepU, on the basis of the letter of the Ministry of Education of 01.11.2021 No. 4-10e/21/99 On institutional development strategies, by the decision of the Liepaja University Senate of 25.01.2021 has extended the development strategy until 31 December 2023 **(see Annex 1.1.A).**

https://www.liepu.lv/uploads/dokumenti/LiepU_attistibas%20strategija%202016-2020_pagarinata%20lidz%202023.gadam_25.01.2021.pdf), and the development plan of the study programme EREME for 2011-2017, the tasks of which have been specified, taking into account the addition of a new professional master's study programme 'Ecotechnologies'.

However, the further development of the EREME programme has been implemented by reflecting the dynamics of labour market requirements in the Kurzeme Region and Latvia in general, respectively, from September 2019 to February 2021, a new study programme with a title 'Environmental Innovation Technologies' has been developed and licenced (10.02.2021) within the scope of the SGS project (see the programme self-evaluation report for a description).

Unlike similar study programmes in Latvia, in addition to the basics of environmental engineering, the EIT programme also teaches the competencies of technology development (ensured by the acquisition of material science, prototyping, programming and other courses), as well as non-standard problem-solving skills (stimulated by the study process of innovative fields like biomimicry, biotechnology, material recycling, etc.). Thus, the programme occupies a unique, previously overlooked niche field among the environmental engineering bachelor's study programmes implemented in Latvia. The comparison of EIT and the selected EU (foreign) study programmes can be viewed in **Appendix II.1.1.C**.

In its turn, the programme 'Ecotechnologies' represents interdisciplinary studies unique to the Latvian higher education environment (unique - because claims to the implementation of the principle of interdisciplinarity in most other cases are reduced only to the application of the principle of multidisciplinary), aimed at the use of eco-technological methodology not only for environmental, but also for health, business, artistic creativity and other problem solutions, respectively adequately reflecting the specifics of modern labour market development, characterized by difficulties in defining future occupations and qualifications: people often get an education in one sector but work in another, and often work in several jobs / projects at the same time. The mentioned uniqueness of the programme has been identified in comparison with Latvian and foreign study programmes (for a detailed analysis, see the self-evaluation report of this programme; **see also Annex II.1.1.D**).

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 common goal of the field of study 'Environmental Protection' is to ensure high-quality and competitive acquisition of interdisciplinary professional higher education in the field of environment and prepare academically and professionally educated environmental specialists whose theoretical and practical knowledge and skills allow applying modern environmental knowledge and methodology in natural and social environmental research and sustainable development.

The field of study is implemented by the LiepU FSE, and its development strategy is coordinated with the LiepU strategic planning documents:

- LiepU Development Strategy (https://www.liepu.lv/uploads/%C4%80SD/ERASMUS%20dokumenti/Liepaja_University_Development_Strategy_Summary_2016-2023_25.01.2021.pdf)
- LiepU Scientific Activity Strategy (2015–2020) https://www.liepu.lv/uploads/files/LiepU%20Zinatniskas%20darbibas%20strategija_2015_2020.pdf

Assessing the need for the development of the field in the perspective of regional and national

development priorities, the emphasis on the need for environmental specialists in the EU policy and environmental protection guidelines, which is the conceptual basis for Latvia's environmental protection policy, strategy and legislation, should be noted. Environmental studies provide training for specialists that are necessary to ensure the sustainable development of the country, including for the efficient use of resources in the Kurzeme Region in particular.

In particular, the current demand for the study programme 'Ecotechnologies' is determined by the advantages of the ecotechnological approach confirmed in world experience in sustainable solutions to economic problems. In addition, the interdisciplinary framework of the study programme, the emphasis on the development of innovative thinking, the focus on low-investment solutions, and the emphasis on partnership with nature reflect the trends of 21st century education, research and management, accordingly, creating conditions for the development of marketing that is especially attractive to the students of the study programme. Such international and EU labour market trends are directly in line with the specialization of LiepU and correspond to the strategic direction of LiepU towards the development of STEM study programmes (the category of which also includes environmental study programmes). During the reporting period, special attention was paid to the integration of the concept of circular economy into the content and methodology of the programme.

The international significance of the field of study is emphasized by the Green Infrastructure Strategy adopted by the European Commission (06.05.2013) https://ec.europa.eu/commission/presscorner/detail/lv/IP_13_404, emphasizing the complementarity of ecological, economic and social benefits in the use of natural resources.

In Latvia, the main policy documents that substantiate the importance of the field of study are as follows:

- Sustainable Development Strategy of Latvia until 2030 https://www.varam.gov.lv/lv/latvijas-ilgtspejigas-attistibas-strategiju-lidz-2030gadam-latvija2030 ;
- National Development Plan of Latvia for 2021-2027 (NDP 2027): http://likumi.lv/doc.php?id=253919 ;

https://www.pkc.gov.lv/lv/nap2027

- Education Development Guidelines for 2014-2020 http://m.likumi.lv/doc.php?id=266406 ;
- Environmental Policy Guidelines for 2014-2020 https://likumi.lv/ta/id/265262-par-vides-politikas-pamatnostadnem-2014-2020-gadam ;
- Cabinet Order No. 746 On the Priority Directions in Science in 2018-2021 https://likumi.lv/ta/id/295821-par-prioritarajiem-virzieniem-zinatne-2018-2021-gada;
- the concept 'Model of Distribution of Higher Education Study Programmes and Study Places Corresponding to the Development of the Country' http://likumi.lv/doc.php?id=186857 ;
- (Cabinet Order No. 30 of 16.01.2009), emphasizing the need for preparation for the reduction of climate change and ensuring energy efficiency;
- the declaration 'On Guidelines for the Development of a Competitive Higher Education System' http://www.designlv.lv/downloads/Deklaracija.pdf, paying special attention to the adaptation of the 'Triple Helix' model;
- Circular Economy Package (2015) http://www.db.lv/razosana/ek-pienem-verienigu-aprites-ekonomikas-paketi-442149.

The field programmes comply with the national planning documents in force in the field of science, higher education and the environment (for example, Guidelines for Science, Technological Development and Innovation 2014-2020). The valid planning documents at the regional and city

level and in the process of development, substantiating the significance of the field of study, are

- the strategic documents of the Kurzeme Planning Region https://www.kurzemesregions.lv/wp-content/uploads/2018/11/Kurzeme-2030.pdf, where the context of the region is important due to the growing role of the region in the national context in education, science, technology development and innovation field.
- Liepaja City Sustainable Development Strategy until 2030 https://www.liepaja.lv/attistibas-strategija-2030/
- Liepaja City Sustainable Energy Action Plan for 2014-2020 https://www.liepaja.lv/dokumenti/ilgtspejigas-energijas-ricibas-plans/ with an emphasis on specific measures to achieve the planned reduction of CO_2 emissions.

The study programmes of the field 'Environmental Protection' are considered to be STEM (science, technology, engineering and mathematics) programmes (see above), the development and support of which for the provision of human resources and infrastructure have been identified as priorities in the above-mentioned higher education policy planning documents.

The Latvian Sustainable Development Strategy 'Latvia 2030', the Environmental Guidelines for 2014-2020, as well as other policy planning documents set priorities for building a stable economy, by including political goals on environmental protection, therefore the heads of companies and institutions welcome both study programmes, emphasizing the possibility to obtain both bachelor's and master's degrees in environmental sciences at Liepaja University. Both study programmes strengthen the position of Liepaja University in the region, promote the succession of educational stages, lifelong learning opportunities and the attraction and retention of students and specialists in the city and the region.

The development strategy of the field is based on

- higher education guidelines in the context of international, national and regional specialization;
- demand for specialists in the labour market in Latvia and Kurzeme;
- fulfilment of international quality indicators of higher education;
- the results of the evaluation and previous accreditation of the field of study, the recommendations of the experts and the related conclusions.

Basically, four basic areas of strategic development of the field of study should be emphasized:

- the quality of field of study programmes;
- scientific and professional pedagogical qualification of the teaching staff;
- quality of study environment (infrastructure [functional and aesthetic dimension], technical and informative provision, availability of financial resources);
- sustainability of the field (compliance with the dynamic requirements of the labour market, cooperation with partners, student satisfaction, etc.).

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 SWOT analysis of the environmental protection study field was carried out within the self-assessment (reporting) period for the implemented study programmes — **professional bachelor's programme 'Environmental and Renewable Energy Management and Engineering' (EREME) and professional master's programme 'Ecotechnologies'**.

Development of environmental protection studies emphasize the following priority directions (goals), the implementation of which is based on the identified paradigmatic principles, taking into account topicalities of higher education policy, expert recommendations and results of analysis of the proposals made by the FSE staff and students:

1. Qualified and sustainable academic staff corresponding to the goals and requirements of the field of study, programmes and study courses
2. Research activity of academic staff and students
3. Improving the content of study programmes and meeting the needs of students
4. Materials and technical support of the field of study

The priority directions are related to the groups of valuation criteria of the fields of study and programmes (quality, resources, sustainability and cooperation). Tasks corresponding to the priority action directions are also included in the annual work plans of LiepU and FSE.

In order to ensure the implementation of the fields, communication of interest groups is carried out, which manifests itself in the questionnaire of students, in the feedback of internship providers, employers and graduates, in the discussions of the teaching staff involved in the implementation of the field, as well as in annual discussions with the initiative group of the bachelor's study programme EREME, which is primarily based on LiepU Eco-Council activists and supporters of environmentally friendly actions, and the students of the professional master's study programme 'Ecotechnologies'. The results of the communication are summarized in the SWOT analysis of the field of study (see **Annex II.1.3.B 'Results of the Environmental Protection Field SWOT Analysis'**); the main findings of this analysis are as follows:

Strengths of the field of study:

- Environmental protection as a priority area of policy planning, the recognized importance of research results in environmental science in ensuring sustainable development
- International publications of full-time lecturers in environmental science - every 2 years at least 1 publication in an internationally cited publication
- Involvement of industry specialists-practitioners and employers in the study process (guest lectures, work in bachelor's and master's thesis commissions, internships, etc.)
- A small number of students in the field as **a Weakness** at the same time creates opportunities for the implementation of an individual approach in the study process
- Traditions of student involvement in research and student education activities (for example, student SRW management, training activities within the ESF & VISC funded project *Support for the Development of Individual Competences for Learners* (No. 8.3.2.2./16/I/001), involvement in the creation of the Nature House educational environment supported by the project 'Development of Innovation Centre in Liepaja City'(No. NFI/IC/VIAA/2020/2).
- Adequate content and methodological quality of the study programmes (evaluated in communications with students and their employers), including extensive integration of practice in the study process

However, the field has also **weaknesses** :

- There is a lack of resources to motivate young scientists for academic and scientific work

- Relatively small number of total publications of lecturers
- Content overlap of separate study courses
- Insufficient proportion of practical work, which is largely determined by incomplete laboratory arrangement and equipment
- Small number of students in the field
- Many students work in addition to their studies, which complicates the study process
- **EREME:** weak prior knowledge of applicants (students)
- **EREME:** limited employment opportunities for the graduates in the Kurzeme Region
- **EREME:** the study programme is implemented only in Latvian, which does not allow attracting foreign students

Discussing the weaknesses in the study interest group environment allows gradually overcoming them, including by eliminating the content overlap of the study courses and adapting to the level of the students' prior knowledge (supplementing and, if necessary, also the processing of the descriptions of study courses and materials), targeting the available financial resources for the technical development of laboratories. Marketing activities (including in social networks, involving programme graduates and employers) have contributed to the increase in the number of students in EREME in the 2020/2021 academic year. The distance learning required by the Covid-19 pandemic has made it easier for students to combine study and work.

The realization of the field of study is also potentially influenced by external threats independent of LiepU. The main **external threats** to the successful implementation of the field:

- Uncertainty about the typology of Latvian higher education institutions and the provision of the education system
- Risk that Liepaja University may lose the status of a university, thus reducing its access to educational and research projects, as well as undermining the prestige of LiepU in the eyes of potential applicants
- Insufficient state funding for higher education, including to ensure an appropriate study infrastructure
- Limits for ensuring adequate remuneration for lecturers' work
- Opinions disseminated in the public space about the low quality of the Latvian education system.
- Potential destabilizing effects of the Covid-19 pandemic on the labour market
- Free access to course materials developed by teachers in the e-environment can reduce students' involvement in classes

A further development plan (see appendix II.1.3.A) for the environmental protection study field was developed for the 2021-2027 period, and the actions of the plan are aimed at a) professional master’s study programme ‘Ecotechnologies’, and b) professional bachelor’s study programme ‘Environmental innovation technologies’ (EIT), which in the autumn of 2021 will be replaced by the programme implemented during the self-assessment reporting period, EREME.

As EIT was developed on the basis of the same professional standard (‘Environmental engineer’) as the environmental engineering subfield of EREME, the objectives and tasks of both of the programmes are similar. Those currently studying the EREME programme have either chosen or expressed a wish to study in the environmental engineering subfield; thus, they will all be transferred to the new EIT study programme.

To mitigate these threats, LiepU, FSE and the management of the field of study follow the changes in the industry, try to participate in its communication activities, and attract the project and financial support of the Liepaja City Council for the implementation of the study process. On the other hand, in order to overcome external threats and promote the successful implementation of

the field of study, there are also **external opportunities that are** directly independent of the institution; the most important of them being as follows:

- Use, maintenance and promotion of the benefits of the ERDF project
- ESF scholarships for financial support of master's programme students
- Strengthening cooperation with businesses and local governments - to link the study process with the needs of the employer, carry out commissioned research / expert-examination work useful for studies
- More extensive involvement of students in research and educational projects, as well as in the LiepU administration
- More extensive involvement of industry experts (including foreign ones) in the study process
- Development of education and research cooperation with foreign universities, especially in the Baltic region
- Significant increase in the number of foreign students

A further development plan (see appendix II.1.3.A) for the environmental protection study field was developed for the 2021-2027 period, and the actions of the plan are aimed at a) professional master's study programme 'Ecotechnologies', and b) professional bachelor's study programme 'Environmental innovation technologies' (EIT), which in the autumn of 2021 will be replaced by the programme implemented during the self-assessment reporting period, EREME.

As EIT was developed on the basis of the same professional standard ('Environmental engineer') as the environmental engineering subfield of EREME, the objectives and tasks of both of the programmes are similar. Those currently studying the EREME programme have either chosen or expressed a wish to study in the environmental engineering subfield; thus, they will all be transferred to the new EIT study programme.

Students matriculated in the 2019/2020 academic year will be enrolled in the 3rd course of EIT, and those matriculated in the 2020/2021 academic year — in the 2nd course.

In the further development of the field of study it is planned to place special emphasis on

- mutual integration of environmental and information technology studies (considerations: saving of study resources, modernization of environmental studies, expansion of employment opportunities for graduates, enrichment of marketing opportunities), especially for the study programme 'Environmental Innovation Technologies' licensed on 10.02.2021. and for the programme 'Smart Technologies' licensed on.17.03.2021.,
- more extensive integration of the circular economy paradigm into study programmes (especially 'Environmental Innovation Technologies'),
- inclusion of topics of special interest to the target audiences desired for the study programmes in the studies:
    - state and local government institutions: for example, labour protection, civil protection, cyber security
    - businesses: for example large agricultural enterprises, biophysical environmental sectors (terrestrial ecosystems, water bodies, air environment), high risk enterprises (bioreactors, landfills),
- development of courses for the promotion of students' innovative capacity, including in cooperation with the LiepU Art Research Laboratory,
- the development of laboratory projects stimulating the students' cognitive interests and applied skills (for example, material recycling, ecotechnology, biotechnology),
- expansion of research supporting the study (material recycling, aquaculture, seaweed resources, etc.).

The study programme development plans, in turn, also emphasize the specifics of each study programme. The results and feedback of the surveys of students, graduates and employers play an important role in creating programme development plans and regularly evaluating the results of their implementation.

Specific tasks for the further development of the new professional bachelor's study programme 'Environmental Innovation Technologies' are mainly focused on the content approbation and improvement of material and technical provision, but specific tasks in the development plan of the professional master's SP 'Ecotechnologies' - on strengthening cooperation with other HEIs and research institutions in Latvia and abroad, and activating involvement in research projects.

The professional bachelor's programme 'Environmental Innovation Technologies' developed within the SGS 8.2.1.2 project 'Reduce the fragmentation of study programmes and strengthen the sharing of resources' has successfully received a license and in autumn of 2021 will replace the existing EREME programme. The goal of the new programme will be to train competitive specialists in the field of **environmental engineering.** Graduates obtain a professional bachelor's degree in environmental engineering and a professional qualification of an environmental engineer. A significant difference from the existing EREME programme is also that 'Environmental Innovation Technologies' will be implemented in both Latvian and English, thus giving foreign students an opportunity to study therein.

The main differences in the content of the programme are the increased amount of practically oriented study courses and the attraction of new lecturers - professionals in the field. The programme is structured by creating three thematic groups of professional specialization courses, which are acquired by all students during the programme. In the first of them, engineering skills related to environmental quality measurements, sensors and their systems and prototyping of environmental technologies are acquired. The second group includes the computer skills required for the work of an environmental engineer, especially 2D and 3D engineering graphics, using the most popular software solutions in the industry. In its turn, the third group includes study courses focused on the creation of innovations, the specifics of which were chosen in accordance with the topics of research conducted in the field of environment of the Liepaja University and the fields of science represented by the teaching staff. In order to save resources, general education courses and separate technical orientation courses as a technical schedule will be implemented together with the FSE programme 'Smart Technologies' developed within the framework of the same project.

The content planning of the programme 'Environmental Innovation Technologies' will ensure that EREME students, starting the 2020/2021 academic year will be able to continue studies in the new programme.

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 programmes of the field of study 'Environmental Protection' are implemented by the LiepU

Faculty of Science and Engineering (FSE). FSE was established on 2 September 2013 (LiepU Order No. 35 - v of 2 September 2013, On the Reorganization of the Faculty).

The faculty operates in accordance with the document 'Regulations on the Faculty' (approved at the meeting of the LiepU Senate on 26 May 2014, Minutes No. 11) and the LiepU strategic planning documents.

The work of the faculty is organized by the dean, methodologist, secretary and rapporteur in cooperation with **the directors of the study programmes and the heads of the fields of study.** The Regulations on Programme Directors and Heads of Fields define their duties, rights and competencies **(Annex II.1.4._B)**

Research-based studies are provided by FSE in cooperation with the Institute of Science and Innovative Technologies (ISIT).

The circulation of information at the faculty is ensured by the dean's office. Meetings of the Faculty Council and teaching staff take place at least once a month. The fields of study under the supervision of the faculty (including Environmental Protection) are managed by the Study Councils, but their implementation is evaluated and controlled in the work of the Faculty Council meetings (the Council approves all documents related to study implementation), faculty meetings, working groups of the staff of the relevant study area.

The implementation of the environmental protection field of study takes place in cooperation with other LiepU faculties (coordinated by FSE Council), because the multi- / interdisciplinary content of the field programmes inevitably determines the need for involvement of teachers of various specializations, as well as relevant discussions in a multidisciplinary team.

The management of the field of study takes place in accordance with the documents approved by the LiepU Senate, regulating the mutual relations of the administrative, academic staff and students, based on the principles of democracy, for example:

1. Regulations of undergraduate and graduate studies;
2. Code for academic integrity at Liepaja University;
3. Regulation on Final Examinations, State Examinations and State Final Examinations;
4. Provisions on Mutual Duties and Rights of Teaching Staff and Students;
5. Regulations of study course/module examinations;
6. LiepU Internal Order Regulations for Students;
7. Rules of Procedure for the Liepaja University Staff;
8. Regulations of Liepaja University Intellectual Property Management.
9. Rules on the use of Online communication tools for the provision of the study process

Study direction`s management efficiency appropriately reflects quality requirements and has been permanently improved; management structure has been revealed in Annex II.1.4._A

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 LiepU Admission Regulations for each academic year are approved by the Senate:

- Rules for admission in undergraduate studies for study year 2020 - 2021 (https://www.liepu.lv/uploads/dokumenti/studentiem/Uznemsanas%20noteikumi%20pamatstudijas_2020_2021_st.gadam-1.pdf)
- Rules for admission in master studies for study year 2020-2021 (https://www.liepu.lv/uploads/dokumenti/studentiem/Uznemsanas%20noteikumi%20magistrantura_2020_2021_st.gadam.pdf)

The rules of admission describe the mandatory and additional requirements for the applicant's previously acquired education specified in the study programmes - CE (centralized examination) or ITIE (international test), FM (final mark), SE/T (state examination or test) in a certain subject, also entrance examinations.

The LiepU QMS contains developed procedures that regulate the technical process of admission:

- Unified application for undergraduate studies, regulating the admission process for undergraduate students, using the e-service www.latvija.lv/ studies.
- Registration of a person in the list of 1st year students, which regulates the admission process in master's degree studies and additional admission.

Admission requirements and entrance examinations for the field 'Environmental Protection' are also indicated on the websites https://www.liepu.lv/lv/584/vides-parvaldiba-un-inzenierija (SP EREME, will be replaced by Environmental Innovation Technologies) and https: //www.liepu .lv / en / 935 / ecotechnologies (SP Ecotechnologies)

Liepaja University has **Regulations for recognition** of the competences acquired outside formal education or through professional experience and of learning outcomes achieved in prior education; these documents are stored on site https://www.liepu.lv/en/61/documents-and-regulations :

- Liepaja University Regulations for recognition of the competences acquired outside formal education or through professional experience and of learning outcomes achieved in prior education
- Procedures for commencing studies at later study stages at Liepaja University
- Procedures for the recognition of study courses at Liepaja University

During the reporting period for the study direction "Environmental Protection" **there were no any case** of recognition of study results achieved within the previous education or competences acquired within professional or non-formal education.

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.

In the 1st year, when starting studies, the students of the bachelor's and master's programmes are introduced to the requirements and resources of the programme (classes 'Introduction to studies'). After that, at the beginning of each study course, students are indicated the requirements for earning credit points. Descriptions of the study course with requirements are also published in the

e-learning environment Moodle and in personal profiles in the LAIS database.

Lecturers control and evaluate study activities by using various forms and methods, such as seminars, independent work, tests, problem solving, business games, defence of research / internship projects, etc.

Each course has intermediate tests (1 or more) and a written final test (exam); for each test paper, the percentage weight (partial contribution) in the total mark is indicated.

The specific rating methods chosen, depend on the specifics of the study course and the requirements set, which are reflected in the descriptions of the study course.

In the study process, lecturers use methods, examination forms and rating criteria corresponding to the study goal and planned study results. Students receive support and feedback from lecturers in the study process. Rating gives students an opportunity to show the extent to which they have achieved the expected learning outcomes.

The Regulations of Study Course/Module Examination (https://www.liepu.lv/en/61/documents-and-regulations) stipulate the procedure for organizing and conducting the examinations, which also stipulate the principle of achieving and evaluating the results.

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.

The code for academic integrity at Liepaja University has been developed and approved within the framework of the LiepU project 'Ensuring Better Governance at the Liepaja University' (SGS No. 8.2.3.0/18/A/017) (LiepU Electronic Senate meeting of 14 December 2020, Minutes No.6), see https://www.liepu.lv/uploads/dokumenti/LiepU%20Akademiska%20godiguma%20kodekss.pdf

Work continues on the development of rules and procedures for academic integrity and ethical principles in higher education to be included in the study process.

Experience has already been gained in the operation of the unified computerized plagiarism control system, which is also used to check the final theses of LiepU students in order to successfully combat plagiarism. This system is also used by the University of Liepaja.

The inter-university communication activities helped to form the notion that the higher education institutions of Latvia must co-operate in the field of academic integrity - a common system for testing plagiarism must be used, the definition of plagiarism, as well as uniform penalties in case of detection must be clearly defined. Therefore, there is a need for improvement in the preventive work of higher education institutions by educating students, teachers, as well as scientists in this field.

It is planned that the basic principles of academic honesty will be incorporated in the descriptions of study courses; the teaching staff and students will be informed about the procedure for observing these principles.

Currently, all final theses at LiepU are already officially **checked in the** inter-university **unified computerized plagiarism control system** after the official submission to the faculty (see

https://www.liepu.lv/lv/296/izlaidumi-valstsgala-parbaudijumi).

In order to be able to perform verification in the unified plagiarism control system, students must convert the electronic copy of the final test paper or state test paper, which also includes annotations in Latvian and one of the foreign languages, into PDF (*Portable document format*) and upload it to the Liepaja University Information System (LAIS), using the username and password assigned by LANET (in the new version). The student must upload the paper according to the Final / State examination schedule. When submitting the printed version of the paper, the person authorized by the dean checks whether the electronic version of the paper has been uploaded to LAIS. The submitted paper version must match the downloaded electronic paper version.

During the reporting period, within the study programmes corresponding to the field of study 'Environmental Protection', by testing all final theses in the unified computerized plagiarism control system, a match of more than 30% was not found for any student.

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 corresponding undergraduate study programmes included in the field of study can be viewed on the LiepU website: https://www.liepu.lv/lv/1133/studiju-programmas (currently it contains information about EREME; it will be replaced by the 'Environmental Innovation Technologies' licensed on 10.02.2021, wherein studies will start in autumn 2021 (Environmental Innovation Technologies - Liepaja University (liepu.lv)))

Information about the master's study programme included in the field of study can be viewed on the LiepU website: https://www.liepu.lv/lv/590/pilna-laika-studijas (https://www.liepu.lv/lv/265/magistrantura); information on the specializations of the study programme 'Ecotechnologies' was specified (Ecotechnologies (1,5 years) - Liepaja University (liepu.lv))

Rules of admission for the field of study and the study programmes included in it can be viewed on the LiepU website: https://www.liepu.lv/lv/1254/uznemsanas-noteikumi-2020-2021

Apply online! - Liepaja University (liepu.lv)

Jana Jansone, the Secretary of the LiepU Admission Commission (information available only in Latvian) is responsible for the published information about the field of study and the corresponding study programmes: https://www.liepu.lv/lv/kontakti/123/jana-jansone

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.

In the 2016 Senate meeting the Liepaja University Development Strategy 2016-2020 was approved. In the strategy the overall goal of LiepU is defined – "provide acquisition opportunities of higher professional, academic education and life-long education based on research, necessary for the region, on Latvia and international scale competitive and qualitative, promoting development of national economy based on knowledge and professional competences and strengthening of creative, culture-orientated society" and the goals of the study and life-long education development, goals of scientific work, research and innovation development, goals of human resources management, goals of finance management and goals of project management with effective indicators are stated.

This strategy is still in force since new Liepaja University development strategy 2021–2027 is under preparation yet: see LiepU Senate decision about extension of previous strategy (*excerpt from Protocol* No. 7, 25.01.2021.) – Annex **'II.2.1.A_Lemums_par_LiepU_attistibas_strategijas_pagarinasanu'** (Latvian only) and https://www.liepu.lv/uploads/dokumenti/LiepU_attistibas%20strategija%202016-2020_pagarinata%20lidz%202023.gadam_25.01.2021.pdf

In order to guarantee achievement of the overall goals and goals, LiepU has to take into account the external requirements for the quality assurance and the cooperation partners and involved parties' opinion. To implement the overall goal and goals, LiepU uses the development and planning documents and internal Quality Management System (hereafter – QMS). In the LiepU QMS there are the databases and procedures of the internal normative documents.

In the LiepU QMS there are procedures which regulate the study process – enrolment, course of studies, practices, opportunities of ERASMUS+ studies, final/state examinations. There are procedures on the teaching staff assessment, survey of students' general satisfaction, clarification of graduates and employers' opinion.

In the system there are also described procedures which guarantee support for the study process provision – personnel management, finance management, management of IT, library and economic resources, management of documents, project management, management of information circulation and public information management, as processes of science and research management.

All LiepU employees are responsible for the implementation, maintenance and development of the Quality policy, procedures and management system, they take responsibility for the quality and get involved in the quality assurance.

Formulations of the employees' responsibility, rights and duties are indicated in job descriptions and procedures for all working functions affecting work quality.

Quality assurance in study programmes shall take place in accordance with the university quality management system based on European quality assurance guidelines and standards. In ensuring the quality of each study programme and its monitoring, Study Council meetings are regularly

organised, in which the directors of the study programme, in cooperation with the programme academic staff, students, graduates and employers, carry out an evaluation of the programmes. The views of all involved parts are taken into account and thus contribute to the development of study programmes, according to the requirements of professionals in the sector and labour market, as well as to the opinions of students and the experience of graduates, by initiating or continuing professional development.

LiepU normative documents and QMS determine continuous improvement, development and work efficiency of the study direction. To prepare the self-assessment reports of the study direction, there must be the development plan of the study direction and its execution analysis.

In order to reach the main strategic goal of LiepU (to ensure high-quality studies and the development of the field), tactical action is carried out, such as communicative activities (methodological discussions of the academic staff, board meetings of the FSE Council, LiepU councils, including those of the study field 'Environmental protection', informal debates with students, communication with working alumni, consultations with representatives of the field and employer organisations, etc.), field expert attraction to teach courses, staff involvement in professional development events (especially in 8.2.2. SAM project), dealing with field lecturer research differences and goal orientation towards study content reflection (topics — ecotechnology and biotechnology, circular economy, material recycling, environmental engineering and ecological engineering). Even experts of LiepU FSE & ISIT have advised narrowing down the spectrum of scientific research in accordance with the International Evaluation of Scientific Institutions (2019; reporting period: 2013–2018).

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.

To guarantee and implement execution of the overall goal and goals mentioned in the LiepU Development Strategy 2016-2020, LiepU applies the development and planning documents and the internal quality management system (QMS) (see the **Scheme of LiepU Quality Assurance** in **Figure II.2.2.A. in Appendix**).

In 2019 LiepU established Study direction councils (**II.2.2.Annex B**), which organize and undertake the development and implementation of study programmes. Study direction council consists of dean from the relevant faculty, head of the study direction, study programmes' directors, representatives of academic staff, students (at least one student per every study programme of the study direction) and employers' representatives. One of the main tasks of the Study council is to monitor the implementation of study programmes in study directions and to examine and accept the annual self-assessment report of the study direction, and submit it to the Faculty Council. The study direction self-assessment report consists of description of study programmes, which analyses the results of each study programme survey of students, graduates and emlpoyers.

Only the EREME and ‘Ecotechnologies’ study programmes were analysed in the reporting period self-assessment reports, and students were surveyed (see list of study programmes in the field of Environmental Protection, **II.2.2 Appendix**); as to the EIT programme, such an evaluation can only be carried out after the start of the programme, namely in academic year 2021/2022.

At the beginning of the 2nd semester of each study year, a student general satisfaction survey **is conducted**. Survey reaches all LiepU students through LAIS. The results of the survey are available on LiepU KVS (Quality management system), the results are prepared both by the faculty section and for each study programme seperately, which, respectively, is included in the study direction self-assessment report and description of the study programme. The satisfaction of employers is analysed by surveying the heads of final/national test committees, as well as including the answers from internship evaluation forms about student theoretical knowledge, skills and recommendations for future studies and work. Every study year an electronic survey of graduates is conducted, based on collected contact information of graduates. The results of the survey are prepared both by the faculty section and for each study programme seperately, which, respectively, is included in the study direction self-assessment report and description of the study programme.

In the LiepU QMS, procedures are made which regulate formation, licensing and accreditation of study programmes. On the basis of changes in the study programme/direction accreditation, the database of normative documents (procedures, regulations) have been developed, which help to introduce both new study directions and programmes. Separate procedures state both preparation, approval and change management of the study course and study plans. Procedures are created which regulate execution of the annual study plan of classes and their change management, also preparation of the timetable and management of changes.

In the LiepU QMS, procedures are made which regulate the study process – enrolment, course of studies, practices, opportunities of exchange ERASMUS+ studies, final/state examinations. Procedures are made for the teaching staff assessment, survey of students’ general satisfaction, clearance about graduates and employers’ opinions.

Activity of the representatives delegated by the LiepU Student Council is active in the development of regulations, rules and other normative documents and their execution control. Students participate in the following LiepU institutions: in the LiepU Constitutional Assembly, LiepU Senate, Councils of Faculties, Council of Studies, Science Councils, Library Council, Scholarship Granting Commission, LiepU Senate’s Scholarship Granting Commission, Councils of Study Programmes.

During the accreditation reporting period, a new programme has been developed, prepared and licensed within the field of Environmental Protection — the professional bachelor’s study programme ‘Environmental innovation technologies’. It was developed as part of the ESF project 8.2.1.0/18/A/010 ‘Reducing the fragmentation of study programmes and strengthening the sharing of resources in LiepU’. Five experts — academic staff from LiepU and field professionals — participated in the working group. Employers and field organisation representatives from companies such as ‘Vides un ģeoloģijas serviss’ Ltd and ‘Zaļo un Viedo Tehnoloģiju Klasteris’ were invited to provide consultations. During the development process, regular communication took place with the cooperation partners of the Faculty of Science and Engineering — ‘Liepājas enerģija’ Ltd, the Environment Department of Liepāja City Council, etc.

Project experts and corresponding academic staff were involved in the preparation of study course descriptions and a standard plan. The process of the development of the study programme and its

results were regularly evaluated and discussed at the Council of the Faculty of Science and Engineering, where, in accordance with the Law on Higher Education Institutions, students also take part, thus ensuring that students have a say in regards to the study programme in development.

The programme was developed in accordance with the LiepU study programme development and approval procedure, and it was reviewed and improved as a result of a series of discussions, first, in terms of the study field, then at the Council of the faculty and the Study Council, and, lastly, at the Senate of LiepU where the final approval was given.

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.

On the first year of studies LiepU students have a study course ''Introduction to studies'' in which they are introduced to the specifics of study programme, its' objectives, tasks, contents and study process organization. Liepaja University internal order regulations for students (https://www.liepu.lv/en/61/documents-and-regulations) states that the students have rights to "submit proposals to the administration in all matters concerning the activities of students in LiepU as well as the work of teaching staff and other staff; to receive an answer withing the time limit specified, as well as to receive an answer about all matters directly related to studies and career possibilities".

On the other hand, LiepU administration has the obligation to "read student proposals and critical remarks, to make measures to improve work". The responses to student proposals shall be provided in accordance with the procedures specified in regulatory enactments, as well as included in study direction self-assessment reports, indicating the changes made in study programmes.

The procedure for submitting complaints and proposals: the student submits a written application to the dean’s office or emails it to the dean’s office or the programme director. The application is registered on DMS ‘Namejs’ and the tasks are sent to the responsible individual — the dean, the programme director, the responsible member of the academic staff or another manager of the LiepU institution. Deadline for review — 10 working days. If necessary, a question might be included and reviewed in an FSE Council meeting, and a decision might be made. The applicant and the responsible person is informed about the response or action to be taken. If necessary, the FSE is ready to cooperate with other departments of LiepU to solve an issue.

In addition, all students are heard out on workdays via phone, email or on-site at the dean’s office of the FSE or on the premises of LiepU.

During the reporting period, the Environmental Protection study field has received no complaints from students; student proposals were reviewed during the study process (in seminars, consultations).

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.

Every year on October 1, statistics data are collated about the number of students, number of the matriculated, number of graduates, number of academic staff – they are included and analysed in the report of the study direction self-assessment. In LiepU procedures are developed which state the order how the annual surveys of students' satisfaction and graduates' surveys happen. In the study direction self-assessment reports the compliance of the study direction and study programme with the labour market demand, results of annual employers' surveys are analysed.

In the study direction self-assessment reports the information on the finance resources for the study direction to guarantee implementation of the corresponding study programmes, also to guarantee the academic staff's research (creative)activities are analysed.

Every year in the Senate the Admission results are analysed, assessment of the Scientific work and analysis of Financial and economic activity is carried out.

The LiepU study environment parameter evaluation results (especially the analyses of student surveys) are used to improve certain study fields, for example, partial overlap of the contents of several study courses is prevented, changes are made in the volume of courses and their structure (including based on student proposals), field specialists and foreign guest lecturers are invited to teach courses, certain lecturers are switched (as requested by students), academic staff is involved in professional development 8.2.2. SAM project (incl. development of English language skills and enrichment of practical competencies related to the field through internships with entrepreneurs), expansion of study visits to companies in the field (halted during the Covid-19 pandemic), participation of students in the annual international student scientific conference jointly organised by Klaipeda and Liepaja Universities (organised remotely during the pandemic), improvement of laboratory equipment (within financial possibilities), etc.

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.

Compliance of the internal quality assurance with the ESG standard requirements can be seen in the table in Appendix, in which the corresponding documents approved by the LiepU Senate or the Rector's orders are indicated for every ESG criterion, also the corresponding procedure of the QMS which testifies the compliance of the University work to the standard.

The ESG Part 1 standart 1.6 "Learning resources and support for students" is considered to be a

challenge in LiepU, the standart states that "universities/colleges must have adequate funding to provide learning and teaching activities and to guarantee adequate and easily accessible range of learning resources and support for students. The main challenge is to provide the needs of "diverse" students (e.g. age, part-time, employed, international students, as well as students with special needs) as identified din the guidlines, the transition to student-centred education and the flexible forms of teaching and learning are taken in to account when identifying, planning and providing educational means and student support".

Increased attention is paid to ESG Part 1 standart 1.7 "Information management", which requires universities/colleges to collect, analyse and use the necessary information for effective programme management and other activities.
See the explanatory table in **Appendix II.2.5.A** under "Other attachments".

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.

Funding

Evaluation of the provision of financial resources for the achievement of the set goals and evaluation of the financial planning mechanism

In order to ensure qualitative implementation of the field of study, it is important for the Liepaja University (LiepU) to perform financial flow planning and budgeting for each year. The financial resources of the field of field of study of the state budget grant (most of the budget income) and own revenues (tuition fees), see **Figure 3 (Annex II.3.1.A.**). Study programmes are funded in accordance with the cost of the education programme set by the Cabinet of Ministers. The tuition fee is covered from the funds of natural and / or legal persons, i.e. student's personal funds, the personal funds of the student's parents and other relatives, the funds of the student's employer, the study loan with a guarantee provided on behalf of the state. The amount of tuition fee and payment procedure for each study year are determined and approved by the LiepU Senate. Students can choose an individual payment schedule according to their financial capabilities. In order to increase the number of students by using a marketing and sales strategy, the Liepaja University offers tuition fee discounts and implements various promotions. Tuition fee discounts and other payments related to the study process are approved by the Senate for each academic year. The provision of financial resources is stable. **The basic costs of a study place per one place financed from the state budget in 2021 were established at EUR 1,630.11, while in 2015 - EUR 1,333.11. During the reporting period, the tuition fee for the bachelor's study programme ‘Environmental and Renewable Energy Management and Engineering’ was**

increased from EUR 1,410 to EUR 2,170 and for the master's study programme ‘Ecotechnologies’ from EUR 1,580 to EUR 2,440.

Study place costs per student and their evaluation.

The study funding from the State budget is granted every calendar year in accordance with the Cabinet Regulation No. 994 of 12.12.2006. ‘Procedures for Financing Higher Education Institutions and Colleges from the State Budget’ and an agreement between the Ministry of Education and Science and the Liepaja University on the training of a certain number of specialists.

The base costs set in 2019 (EUR 1,518.98 per one study place) and the coefficient of the thematic area of education in the field of ‘Environmental Protection’, established by the Ministry of Education and Science - 1.9, as well as the cost coefficient in the professional bachelor’s study programmes: 1.00, have been used in the calculations of the planned costs of the bachelor study programme ‘Environment and Renewable Energy Management’ and Engineering” for full time studies in the academic year of 2019-2020. The cost of one study place in 2019 is EUR 2,886.06.

Tuition fee for full-time studies approved by the LiepU Senate in the academic year of 2019/2020 for the 1st year students is EUR 2,170, and it is fixed for the whole study period, the total acquisition fee for the study programme for 4 years is EUR 8,680.

The base costs determined in 2019 (EUR 1,518.98 per study place) and the coefficient of the thematic area of education in the area ‘Environmental Protection’ set by the Ministry of Education and Science: 1.9. as well as the cost coefficient in the master’s level study programmes: 1.5, have been used in the calculation of the planned costs for the full-time studies in the study programme ‘Ecotechnologies’ for 2019-2020. 1.5 The cost of one study place in 2019 is EUR 4,329.09.

Tuition fee for full-time studies approved by the LiepU Senate in the academic year of 2019/2020 for the 1st year students it is EUR 2,440 and it is fixed for the whole study period: the total study programme acquisition fee for 1.6 years is EUR 3,660; for foreign students it is EUR 2,800 and remains fixed for the whole study period: the total study programme acquisition fee for 1.6 years is EUR 4,200.

Evaluation of the percentage distribution of costs within the field of study

Total funding for the academic year of 2019/2020 for the field of study **(Fig. 1)** is EUR 163,452 **Fig.2** (**Annex II.3.1.A**) shows the percentage distribution of costs between study programmes. 65% of the costs are formed by the study programme ‘Ecotechnologies’. On 01.10.2019, there were 29 students in this full-time study programme, including 9 students from abroad. 35% of the costs are formed by the study programme ‘Environmental and Renewable Energy Management and Engineering’. On 01.10.2019, there were 15 students in this full-time study programme.

Cost planning of the field of study takes place together with the other implemented fields of study. Analysing the cost items of the basic budget, it can be seen **(Fig. 3)** that the largest cost item consists of remuneration, of which a relatively large part is formed by the teachers' remuneration and author's fees paid for teaching study courses and maintaining content. The second largest set of cost items consists of maintenance of buildings and premises, as well as costs directly related to the provision of student support and service, marketing costs and other technical maintenance costs, which are regularly reviewed and optimized, giving priority to easily accessible and enjoyable on-site study environment. Costs for the purchase of literature, subscriptions to periodicals and electronic databases are included in the general basic budget of LiepU. Study and research resources in the LiepU library are provided for all field of study programmes.

In general, the cost structure is assessed as optimal and in line with the development strategy.

Scientific research and / or financial provision for artistic creation

Research funding consists of several sources: Basic funding for scientific activities granted by the Ministry of Education of the Republic of Latvia (in accordance with Cabinet Regulation No. 1316 'Procedures for Calculating and Granting Basic Funding to Scientific Institutions'): for the maintenance of elected scientific staff, scientific infrastructure, as well as for partial support of research work to academic staff: professors, assistant professors and docents performing scientific work), Performance funding, funds raised through a tender (internal grants, project co-financing, projects), as well as the Liepaja University Research Activity Development Fund.

Due to the amendments made to the Cabinet Regulation No. 994 'Procedures for Financing Higher Education Institutions and Colleges from the State Budget', which provide performance funding for results in research and artistic creation, funding has increased over the last three years. The allocated funding for the previous year's results in research and artistic creation is used by the Liepaja University in accordance with the approved budget. To support the scientific activity of the academic staff involved in the field of study, funding is allocated from the development budget of the LiepU Faculty of Science and Engineering and the funding of the LiepU Scientific Activity Development Fund. Priorities have been set for receiving this funding: full or partial financial support for publications in the *Web of Science* and *Scopus* databases, in the humanities - also ERIH +; for full or partial financial support for publications in other industry databases (for example, EBSCO, etc.); development and publication of peer-reviewed scientific monographs; for preparation and publishing of LiepU scientific journals and continuing editions included in databases. The development budget of the faculty is also used for business trips to scientific conferences, participation fees therein, and support for student research.

Applications for scientific publications and conferences of the academic staff are reviewed and approved by the Faculty Council. In accordance with the Regulations of the Liepaja University Student Research Project Competition (approved on 15.12.2014. at the LiepU Senate meeting, Minutes No.4) students have access to funding for the promotion of scientific and creative activities.

Sources of funding and university / college tools to manage them

The LiepU total annual budget consists of a cash flow budget consisting of incoming and outgoing funds of the university. The financial resources for the provision of the study process at the Liepaja University are mainly composed of:

- transfers of the basic State budget for higher education;
- funds received from the paid services provided, including tuition fee revenue;
- deductions from the projects to cover centralized expenses;
- donations and gifts;
- revenue assigned for special purposes;
- other revenue of own funds;
- European Union structural funds financing;
- balance of funds in the basic budget bank account from the previous calendar year.

The total revenue is planned by the Director of Finance and Staff as well as, with the prior coordination of the Budget Commission, determines the limits of the total amount of the basic budget expenditures set for the structural units. Each medium-level manager, together with his / her subordinates, by taking into account the total expenditure limit set for the structural unit, plans

a detailed expenditure plan for his/her unit, which is submitted to the Budget Committee for approval. In order to avoid the situation that when setting limits on the amount of expenditure, the structural unit cannot achieve its operational goals, as well as to avoid the situation that new ideas related to the organization or structural units are not discussed and supported, the head of the structural unit has the opportunity to argue its opinion with the Budget Commission during the budget review process. It is the responsibility of the Budget Committee to hear the views of the heads of structural unit and take the final decision. The total basic budget of the university is prepared by the Director of Finance and Staff. The total basic budget is reviewed, evaluated and the final version is accepted by the Budget Commission and approved by the Senate.

After the approval of the total basic budget in the Senate, the responsible employee of the Procurement Commission prepares the common procurement plan for the current calendar year and organizes Public Procurements in accordance with the Public Procurement Law and the QMS procedure.

The Director of Finance and Staff carries out monitoring to ensure that budget compilers in the budget planning and execution process act in accordance with the instruction ‘Planning, Execution and Control of the LiepU Basic Budget’. Budget planning is carried out in accordance with QMS procedure A-2-1 ‘Basic Budget Planning’, while execution and control are carried out in accordance with procedure A-2-2 ‘Basic Budget Execution and Control’. Incoming and outgoing funds in the budget are divided into the main types of costs. The analysis of the funding provision takes place every year and is approved by the Senate.

In order to support and promote the activities of students' self-government, every calendar year, the Liepaja University and the Liepaja University Student’s Council renew the cooperation agreement and determine the allocated funding from the LiepU basic budget, which is not less than one two hundredth of the annual budget, according to Section 53 of the Law on Higher Education Institutions.

The results of economic activities are regularly reflected in the annual report and the auditors' opinion. The financial indicators of the Liepaja University indicate a stable financial situation.

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).

In order to ensure qualitative implementation of the field of study, the LiepU infrastructure and technical provision is used in the study process: in order to implement the study programmes, the university has the following technical provision:

- computers - 320 (of which 80 computers not older than 3 years);
- video projectors - 23;
- interactive whiteboards - 7;
- copiers - 6;
- photo, video cameras - 18 (11 photo cameras, 7 video cameras);
- Students in each of the study buildings have access to a free-access wireless network (a total

of 36 wireless network access points are installed).
- A workstation virtualization solution has been implemented and three computer classes are equipped with workstations for clients (a total of 63 workstations). Students create their own virtual computer, which is not attached to the workplace. This solution ensures the mobility and security of the study process.
- Modern network hardware has been installed, providing virtualization of the computer network, and a CAMPUS computer network connection has been established between all study buildings.
- Students have access to several databases of scientific publications - EBSCO, Letonica, ScienceDirect, SCOPUS, Web of Science, Cambridge Journals Online and Sage Knowledge.
- A cooperation agreement has been concluded with Microsoft on the lease of MS Office and MS Windows software licenses, which teachers can use both in the implementation of the teaching process and in the production of teaching materials. Within the framework of this cooperation agreement, both the LiepU lecturers and students have access to the MS Office 365, 1Tb file archive in the cloud, etc. at no extra charge.

The University uses information systems to ensure the study process:

- Library information system 'Alise',
- E-learning environment Moodle;
- Latvian higher education information system - LAIS.

Students of the Liepaja University are provided access to the study process accounting information system of Latvian higher education institutions (hereinafter - the LAIS) during the study admission process. The information system is available on the World Wide Web at www.lais.lv.

The laboratory equipment at the disposal of the FSE is also used for the technical support of the study programmes (indicated in Annex **II.3.2.A***;* see also Section III.3.1, Table 6).

To implement the field study programmes, the auditoriums, computer classes, a chemistry room, an environmental biology room, a science and computer control room, a physics laboratory, a prototyping laboratory and a paper recycling laboratory of LiepU will be used, as well as ISIT equipment, if necessary (for example, for the development of study and final theses).

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.

LiepU Library is the support for LiepU students and teaching staff in the study process and research (information about the Library is available in the library's section of LiepU site, for example, here: https://www.liepu.lv/en/85/contacts-and-opening-times). The aim of the library's activities is to ensure studies and scientific activities with printed works, electronic and other information

resources, as well as to be a centre for culture promoting national and regional cultural values. A collection is made and services are provided in the Library by implementing a goal of activities.

Library's collection and resources of databases

The library's collection comprises about 65 500 information resources (92% of books, 8% serial editions and other units of the collection). 75% of the entire collection is open display on shelves, so the teaching staff and students have chance to choose the most appropriate editions by themselves.

For ensuring the study process in the study direction "Environmental Protection" is offered literature according to the topics of the teaching courses, for example, environmental science, technology and engineering, environmental protection and monitoring, environmental economy and management, ecology, natural sciences (biology, chemistry, physics, mathematics), power industry, electronics, information technology, databases and programming, environmental design, environmental research and project management, etc. There are approximately 17% collection units of all the existing information resources that is at the library's disposal about the mentioned topics.

If there are no necessary information resources at the Library's disposal, there are offered services for Interlibrary subscription (ILS) and International Interlibrary subscription (IILS). Successful cooperation has been established with the document delivery service SUBITO, National Library of Latvia, etc. Latvian and foreign libraries.

The Library offers the use of free databases for the needs of both students and teaching staff by organising access to subscribed, trial and free-access databases within and outside LiepU computer network. The access to the subscribed databases outside LiepU computer network is provided in LiepU e-library interface (available on https://www.liepu.lv/en/88/e-journals-and-e-books). To access the databases remotely the user must use a VPN service. LiepU teaching staff (both being elected and invited) and students can apply for a VPN service by filling out an online request form and following instructions on setting up a VPN client on the computer (available here: https://serviss.liepu.lv/vpn-klienta-iestatisana-datora/).

At teaching staff and students disposal are such online databases subscribed by LiepU, such as "Letonika", "EBSCO eBooks Academic Collection", "EBSCO Academic Complete", "Cambridge Journals Online", as well as financially supported databases by MSC (Ministry of Science and Education): "ScienceDirect", "Scopus" and "Web of Science". Everyone has also the opportunity to use free-access databases made by the Library: Academic Staff publications database, Doctoral theses database and Final work database. In the databases within the study direction "Environmental Protection" are offered information resources on various topics of the teaching courses, such as: EBSCO e-books collection has 7370 editions according to key words: environmental science, environmental technology, environmental engineering, environmental management, ecotechnologies, ecology. The Library ensures training, inquiries and consultations in matters relating to the use of information resources and the use of services. In 2020, the databases subscribed by LiepU have been used in 25 000 connection sessions.

Library's infrastructure and services

In circumstances without Covid-19 pandemic restrictions the library is open to users for 55 hours in a week (working days from 9:00 to 18:00 or 19:00, on Saturdays till 16:00). A visit to the library in 2019 (without pandemic restrictions): on average of 150 users per day. At users' disposal is the Subscription (handing out and receiving information resources), Copying (copying, printing, scanning and binding of works), Group discussion room (at the request of users), as well as 96 independent workplaces for studies and research in the Reading room and Library's lobby, 16

computerized workplaces with the internet connection in the Reading room of Electronic Resources. Within the library's working hours users can use the self-service machine *(Self-Check)* to receive or transfer books which is located in the Subscription. Outside the library's working hours books can be handed over to the *Book-drop box* which is located in LiepU lobby. Throughout the Library is available the free wireless internet. Since 2011, the RFID security system has been used for identifying and protecting information resources of the library.

For nearly 30 years (since 1992) Library's activities have been automatized. In the Libraries' information system ALISE are automatized librarian processes such as the processing of bibliographic data, assembling, registration of readers, handing out/receiving information units, ordering/booking, remote access to WebPack, mobile WebPAC, etc. The electronic catalogue of LiepU Library (https://alise.liepu.lv/Alise/en/home.aspx) and the joint catalogue of Higher education institutions and special libraries (https://alise.liepu.lv/Alise/en/federatedsearch.aspx) are available remotely, both on computers and mobile devices. The electronic catalogue of the library provides a unified search for bibliographic information on both the collection and the local databases created. The remote access allows the user to connect from any place to the section "My Library" and follow the handing out of books, delivery deadlines, requesting an extension of the deadline, and booking or queuing the required literature.

You can find the most current information about the library's services and working hours on LiepU site in the Library's section (https://www.liepu.lv/en/85/contacts-and-opening-times), but regarding the information resources in the monthly newsletter of LiepU Library "Lasonis" (https://www.liepu.lv/lv/223/jaunieguvumi). LiepU Library also presents its current events on its social network profiles (Facebook, Twitter).

Procedures for replenishing the Library's collection and subscribing databases

The completion of the library's collection takes place in accordance with the necessities of study programmes, in cooperation with the teaching staff and students. In accordance with LiepU QAS procedure "A-10-II Completion of the Library's collection", the teaching staff shall fill out the "Request for the completion of the fund to the Department of Completion and Processing of LiepU Library". A request with recommendations for the purchase of information resources may be filled out and submitted by any faculty (both elected and invited). Students may submit recommendations for the purchase of information resources by filling out the published web form on LiepU site – in the section of the Library's collection (available here: https://www.liepu.lv/lv/1340/studenta-ieteikums-gramatas-iegadei) or in the section of the student application forms (available here: https://www.liepu.lv/lv/674/iesniegumu-veidlapas). Applications shall be reviewed in accordance with the policy of the library's completion.

The decision on the subscribtion of the specific databases is taken in several stages. Firstly, data has been analysed: (1) statistics on the use of free trial databases; (2) statistics on the use of subscribed databases over a period dynamics of several years. Attention has been payed also to the recommendations from the teaching staff. Secondly, the matter on the changes in the offer of databases is being discussed in the Library's Council, where are represented the teaching staff and students of all the faculties. Thirdly, the matter of subscribing databases is being discussed with the Director of Finance and Personnel, as well as with the vice-rectors for science and studies. The decision is taken when opinions are summarized.

Thus, the LiepU library ensures the accessibility of methodological and informative material, in accordance with the needs of the Environmental protection study field.

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.

Electronic link for the regulation of the process of attracting and/or employment of teaching staff: https://www.liepu.lv/lv/181/darba-iespejas

In order to ensure high-quality and innovative implementation of the study programme, several criteria are used for the selection of teachers, to ensure that study courses are taught by qualified, scientifically and methodically prepared lecturers, specialists of the specified field of study, using modern approaches and technologies in their work.

The mandatory selection criteria for teachers are:

- compliance of the qualification of the teaching staff with the requirements specified in the laws and regulations;
- the field/interests of scientific research correspond to the content of the study programme / course;
- adequate knowledge of the state language and foreign languages.

The selection of the teaching staff in the implementation of the study programmes is carried out on the basis of the Criteria for the Assessment of the Compliance of the Professional Qualification of the Academic Staff with the Taught Courses (Approved by the LiepU Study Council on 13.06.2005).

The professional qualification of the academic staff is assessed by the Faculty Council.

The evaluation criteria are as follows:

- In academic (bachelor's, master's) programmes -

- Doctoral, master's degree according to the course to be taught or a related field;
- Publications in the subsector or in the field of artistic creation.

- in professional and professional bachelor's, master's programmes

- Doctoral, master's degree according to the course to be taught or a related field;
- Publications in the subsector or in the field of artistic creation.
- Professional activity according to the course to be taught at least 5 years;
- Relevant higher professional education.

The requirements set for the teaching staff-applicant are determined in accordance with the LiepU Regulations on Elections in Academic Positions, and the person has a doctoral or master's degree in a relevant or related field of science, has research / creative work experience, has publications / creative work in a relevant or related field of science, the person has experience in developing or improving teaching materials, the person uses innovative teaching methods in the study process, the person has a good knowledge of English (at least at B1, B2, C1 level according to the Europass self-assessment table) and the ability to use language skills in studies and methodological work; the person has good digital skills according to the Europass self-assessment table, as well as knowledge of new technologies.

The requirements for the selection of foreign teaching staff and participation in the implementation of the study programme are specified in the LiepU Academic Staff Development Action Plan for 2018-2022 (see the section 'Other Annexes' in **Annex II.3.4.B**).

In accordance with the Law on Higher Education Institutions (https://likumi.lv/doc.php?id=37967) and the LiepU 'Regulations on Elections in Academic Positions' of 20 June 20211 (https://www.liepu.lv/lv/ 672 / regulations), both residents of the Republic of Latvia and foreign residents may be elected to academic positions, as well as their election to academic positions is regulated by the above-mentioned laws and regulations.

Application, selection procedure and criteria for foreign academic staff (in accordance with the 'Academic Staff Development Action Plan', page 39)

1. An open tender is organized for the selection of doctoral students and applicants for scientific degrees by publishing a notice in the official publication 'Latvijas Vēstnesis', the European Commission portal 'Euraxess' and the website of the Ministry of Education and Science izm.gov.lv.
2. The requirements set for applicants are determined in accordance with the LiepU 'Regulations on Elections in Academic Positions' (https://www.liepu.lv/lv/672/nolikumi) and uniform specific requirements for additional fields 'Art', 'Management, Administration and Real Estate Management', 'Information Technology, Computer Technology, Electrical Engineering, Telecommunications, Computer Management and Computer Science', 'Environmental Protection' and 'Education, Pedagogy and Sports':

- a person who has been employed in an academic position in one of the accredited foreign higher education institutions during the previous five years,
- the person has a doctoral degree in a relevant or related field of science (at least a master's degree in the field of art),
- the person has research / creative work experience,
- the person has publications / creative works in a relevant or related field of science,
- the person has experience in the development or improvement of teaching materials,
- the person applies innovative teaching methods in the study process,
- the person has a good knowledge of English (at least at C1 level according to the Europass self-assessment table) and the ability to use language skills in studies and methodological work,
- the person has good digital skills according to the Europass self-assessment table, as well as knowledge of new technologies.

The submitted documents evaluated within the selection:

- an application addressed to the rector,
- CV in Europass template format,
- a copy of diploma of scientific degree / copy of master's diploma,
- list of publications (creative works) for the last five years.

1. Within the framework of SGS projects, the applicant's motivation to get involved in the project and the desire to continue cooperation with LiepU after the completion of the specific SGS project will also be assessed during selection of applicants.
2. Applicants are evaluated by a tenderer evaluation commission established by the order of the Rector.
3. Applicants are elected to the LiepU academic staff in accordance with the LiepU 'Regulations on Elections to Academic Positions'.

In accordance with the Law on Higher Education Institutions (https://likumi.lv/doc.php?id=37967) and the LiepU 'Regulations on Elections in Academic Positions' of 20 June 2011 (https://www.liepu.lv/lv/ 672 / regulations) persons are elected to LiepU academic positions in an

open tender.

Taking into account the need to acquire practical skills and knowledge, a person with higher education without a scientific doctoral degree or without a professional doctor's degree in arts may hold the position of assistant professor, lecturer and assistant in professional study programme profile subjects, if he or she has sufficient practical work experience. In order to elect a person who does not have a scientific doctoral degree or a professional doctoral degree in arts, this person needs at least seven years of practical work experience. The requirements to be set for applicants for the position of such assistant professor at the higher education institution and college shall be approved by the senate or the council, respectively. Lecturers and assistants not having a scientific or academic degree need five years of practical work experience corresponding to the subject to be taught (in accordance with Section 39 of the Law on Higher Education Institutions and LiepU 'Regulations on Elections to Academic Positions').

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.

Procedures for ensuring the qualification and quality of work of the academic staff:

The qualitative composition of the lecturers working in the field of studies complies with the Law on Higher Education Institutions of the Republic of Latvia and the requirements of the Cabinet Regulation No. 512.

The qualification of the academic staff involved in the implementation of the field of study corresponds to the specifics of the study programme and the conditions of implementation. The teaching staff consists of professionals in their fields of science, who have proved their competence in the field research and use of the e-environment in the study process, have participated in various international projects, developed study course and teaching aid materials.

Opportunities offered by improvement of qualification:

The improvement of the professional qualification of the teaching staff takes place in accordance with the standards and criteria of the LiepU quality management system, which are supervised and provided a feedback by the head of the field of study, the programme director and the field of study council.

The criteria used for the work quality monitoring are as follows:

- student rating (LiepU QMS questionnaire);
- teachers' self-assessment;
- study internship evaluation indicators (QMS practice evaluation questionnaire);
- effective involvement in didactic competence improvement measures, incl. preparation of didactic seminars, observation of study classes, participation in lifelong learning, etc.

In order to improve the quality of scientific and pedagogical activities of the teaching staff, in 2018,

three medium-term planning documents were developed and aimed at the development of LiepU human resources.

LiepU Human Resources Development Plan for 2018–2023 (see section 'Other Annexes' in Annex **II.3.5.B)** - which assesses the current situation, certain human resources management process goals, tasks to be performed and results to be achieved.

The aim of the LiepU Human Resources Development Plan is to provide LiepU with the necessary human resources, promote the development of existing human resources (academic and general staff), professional growth and improvement, inclusion of new teaching staff and research staff in the university education and research process to ensure modern, development-oriented studies, research, lifelong learning in accordance with the LiepU development strategy.

The LiepU Human Resources Development Plan for 2018–2023 was developed in accordance with:

1. The current laws and regulations of the Republic of Latvia;
2. LiepU Constitution (available: https://www.liepu.lv/lv/172/satversme);
3. LiepU Development Strategy for 2016–2020 (available: https://www.liepu.lv/uploads/%C4%80SD/ERASMUS%20dokumenti/Liepaja_University_Development_Strategy_Summary_2016-2023_25.01.2021.pdf)
4. LiepU Teacher Education Development Plan for 2018–2023;
5. Identified requirements included in the World Bank report 'International Trends and Good Practices in Internal Financing and Governance of Higher Education' (available at: https://www.liepu.lv/uploads/%C4%80SD/ERASMUS%20dokumenti/Liepaja_University_Development_Strategy_Summary_2016-2023_25.01.2021.pdf);
6. Projects of the Action Programme 'Growth and Employment' of the European Union Structural Funds and the Cohesion Fund 2014-2020 programming period, European Social Fund and European Regional Development Fund:

- Specific Support Objective 1 'Reduce the fragmentation of study programmes and strengthen the sharing of resources',
- Specific Support Objective 2 'Strengthen the academic staff of higher education institutions in the fields of strategic specialization',
- Specific Support Objective 3 'Ensure better governance in higher education institutions'.
- Measure 1.1.1.2. 'Support for post-doctoral research' of the Specific Support Objective 1 'To increase the research and innovative capacity of the Latvian scientific institutions and their ability to attract external funding by investing in human resources and infrastructure',
- Measure 1.1.1.5 'Support for international cooperation projects in research and innovation' of the Specific Support Objective 1 'To increase the research and innovative capacity of the Latvian scientific institutions and their ability to attract external funding by investing in human resources and infrastructure', etc.

LiepU Academic Staff Development Action Plan for 2018–2022 is a staff development and attraction action plan, defining and describing the planned academic staff competence improvement, development and attraction measures.

The goal of the LiepU Academic Staff Development Action Plan for 2018-2022 is to ensure the increase of competencies and skills of LiepU academic staff, promote the development of staff and LiepU activities in accordance with quality requirements.

The LiepU Academic Staff Developed Action Plan for 2018–2022 has been developed in accordance with:

1. LiepU Constitution (available: https://www.liepu.lv/lv/172/satversme);

2. LiepU Development Strategy (available at: https://www.liepu.lv/uploads/dokumenti/LiepU_attistibas%20strategija%202016-2020_pagarinata%20lidz%202023.gadam_25.01.2021.pdf);
3. LiepU Human Resources Development Plan for 2018-2023;
4. LiepU Teacher Education Development Plan for 2018-2023 (see section 'Other Annexes' in Annex **II.3.5.B**);
5. LiepU Scientific Activity Strategy for 2015-2020 of the Scientific Institution 'Liepajas University' (available at:https://www.liepu.lv/uploads/files/LiepU%20Zinatniskas%20darbibas%20strategija_2015_2020.pdf);
6. Projects of the Action Programme 'Growth and Employment' of the European Union Structural Funds and the Cohesion Fund 2014-2020 programming period, European Social Fund and European Regional Development Fund:

- Specific Support Objective 1 'Reduce the fragmentation of study programmes and strengthen the sharing of resources',
- Specific Support Objective 2 'Strengthen the academic staff of higher education institutions in the fields of strategic specialization',
- Specific Support Objective 3 'Ensure better governance in higher education institutions', etc.

LiepU Management Staff Training Plan for 2018–2021 - which defines and describes the planned management staff competence improvement measures.

Objectives of the LiepU Management Staff Training Plan: Enhancing the competencies and skills of LiepU management staff for professional administration of management processes, a management team with a vision of a modern, competitive international university that understands global trends, a management team that can inspire students and employees for rapid and ambitious development.

The LiepU Management Staff Training Plan has been developed in accordance with:

1. LiepU Constitution (available: https://www.liepu.lv/lv/172/satversme);
2. LiepU Development Strategy for 2016-2020 (available at: https://www.liepu.lv/uploads/%C4%80SD/ERASMUS%20dokumenti/Liepaja_University_Development_Strategy_Summary_2016-2023_25.01.2021.pdff);
3. LiepU Human Resources Development Plan for 2018-2023;
4. Identified requirements in the 'International Trends and Good Practices in Higher Education Internal Funding and Governance' (available at:http://www.izm.gov.lv/lv/images/izglitiba_augst/Pasaules_Banka/Starptautisk%C4%81s_tendences_un_laba_prakse_augst%C4%81k%C4%81s_izgl%C4%ABt%C4%ABbas_iek%C5%A1%C4%93j%C4%81_finans%C4%93%C5%A1an%C4%81_un_p%C4%81rvald%C4%ABb%C4%81.pdf);

1. Projects of the Action Programme 'Growth and Employment' of the European Union Structural Funds and the Cohesion Fund 2014-2020 programming period, European Social Fund and European Regional Development Fund:

- Specific Support Objective 1 'Reduce the fragmentation of study programmes and strengthen the sharing of resources',
- Specific Support Objective 2 'Strengthen the academic staff of higher education institutions in the fields of strategic specialization',
- Specific Support Objective 3 'Ensure better governance in higher education institutions'.

The management staff of LiepU in the context of this curriculum consists of the rector, vice-rectors,

deans, directors of scientific institutes, heads / directors / specialists of structural units, heads of fields of study, directors of study programmes and deputy staff, as well as members of LiepU decision-making institutions.

In addition to the information specified in the existing LiepU human resource development plans, the needs for improvement of employees' professional competencies are / can be identified based on the results of employee work and competencies assessment and / or independent individual discussions, as a result of which the existing education and competencies of the LiepU academic and general staff are / can be supplemented in practice at work, as well as, to the extent possible, acquiring new knowledge to raise their level of education, attending courses, seminars, conferences, congresses, forums, participating in Erasmus + mobility events and other experience exchange events.

The added value of the used opportunities for the implementation of the study process and the quality of studies:

Students of the field of study 'Environmental Protection' are also offered internships in a specific work environment for the development of practical competencies, the successful completion of which requires not only knowledgeable teachers who follow the latest current issues in theory, but also practitioners who focus on current issues on local, national and international level.

In order to promote the development of practical competencies of teachers, several lecturers involved in the implementation of the field participate in activities for improvement of qualification in various companies in Latvia, for example, M. Zeltiņa – SIA Liepājas Enerģija, R. Jūrmalietis – SIA Skara, L.Ābele – Biologica Farm Turaidas, V. Kalniņš – SIA Vides un Ģeoloģijas Serviss, within the framework of the SGS 8.2.2 project (pecific Support Objective 'To strengthen the academic staff of higher education institutions in the areas of strategic specialization')

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.

The staff involved in the study programmes included in the field of environmental protection studies is listed in **Annex II.3.6.A**, indicating the scientific degree and / or professional qualification, position, election / non-election of the teaching staff, and the implemented study courses in the specific study programmes; the scientific biographies (CV) of the lecturers are reflected in more detail in **Annex II.3.6.B.**

The working language of the lecturers and English language knowledge:

The academic staff involved in the implementation of the study programme 'Ecotechnologies' (see the vertical column 'Study Programme' ("Studiju programma") of the table in Appendix II.3.6.A) teach their courses both in Latvian and in English, except for Tatjana Paulauskiene (guest lecturer from Klaipeda University) who teaches her course in English only. The study programme EREME is taught in Latvian only. Lecturers Inese Ansule and Linda Lauze of LiepU teach Latvian language courses for foreign students.

In order to improve their English language knowledge and receive the appropriate certification, LiepU academic staff participate in foreign language courses administered by the European Social Fund project 'Improvement of the academic staff of the Liepaja University in the fields of strategic specialisation — natural sciences, mathematics and information technologies, art, social sciences, commercial sciences and law' No. 8.2.2.0/18/A/0.

31 LiepU lecturer is involved in the implementation of both study programmes of the field, of which **13** (42%) have a doctoral degree, but **18** (58%) - a master's degree. **14** (45%) lecturers have been elected to academic positions at LiepU; **8** of them have a doctoral degree. In turn, out of **17** (55%) non-elected lecturers, **5** have a doctoral degree.

The scientific research of the teaching staff involved in the implementation of the study programmes of the field is quite extensive (for example, natural sciences, engineering, computer science, management science) and their results are published in such highly valued databases as Web of Science and SCOPUS - for example, L.Ābele, A.Grickus , A.Jansone, R.Jūrmalietis, T.Paulauskiene, U.Žaimis and others The research activity of the teaching staff is being carried out, including in international projects and national research programmes (for example, Interreg South Baltic Programme 2014 – 2020, *Reviving Baltic Resilience* (RBR), Interreg Baltic Sea Region, *Improving smart specialisation implementation of the Baltic Sea Region through orchestrating innovation hubs* (Smart-up BSR, Nr. #R044), ECOSOC project *Impact of changes in social consciousness on sustainable provision of ecosystem services,* etc.)

Many lecturers of the field are involved in the scientific activities of the Institute of Institute of Science and Innovative Technologies (ISIT) as researchers and leading researchers.

The list of scientific publications of the teaching staff in peer-reviewed publications and other scientific achievements that characterize the professional competence of the academic staff involved in the field of study in the implementation of the study courses to be taught is indicated in **Annex II.4.4.A.**

The teaching staff uses the opportunity to go to various partner universities abroad in various mobility events (see Annex **II.3.6.C._** Outgoing Mobility of Lecturers in the Field of Environment), as well as each academic year, lecturers from foreign cooperating universities visit LiepU students and lecturers (see Annex **II.5.2.B_** Incoming Lecturers_Students of LiepU FSE). However, the teaching staff of the field makes little use of the opportunities offered by ERASMUS mobility - only 2 members of the teaching staff each academic year (exception - 2016/2017 academic year, when 6 members of teaching staff used the mobility opportunities). The teachers themselves explain this low activity with the workload in projects and study work.

The elected academic staff of the Environmental protection field works part-time — their workload in the academic year 2020/2021, for example, was on average 0.54, due to the number of guest lecturers invited to teach study courses. Several of the elected academic staff members were also elected as leading researchers (3) or researchers (3) at the Science and Innovative Technology Institute (receiving remuneration from the Science Base funding) — the average workload in their academic and research work was 0.45 and 0.45 respectively; granted, the academic staff is also employed by academic social work (e.g. working in different LiepU committees) and administrative responsibilities (a separate contract is concluded for the last two). In the international evaluation of LiepU FSE & ISIT as Scientific Institutions (2019; reference period: 2013–2018) , the experts noted the need to relieve the teaching staff from the overload of academic, administrative and public work, thus giving them the opportunity to devote more time to research activities. The workload of ISIT (unelected worker) and LiepU (main job) academic staff does not include paid scientific activity, however, these academic staff members receive a one-time payment from the LiepU budget for the research carried out. Several members of the ISIT unelected academic staff carry out research

outside of LiepU, for example, In Latvia University or LSFRI ‘Silava’.

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.).

During the studies, students have access to the general staff of LiepU faculties as a support staff, who provide information to both full-time and part-time students in connection with the provision of the study process, as well as in case of various uncertainties, introduce and inform about various activities or improvements related to the study process, continuously taking place in LiepU, for example, automatic registration system for studies, electronic application for scholarships, etc.

Students have the opportunity to apply for various types of scholarships, such as a Senate scholarship or a one-time scholarship within a semester.

LiepU students have access to a legal advisor in case of uncertainties, for example, in case of drawing up an individual study schedule, or to foreign students to clarify issues related to study agreements.

LiepU has a Psychological Support Centre, which can provide advice in case of psychological issues, as well as LiepU provides an opportunity to move around for people with disabilities, including wheelchairs, because there are special ramps, and the LiepU building makes it possible to move between floors, using an elevator.

For the support and integration of students, a Student Council, as well as employees of the International Relations Department as mentors for foreign students throughout the study period are operating at LiepU.

In order to continuously ensure the study process, students have the opportunity to use the Moodle study environment, the Library's offer both in terms of the provision of literature, as well as in terms of group work and computer area.

LiepU lecturers provide consultations to students on the development of scientific papers and preparation of presentations regularly both during the lectures and consultations with lecturers.

Also in preparation for scientific conferences both in LiepU and other universities, for competitions that are regularly announced in various fields (for example, economics, business), students have the opportunity to receive additional consultations from the teaching staff.

One of the largest support staff in the entire period is formed by the study programme directors, who help students integrating in the life of the university, advise on the choice of internship companies, organize study tours to various organizations and companies during the study process, etc.

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).

The following medium-term strategic goals are defined in the LiepU Scientific Activity Strategy for 2015-2020 (**https://www.liepu.lv/uploads/%C4%80SD/ERASMUS%20dokumenti/Liepaja_University_Development_Strategy_Summary.pdf):**

- research topics correspond to national priorities (national research programmes), internationally relevant research directions, as well as regional development needs (orders of local governments, regional entrepreneurs, etc.);
- LiepU scientific institutes and research groups in departments - scientific teams, which are creative, open to national and international cooperation and which form a national and international cooperation network for the implementation of current research topics and research projects;
- LiepU works for interdisciplinary research groups with a focus on a comprehensive solution to topical scientific problems in cooperation with Latvian and foreign universities and entrepreneurs, who are able to attract funds from entrepreneurs, national and international projects in order to achieve results;
- Research and business cooperation are supported by the Technology Transfer Centre, Prototyping Centre. Cooperation with the Business Incubator of Kurzeme and Science and Innovation Park founded by the University of Liepaja is used for the introduction of research by students and young scientists into the national economy and commercialisation;
- the publication of research results at the international level (in international conferences and congresses, in internationally cited publications) is growing;
- LiepU scientific follow-up publications and journals are in the industry-recognised databases of internationally cited publications;
- The promotion of science and research is carried out in cooperation with all social partners, all kinds of social and age groups, in particular by developing cooperation with schools, creative and professional organisations, promoting young people's interest in science and understanding of science and creativity as a basis for a successful career in any field of activity.

This strategy is still in force (LiepU Senate decision about its extension see II.2.1.; see also I.1.1.) since new Liepaja University development strategy 2021–2027 (with Research strategy) is under preparation yet. According to the draft version of new Research strategy FSE and ISIT research activities will focus on thematic sector "Natural science and technologies" branched in two strategic specialisations – *Information and communication technologies* (ICT) and *Environmental Science*.

The scientific research activity of the study direction Environmental Protection is mainly carried out in the LiepU Institute of Natural Sciences and Innovative Technologies (DITI) - the lecturers of many study courses in the direction are DITI leading researchers and researchers (L. Ābele, R. Jūrmalietis, V. Kalniņš, A. Jansone, etc.). Conceptual framework for research of the direction DITI forms paradigms of eco-technology and circular economy; the specific research topics are:

1. Marine bio-waste ('Furcellaria lumbricalis' - red algae washed up on the coast of Kurzeme) as

a resource (i.e. waste-to-resource approach) - biofuel (biomethane and bioethanol), bioplastics, aquaculture feed, cosmetics, etc. (research incl. *INTERREG Baltic Sea Region Programmes 2014-2020 co-financed in project No. R0 'Sustainable Use of Baltic Sea Algae' (GRASS)*) - structural unit ***Marine Resources Research Department***

2. Development of ecological microcosm systems (incl. computer-controlled) for conducting eco-technological experiments and support of the study process (indoor aquaculture, mini-greenhouses, biofermentation equipment) - structural unit ***Marine Resources Research Division***
3. Eco-technological use of ecosystem services for the sustainability of local communities (incl. *National research programme ECOSOC - LV project 5.2.9 'Impact of changes in social consciousness on the sustainable provision of ecosystem services' (2015-2018)* - structural unit *Circular Economics Centre*
4. Use of methodological principles of eco-technology in environmental education/development of environmental awareness
5. Material recycling - the use of plastic waste and road construction waste (milled asphalt) to create new road construction materials using simple and accessible technical solutions
6. Circular Economics Centre: Research in the areas of sustainability, circular economy, innovation, and education

Lecturers of the direction also annually participate in the annual international scientific conference 'Innovations and Creativity' organised by the Department of Nature Sciences and Engineering, but their student research papers are regularly presented at LiepU Student Science and Creativity Days (student scientific conference), as well as at the annual international student scientific conference co-organised by Klaipeda University, Liepaja University (DITI Circular Economics Centre) and for the last two years, the University of Cádiz (Spain).

Publication profile and topics in connection with participation in conferences and scientific seminars by academic personnel is reflected in the annual LiepU Scientific Activity Reports, which are available here: https://www.liepu.lv/lv/263/petniecibas-parskati (Latvian only).

The list of scientific publications of the lecturers of the direction for the reporting period is also reflected in **Appendix II.4.4.B_The_Total_Publications_List_of_Teachers**

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.

The link between research and study processes is ensured by the involvement of teachers in scientific projects and activities of research institutions (in the case of the Environmental Protection direction - DITI, see section II.4.1) - research results are reflected in the content and methodology of taught courses, as well as in student scientific research papers supervised by teachers (bachelor's and master's theses). Students' scientific activity is often involved in the research of DITI carried out by lecturers - for example, bachelor's student K.Kronberga conducts research for obtaining bioplastics from red algae, but A.Ribakova studies the possibilities of using probiotics in aquaculture; in turn, master's student E.Ābelis constructed a cascade-type aquaponic system, which was demonstrated at the international exhibition of inventors and innovations Minox 2020, master's student A.Bilerts developed microscopes for use in school educational activities, master's student L.Grundmane performed research work 'Eco-technological Approach for Non-formal Water

Environmental Education' etc. In the master's study programme, students are required to present and publish the results of their research work at the international student scientific conference of Liepaja-Klaipeda-Cadiz universities. The results of students' research are often included in courses supervised by lecturers as case studies (referring to the specific student) to demonstrate students' research success stories.

The topics of the research papers of the teachers and the students supervised by them correspond to the state priorities (to the state research programmes; to the direction of Environmental Protection especially - the priority direction of science *Research and sustainable use of local resources* https://likumi.lv/ta/id/269406-par-valsts-petijumu-programmam ("Latvian only") to internationally relevant research directions, as well as to the development needs of the region (orders of local governments, regional entrepreneurs, etc.).

The creative activities of the academic staff are also related to the school environment: development of relevant educational/study programmes, conducting classes for pupils, evaluation of pupils' scientific works developed within various projects: e.g. project 'Support for the development of learners' individual competencies' (No. 8.3.2.2./16/I/001) funded by ESF & VISC, the European Economic Area and Norway (EEA/N) Grant Programme 'Research and Education' 2020-2023 funded project *Development of Innovation Centre in Liepaja City* (No. NFI/IC/VIAA/2020/2), ESF project Organisation of readings of students' scientific research papers in Kurzeme region (8.3.2.1/16/I/002) 2016-2020.

The scientific research of the academic staff involved in the study direction is related to the themes and content of the study courses to be taught. This is reflected in the topics of the reports and the support for publishing the research results carried out within the student final works.

Research themes correspond to state priorities (state research programmes), internationally topical research directions, as well as to regional development needs (orders from municipalities, regional entrepreneurs, etc.), the implementation of research by students and young scientists into the economy and commercialization is taking place. Commercialized research studies: Integration of the Circular economy in higher education in Liepaja University, Indoor environmental and air quality improvement possibilities for metalworking plants (RK Metāls), Sustainable Development and Ecodesign: Development of a training programme for art secondary schools (LMMDV), Eco-technology solutions for oral care products (business has begun), Eco-technology approach to non-formal water environmental education (Nature House), Ecotourism as education and therapy: example of "Jura stables" (Jura stables, Ltd), Waste water treatment in small municipalities (Paplaka), etc.

The publication of research results at international level takes place every year in collections of scientific papers of student scientific conferences, as well as in others.

Scientific research of academic staff involved in the study direction is directed towards the themes of taught study courses, linking it to the study process. This is reflected in the topics of the reports and the support for publishing the research results carried out within the student final works. For example, the student works of the professional Master study programme "Eco-Technologies" were published in international scientific collection of student scientific papers "The challenges of creating a welfare society in Lithuania and the world" in both 2019 and 2020.

List of publications:

1. Green Project Management in Public procurement implementation, L. Afanasjeva
2. Sustainable development and eco-design: curriculum development for art schools, E.Ābelis
3. Allotment gardens – city habitat, K. Bušēvics
4. Integration of circular economy in higher education at Liepaja University, M. Kalniņa

5. Guidelines for the implementation of a common separate waste collection system in Latvia, I.Putniņa
6. Possibilities for improvement of indoor environment and air quality in steel processing plants, N. Nazarovs
7. Food waste reduction, sorting and recycling: a circular economy perspective, L.Lapiņa
8. Visual Pollution and Landscape Aesthetics in Urban Planning, A.Ali
9. Wastewater Treatment Technologies Implementation in Pakistan, N. Shafique
10. Ecotechnological solutions for oral care products, Z.Frickausa
11. Eco-technological approach for non-formal water environmental education, L.Grundmane
12. Ecotourism as a tool for public education and therapy: "Jura stables" case, A.Kalita
13. Solar energy options for small households, A. Mače
14. Wastewater treatment in small municipalities, R. Mickus
15. Community-scale Composting System: Liepaja's Example, N.Sudmale
16. Even-toed ungulate-vehicle collision mitigation in Latvia: South Kurzeme case, A. Veidele

The publishing of research results on international level takes place each year in collections of student scientific papers from conferences, in other editions, including students in cooperation with lecturers have prepared papers for publishing in internationally cited databases (see II.4.5.)

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.

Teachers of the direction are involved in international research and education projects; they are especially active in the projects organised by **DITI Circular Economics Centre**:

1. Nordplus Higher Education 2020, Circular Economy; No. NPHE – 2020/10036; (15.05.2020-01.10.2021)
2. Interreg Baltic Sea Region, Improving smart specialisation implementation of the Baltic Sea Region through orchestrating innovation hubs (Smart-up BSR) No. # R044; (01.10.2017-01.10.2020). Baltic Sea Region Smart-Up Final Conference
3. Interreg South Baltic Programme, RBR - Reviving Baltic Resilience (01.07.2017-30.07.2020)
4. VP39 - 'Challenges and Solutions of the Latvian State and Society in the International Context (INTERFRAME-LV)' (No. VPP-IZM-2018/1-0005); (05.12.2018-30.11.2021)
5. Nordplus Higher Education 2018, Intensive Course of Circular Economy; No. NPHE – 2018/10021; (15.11.2018-01.12.2019)
6. Nordplus Higher Education 2017, Practical Approach for Teaching Circular Economy; No. NPHE-2017/10144; (15.06.2017-01.10.2018)
7. Nordplus Higher Education 2017, Circular Economy Future; No. NPHE-2016/10249; (01.08.2016-30.08.2017)

The academic staff of the study programme 'Ecotechnologies' is involved in collaborative research with partners from Lithuania, Estonia, Finland, etc. by researching and publishing the research results on the following topics: circular economy, sustainable development, recycled cellulose aerogels for fuel collection in water, green growth, industrial symbiosis, eco-innovation, etc. The research results are included in the study courses of the study programme 'Ecotechnologies'. Each

year, students take part in the International Student Scientific Conference.

Cognitive benefit — for the courses of the study programme ‘Ecotechnology’.

In the future, it is planned to encourage students to develop international research, to ensure internship positions in international science centres and to broaden the spectrum of the topics researched internationally by lecturers, as well as to promote participation in international consortia on industrial symbiosis and circular economy.

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.

Motivation measures for the academic staff for the implementation of scientific activities are related to the involvement of lecturers in the research activities of the Institute of Natural Sciences and Innovative Technologies (DITI), which are supported by both state funding (i.e. science base funding) as well as local and international research projects (for example, Interreg South Baltic Programme 2014-2020 in the project ‘RBR - Reviving Baltic Resilience’, Interreg Baltic Sea Region Programme Improving smart specialisation implementation of the Baltic Sea Region through orchestrating innovation hubs (Smart-up BSR) No. # R044 PP: 2017–2020, INTERREG Baltic Sea Region Programme 2014-2020 co-financed project No. R0 ‘Sustainable use of Baltic Seaweed’ (GRASS), National research programme ECOSOC - LV project No. 5.2.9 ‘Impact of changes in social consciousness on the sustainable provision of ecosystem services’ (2015-2018 et al.).

Strengthening the scientific and creative potential among lecturers and students of the direction has been achieved by participating in various stakeholder involvement and research support projects, such as the annual European Researchers’ Night (Horizon 2020) events and evaluation of annual Pupils' Scientific Research Papers (ZPD) in Liepaja and Kurzeme region (A. Jansone, U. Žaimis, R. Jūrmalietis, L. Karule, O. Glikasa, V. Kārkliņa, M.Ž igunovs and others), as well as by executing research for the development of the Liepāja education environment (e.g. European Economic Area and Norway (EEA/N) Grant Programme ‘Research and Education’ 2020-2023 funded project ‘Development of Innovation Centre in Liepaja City’ (No. NFI/IC/VIAA/2020/2) 2); Projects supported by Liepāja City Council a) ‘Natural values of Lejaskurzeme for the centenary of Latvia’ - Knowledge Trail of Woody Plants at Liepāja Seaside Park and b) ‘Nature Embassy at Liepāja University’ etc.).

Within DITI, the most productive project implementation has been carried out by the Circular Economics Centre:

1. **Fundamental and Applied Research Project** Impact of COVID-19 on Sustainable Consumption Behaviour and Circular Economy (No. lzp-2020/2-0317) (01.12.2020-31.12.2021)
2. **Nordplus Higher Education 2020, Circular Economy; No. NPHE - 2020/10036;**

(15.05.2020-01.10.2021)

3. **VP39 - 'Challenges and Solutions of the Latvian State and Society in the International Context (INTERFRAME-LV)' (No. VPP-IZM-2018/1-0005);** (05.12.2018-30.11.2021)
4. **Interreg Baltic Sea Region, Improving smart specialisation implementation of the Baltic Sea Region through orchestrating innovation hubs (Smart-up BSR) No. # R044;** (01.10.2017–01.10.2020): Baltic Sea Region Smart-Up Final Conference
5. **Interreg South Baltic Programme, RBR - Reviving Baltic Resilience** (01.07.2017-30.07.2020)
6. **Nordplus Higher Education 2018, Intensive Course of Circular Economy; No. NPHE – 2018/10021;** (15.11.2018-01.12.2019)
7. **Nordplus Higher Education 2017, Practical Approach for Teaching Circular Economy; No. NPHE-2017/10144;** (15.06.2017-01.10.2018)
8. **Nordplus Higher Education 2017, Circular Economy Future; No. NPHE-2016/10249;** (01.08.2016-30.08.2017)

The research activities of the lecturers of the direction are implemented within the main research directions of DITI - 1. Marine bio-waste; 2. Development of ecological microcosms; 3. Ecosystem services; 4. Eco-technology in the development of environmental awareness; 5. Recycling of materials; 6. Circular economy, sustainability, innovation; implementation of research - in the interpretive perspective of eco-technological and circular economy paradigm. The range of topics for research is wider for non-DITI Environmental Direction employees, e.g. Sustainability in University-City Cooperation (M. Zeltiņa), Environmental and Health Education Issues (L. Karule, O. Glikasa), Environmental Impact on Bat Populations (J. Šuba), Microplastic Pollution in the Baltic Sea (A. Elstiņa), etc.

The quality of the research work executed by the academic staff involved in the implementation of the direction is confirmed by the publication in SCOPUS, as well as in the publications included in the Web of Science indexation (for the total relevant data of Department of Nature Sciences and Engineering and DITI, see Annex **II.4.4.A_Department_of_Nature_Sciences_and_Engineering_DITI_ citat.publicat.;** for a list of all publications of the teachers during the reporting period, see Annex **II.4.4.B_Total_Publishing_List_of_Teachers**). Information about LiepU lecturers' publications can also be found at: https://www.liepu.lv/lv/publik%C4%81cijas

The results of the research activities carried out by the academic staff are also reflected in international and local conferences (see Appendix **II.4.4.C_Participation_conferences**).

During the reporting period, 3 lecturers of the direction have defended their doctoral theses:

- V. Kalniņš 'Evolution of Air Pollution Cumulative Effect by the Use of Environmental Parameter and Bioindication Methods', LLU; in 2016, won the Liepāja City Annual Award in Science in the nomination 'Annual Doctoral Research'
- L. Ulmane-Ozoliņa 'Technological support for the implementation of collaborative learning's pedagogical approach in blended-learning', Liepāja University
- As the best doctoral thesis for 2018, among all the universities of the Baltic states, the Baltic University Programme (BUP) has recognised the doctoral thesis 'Ensuring Municipal Waste Management Sustainability by Administration of Landfill Management Companies' written by LiepU Assistant Professor, DITI Circular Economics Centre Researcher, Dr.sc.admin. N. Cudečka-Puriņa.

The pedagogical and scientific achievements of the academic staff have gained recognition at the

state and Liepaja City level, e.g. O. Glikasa has received a Certificate of Recognition from the Ministry of Education and Science of the Republic of Latvia for significant academic and popular research work in health education and a Certificate of Recognition from Liepaja City Board of Education for its contribution to the organisation and management of the work of the commission in the pupils' scientific conferences of Kurzeme region (2014); L. Karule - a Certificate of Recognition from Liepāja City Board of Education for contribution to the environmental education of students; U. Žaimis received the main award of the Liepāja City Board of Education in the nomination 'The Coolest Teacher 2017', as well as the Liepāja Annual Award in Science 2019; but A. Jansone - Liepāja Municipality Annual Award in Science 2020. In addition, A. Grickus has won a bronze medal in the exhibition of innovations and inventions MINOX 2018, but the student in the field of mechatronics H. Vičivskis, supervised by U. Žaims, has won a gold medal (1st place) in the same exhibition called MINOX 2018.

The lecturers of the direction have also participated in the organisation of various scientific and educational events; the DITI Circular Economics Centre was particularly active by implementing them.

1. International Student Scientific Conference 'Challenges of Creating Welfare Society in Lithuania and the World' organisers Klaipeda University and LiepU DITI Circular Economy Centre, 'Circular Economy and Innovation Management', 24/04/2020, Klaipeda, Lithuania.
2. The challenge of the Kurzeme region; Forum 'Digitisation in Education and Business Support', presentation 'Digital Economy and Society Index EU 2014-2019', Latvia, 14 August 2020, Venue: MS Teams Live Event. Forum organisation and management.
3. International Student Scientific Conference 'Challenges of Creating Welfare Society in Lithuania and the World' organisers Klaipeda University and LiepU DITI Circular Economy Centre, 'Circular Economy and Innovation Management', 26/04/2019, Klaipeda, Lithuania.
4. An international, intensive Circular Economics Study Week was organised at the University of Liepaja from 10.03-16.03.2019 with the participation of university students from four countries (Latvia, Lithuania, Estonia, Finland).
5. Participation in the Baltic delegation with Nord Forsk researchers in Oslo, in the seminar NORDIC SCHOLARSHIP SCHEME FOR THE BALTIC COUNTRIES, PRACTICE IN NORDIC INSTITUTIONS 2016, which was organised by the Nordic Council of Ministers, 11-13 April 2018, Oslo, Norway.

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.

The involvement of students in science is promoted in cooperation with the academic supervisors, DITI researchers, who are supervising course papers or final theses, by offering topics that resonate with the research directions implemented at DITI or the Department. Every year, 'Science and Creativity Days' are organised, within the framework of which a student scientific conference is held, in which both bachelor's and master's students participate. Master's students have a mandatory requirement to participate in an international scientific conference in Klaipeda (Lithuania).

Every year, students from all levels of study programmes offered by LiepU have the opportunity to participate in the competition of research projects, where it is possible to receive financial support for the practical implementation of course papers and final theses - e.g., master's theses in the study programme Eco-technology: ‘Eco-technological solutions for oral care products’; ‘Wastewater treatment in small municipalities’; ‘Community composting system: the example of the city of Liepaja’; ‘Possibilities for improving the indoor environment and air quality of metal processing plants’; ‘Reduction, Sorting and Recycling of Food Waste: A Circular Economy Perspective’, etc.

Student scientific articles have also been published by SCOPUS et al. internationally cited databases:

Sulojeva, I., Ābele, L. (2016) *Integration of ecological building materials to improve energy-saving of historic buildings in city management* 3rd International Multidisciplinary Scientific GeoConference SGEM2016; (SCOPUS)

Jakobsone, L., Abele, L. (2016) *Mechanical biological treatment options of municipal solid waste: case of Liepaja region, Latvia* 3rd International Multidisciplinary Scientific, GeoConference SGEM2016; (SCOPUS)

Ābele, Lilita, Dlužņevska, Egija, Iesalnieks, Kaspars (2014) *Capacity of Building Energy Efficiency in Liepaja* Environmental Research, Engineering & Management. EBSCO, INSPEC database, Print ISSN: 1392-1649;

Students of the master's study programme Ecotechnology are also involved in the projects Nordplus Higher Education 2020, Circular Economy; No. NPHE - 2020/10036; Interreg Baltic Sea Region, Improving smart specialisation implementation of the Baltic Sea Region through orchestrating innovation hubs (Smart-up BSR) No. # R044; Interreg South Baltic Programme, RBR - Reviving Baltic Resilience; Nordplus Higher Education 2018, Intensive Course of Circular Economy; No. NPHE - 2018/10021; Nordplus Higher Education 2017, Practical Approach for Teaching Circular Economy; No. NPHE-2017/10144; Nordplus Higher Education 2017, Circular Economy Future; No. NPHE-2016/10249.

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.

Students have access to DITI equipment, including a nanotechnology laboratory with chemical vapour deposition and thin film sputtering equipment, which allows the use of innovative materials such as graphene in the development of course papers and final theses. Graphene and technologies based on it are becoming more and more relevant in the field, but typically, without the involvement of external partners, they are not easily available for students of environmental study programmes. Therefore, the existence of such equipment at the department gives students the opportunity to develop highly innovative course papers and final theses.

Innovative solutions are offered and implemented in master's level academic papers, for example: In the collections of scientific articles of students from Liepaja, Klaipeda and Cadiz universities ‘Challenges of Creating Welfare Society in Lithuania and the World’ published in 2019 and 2020, in which scientific articles of students of the master's study programme Eco-technology of the Department of Natural and Engineering Sciences are published (see Annex III.2.5.4).

Several innovations have been introduced, such as:

1. Influence of design and management technologies on the productivity of aspen hybrid agroforestry systems;
2. Integration of eco-construction in urban management;
3. Possibilities for improving indoor air quality in office premises;
4. Sustainable management of textile waste;
5. Production of electric guitars from materials that are environmentally friendly and available in Latvia;
6. Assessment of opportunities for the production of environmentally friendly jewellery;
7. Integration of aquaponics systems as eco-technological teaching material in environmental education;
8. Use of pine needle extract in the topical treatment of Acne vulgaris;
9. Sustainable development for SIA Arbo Windows glass package production plant;
10. Multifunctional wave energy converter - eco-technological solution for the Baltic Sea, Kurzeme coast;
11. Use of biodegradable resources in the production of cremation ash urns;
12. Sustainable Development and Eco-design: curriculum development for Art Secondary Schools;
13. Integration of circular economy in higher education at the University of Liepaja;
14. Possibilities for improving the indoor environment and air quality of metal processing plants;
15. Food waste reduction, sorting and recycling: a circular economy perspective;
16. Introduction of wastewater treatment technologies in Pakistan;
17. Eco-technological solutions for oral care products;
18. Eco-technological approach in non-formal water environment education;
19. Community compost system: Example of Liepaja City.

At the beginning of each study year, students together with the Director of the programme Ecotechnology, visit various organisations and institutions of cooperation partners related to the study direction, including Liepājas RAS, Liepājas enerģija, Liepājas ūdens, Liepāja City Council, Demercuration Centre, Klaipėda University, Fortum Klaipeda, etc. After visiting the organisation or institution, students develop an offer of ideas for raised problems, the theses of which can be developed at later stages as study papers or other materials related to research.

In cooperation with the representatives of the region's entrepreneurs (for example, Green and Smart Technologies Cluster, SIA iCotton, Association ‘Circular Economics and Competence Centre’, SIA Balticfloc, SIA Skara, A/S Liepājas papīrs, etc.), each year of the studies, the first year students are offered to get involved in solving real problems in the second semester.

The students of Eco-technology developed and the company JSC Liepājas papīrs introduced innovative solutions for specific waste management and the purchase of new equipment.

Students of Eco-technology participate in the annual exhibition ‘Made in Liepaja’ with their innovations.

In 2019, one master's thesis ‘Integration of Circular Economics in Higher Education at Liepaja University’ participated in the activities of the project KInGS with the idea of approbation, improvement and inclusion of the interactive game ‘National Economy’ in study courses at LiepU.

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.

The choice of cooperation partners corresponding to the field of study is determined by the target orientation of the field to higher professional education (respectively, the search for partners in the business environment), as well as the content of the specific study programmes. Most of the cooperation with businesses within the programme is the result of active activities of the study programme directors, including personal contacts and the use of information provided by graduates.

The main criteria for selecting cooperation partners among businesses are mainly: a) the represented field of activity; b) previous experience of cooperation and topicality of the issues to be handled for the student; c) interest of companies (estimated potential contribution of LiepU students for the benefit of companies).

The facilitation of cooperation is strengthened not only by informal links with interested and loyal business leaders of study programmes, but also by the written feedback received on the topicality of programmes (emphasizing and substantiating the importance and necessity of training) and implementation (including student internship evaluations). Formal support is provided by mutually concluded cooperation agreements in each study programme.

Cooperation with employers is especially important in ensuring the quality of studies, while the employment of graduates is one of the main certifications on the part of employers about the quality of LiepU study programmes and the recognition of students' education.

Cooperation with employers and professional organizations is also ensured by the involvement of employers:

- in the work of state examination commissions (for example, defence of bachelor's and master's theses, defence of internship theses);
- in scientific and business conferences, including participation in the annual LiepU Creativity and Science Days;
- in surveys analysing and evaluating the professional activity of students of the field of study;
- in the provision of internship places for the students of the study programmes of the field of study;
- in implementation of study courses (for example, study visits in courses 'Environmental Science and Management', 'Application and Evaluation of Environmental Technologies', etc.)
- in supporting study tours and providing opportunities, to introduce to the operation of the companies;
- in publishing the results of their scientific research in LiepU conferences and collections of scientific articles.

Cooperation with employers and industry organizations has also been facilitated by inviting their representatives in the development of the new Environmental Innovation Technologies (EIT) programme (for example, SIA Vides un ģeoloģijas serviss and Green and Smart technology Cluster)

or in regular communication with these organizations during the preparation of the EIT programme (for example, SIA Liepājas enerģija, Liepaja City Council Environment Department, etc.). Cooperation with the representatives of employers and industry organizations will continue during the implementation of the programme.

Cooperation with employers is especially important in ensuring the quality of studies, while the employment of graduates is one of the main certifications on the part of employers about the quality of LiepU study programmes and the recognition of students' education.

The list of the main cooperation partners (businesses in the sector, etc.) with which contracts have been signed can be found in Annex **II.5.1.A_Cooperation agreements**

Internationalization is also an important dimension of LiepU's institutional cooperation: it ensures the development of study programmes and processes in accordance with the quality criteria adopted in international practice, enables lecturers to expand international cooperation by participating in international study and science projects or programmes, and attract foreign lecturers.

The goal of the LiepU internationalization plan: to set tasks for the internationalization of the university, which include the implementation of international study programmes, attraction and selection of foreign students, implementation of international mobility, development of international cooperation, as well as provision of an international study environment.

LiepU's internationalization processes are also facilitated by various ERASMUS + exchange programmes, which expand students' opportunities to learn from the experience of foreign institutions.

The LiepU internationalization plan has been developed on the basis of the LiepU strategy for 2016-2020.

In the period 2007-2013, FSE as a faculty implementing Environmental Protection studies, has developed co-operation with several foreign higher education institutions – universities with which the contract is concluded are listed in Annex **II.5.1.A_Cooperation agreements**

Summa summarum, as the main result of cooperation with various institutions is the achievement of the defined goals of the field of study and study programs, the most important of which are: to provide studies based on the real business environment, as a result of is able to demonstrate appropriate management skills and competencies in managing companies / organizations, ensuring both the development of existing offers and the development of new and innovative products, thus promoting the quality of life not only in the Kurzeme region, but also in Latvia.

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.

At the end of the year, the Liepaja University received an Erasmus + programme charter for a maximum period of 7 years, thus obtaining confirmation that the international strategy of LiepU complies with the requirements of the European Union.

The objectives of learning mobility are as follows:

- enable LiepU staff to acquire knowledge and specific skills by learning from the experience

and good practice of foreign partners, as well as improve practical skills necessary for current work and professional development;
- encourage to expand and improve the range and content of the offered study courses;
- allow students who do not have the opportunity to participate in a mobility programme to benefit from the knowledge and experience provided by academic staff from foreign European universities and foreign guest lecturers from companies;
- promote the exchange of knowledge and experience of pedagogical methods between the European higher education institutions;
- create a link between universities and business;
- help developing cooperation between universities and companies;
- motivate students and staff to engage in mobility and to help prepare for the mobility period.

In accordance with the European Council Convention on the Recognition of Qualifications concerning Higher Education in the European Region (1997), LiepU developed and approved by the Rector's Order No.65- of 20.10.2014 *Application and selection procedure for STUDY MOBILITY through Erasmus+ exchange programme in LiepU* (https://www.liepu.lv/lv/49/studiju-mobilitate) and *Application and selection procedure for TRAINEESHIP MOBILITY through Erasmus+ exchange programme in LiepU* https://www.liepu.lv/lv/50/praksu-mobilitate), Application and selection procedure for TRAINEESHIP MOBILITY through Erasmus + exchange programme in LiepU (https://www.liepu.lv/en/61/documents-and -regulations).

Application for Erasmus + mobility is announced on the LiepU website in accordance with the LiepU procedure 'Application and selection procedure for lecturer or employee mobility through Erasmus + exchange programme'. (THE LIEPAJA UNIVERSITY ACADEMIC STAFF DEVELOPMENT ACTION PLAN for 2018-2022, p. 27).

Already in 2011, the Council of Higher Education has indicated in the 'Expert Assessment of Study Areas in Latvia' that in some cases the staff pays more attention to the theoretical content of the study subject than to the development of students' knowledge and skills according to the requirements set for the student by the potential employers. Insufficient work is done with scientific research databases; often the possibilities to use various databases are limited by weak English language skills. Insufficient foreign language skills of the academic staff endanger the quality of study programmes. There is insufficient renewal of academic staff in HEIs of the regions. In the current situation, HEI staff tends to have academic knowledge with less practical experience (http://www.aip.lv/ESF_projekts_publ_32_1.htm)

The consulting service of the World Bank (31.01.2018) on the actual situation in academic careers in Latvia emphasizes that the obvious lack of internationalization affects various aspects of the academic environment.

Internal mobility is hampered not only by the level of remuneration, but also by language requirements and the current lack of coordinated efforts and tools to attract foreign academic staff. This is important because internationalization is one of the most important sources of 'new thinking' and potential quality enhancement in higher education. In addition, internationalization is particularly important in small higher education systems, so promoting it in the case of Latvia could contribute to positive dynamics.

The goal of the LiepU internationalization plan: to set tasks for the internationalization of the university, which include the implementation of international study programmes, attraction and selection of foreign students, implementation of international mobility, development of international cooperation, as well as provision of an international study environment. Internationalization is important in LiepU work: it ensures the development of study programmes and processes in accordance with the quality criteria adopted in international practice, enables lecturers to expand

international cooperation by participating in international study and science projects or programmes, and attract foreign lecturers (Liepaja University Internationalization Plan for 2016 - 2020 https://www.liepu.lv/uploads/%C4%80SD/ERASMUS%20dokumenti/Liepaja_University_Development_Strategy_Summary_2016-2023_25.01.2021.pdf)

Attracting foreign lecturers in the long run creates an opportunity to establish, expand and strengthen long-term international contacts with partner universities, conduct joint scientific studies, participate in international scientific research projects. This would initiate the academic interest and motivation of the LiepU staff to teach or perform research work at foreign HEIs for at least one semester.

It would also increase the number of academic staff actively participating in Erasmus + activities, as well as creation of contacts or networking, which is largely linked to the establishment and maintenance of international relations. Networking provides an opportunity to establish new contacts with industry professionals and exchange experience, as well as promote the exchange of experience and good practice examples between the Latvian and foreign experts in HEIs, using a structured consultation and interaction process, create good practice examples and collection of their practical implementation experience to adapt to the situation in Latvia, specifically to the Liepaja University.

Mobility of the students studying in the field of Environmental Protection of the LiepU FSE **(** *outgoing*) in foreign partner institutions within the framework of the ERASMUS + exchange programme in the period from 2014 to 2019 is reflected in **Annex II.5.2.B**; 25 students of the field participated in the mobility programme.

Analysing the **mobility of incoming** academic staff reveals that, similarly to **incoming** mobility students, they work in several fields of study. The teachers of the exchange programme offer open-ended lectures, which are available to all interested parties (therefore the attached annex shows the entire mobility of FSE, not only the incoming mobility of the field teachers). The incoming mobility of teaching staff in the field of study is related to the comparison of different study programmes, to the acquaintance with internship places.

(*incoming*) Erasmus + mobility students develop their study plan both from the study courses of their chosen framework programme and from study courses offered by other fields.

For data on incoming mobility of LiepU FSE guest lecturers and students, see Annex **II.5.2.A_LiepU FSE Incoming Lecturers_Students**

In regards to foreign students who study the full programme at LiepU, it must be noted that within the Environmental protection field these full-time students study the professional master's study programme 'Ecotechnologies' in English (the list of master's students and data on their studies can be found in appendix II.5.2.C; N.B. these student groups are too small to analyse their dynamics); the largest number of matriculated students could be observed in 2018 and 2019 (in both years there were 9 students).

To attract foreign students to LiepU, the following activities are organised:

- visiting foreign educational institutions (incl. online exhibitions)

- work with foreign agents to attract students

- webinars

- online events on social media, etc.

Foreign academic staff, in turn, are attracted via SAM projects, Erasmus+ exchange programmes, Liepaja Council financial support (co-financing), private contacts, etc. Thanks to these activities, successful cooperation in the reporting period has been established with individuals such as academic staff of Lithuanian higher education institutions, who they have taught courses within the Ecotechnology programme: Olga Anne (Dr.sc.ing.), Irena Mačerinskienė (Dr.oec.), Tatjana Paulauskiene (Dr.sc.ing.), Žaneta Simanavičiene (Dr.oec.), Rasa Viederyte (Dr.oec.), Erika Župerkiene (Dr.oec.).

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.

During the introductory seminar of the internship, the internship supervisor (from LiepU) introduces the students to the general rules of the internship organization, the procedure of the internship organization, the internship documentation and the internship content. Internship seminars are led by the internship supervisor. Students prepare review documents on the tasks performed during internship, students prepare for the seminar and share experience. Problem situations are analysed and solutions for the improvement of problematic situation are sought.

The internship is implemented in accordance with the internship agreement, which defines the purpose of the internship, tasks, the procedure for evaluating the achievements of the internship, as well as the duties and responsibilities of the parties. The student achieves the goal of the internship based on the acquired knowledge, skills, abilities and previous experience.

Specific practice tasks are indicated in the descriptions of study courses. They provide for the participation of students in internship seminars using theoretical knowledge. During pre-diploma internship, an important task is also to plan and organize research for the development of bachelor's / master's thesis material.

The internship is carried out while the student is in the company, institution or organization of his/her choice, where a mentor (internship supervisor from the company) is appointed for the student to provide professional support during the internship.

The internship ensures the development of the student's knowledge, skills and competencies in accordance with the goal of the study programme and the real needs of the work environment.

During the internship, students design an individual research project, discuss it, thus confirming the skills of applying the acquired knowledge in research work and the ability to independently obtain, select, analyse and critically evaluate information from various sources and use it.

When designing a research project, students use analytical and critical thinking, as well as a scientific approach to problem solving and demonstrate effective communication skills during project discussions. During the internship, by collecting research data from their respective field of activity and participating in studies as participants, students confirm their understanding of study ethics.

LiepU has developed internship rules (see Annex **II.5.3.A_Regulations on Internship in LiepU**); up-to-date information on the implementation of internships at LiepU (and specifically within the Environmental Protection field of studies) is available at (

https://www.liepu.lv/en/61/documents-and-regulations). In order to improve their theoretical knowledge, skills and competences, the student during the internship gets individual support from the mentor in the internship organization, as well as from the LiepU internship manager, who promotes the professional growth of the new specialist. In addition to individual support, support is also provided in groups (mutual learning) - methodology learning in groups.

In the seminar of the internship completion the student introduces the results of the internship tasks; their evaluation is performed by the internship supervisor. The overall rating of the internship consists of both the evaluation by the internship supervisor - mentor on practical daily activities, and the rating of the LiepU internship supervisor on participation in seminars, as well as the rating of the student's self-analysis and presentation in the final seminar.

Special attention is paid to the cooperation between the internship organization and the university, the student and the internship supervisor, as well as between the students, ensuring the development of professional skills. Cooperation between LiepU and the internship organization during the student's internship is a potential support for the professional development and career of mentors and internship leaders.

In most cases, students search for and choose their own internship organizations, including by using the opportunities offered by the cooperation established by LiepU with specific businesses (the teaching staff and students of the study programme 'Ecotechnologies' of the Environmental Protection field of studies have established a multifaceted cooperation with the following FSE cooperation partners: SIA Liepājas RAS, SIA Zoovilla, SIA Biolat, CLEANTECH LATVIA, SIA Balticfloc, SIA Liepājas enerģija, SIA IK Projekts, Green Energy and Environmental Technology Cluster, as well as with professional associations - the Latvian Waste Management Association and the Latvian Association of Waste Management Companies). In its turn, the EREME study programme has developed cooperation with the following companies: SIA Liepājas RAS, SIA Liepājas enerģija, SIA Liepājas Papīrs, SIA Liepājas ūdens, SIA Vides un Ģeoloģijas Serviss, Green Energy and Environmental Technology Cluster.

Students of the field also have access to internship mobility (for conditions, see https://www.liepu.lv/lv/50/praksu-mobilitate), by using also the cooperation with foreign universities developed within the framework of the LiepU ERASMUS + programme (for Erasmus + internship offers, see https://www.liepu.lv/lv/946/erasmus-praksu-piedavajumi). For the internship mobility of the students of the field during the reporting period, see Annex **II.5.3.B_ 'Internship Mobility of the Environmental Protection Field Students'**

Since the FSE gathers information on the previous locations of internship and student feedback on them, if a student has difficulty finding an internship, the faculty helps them find it, if possible, by giving advice on which companies/institutions to contact. At the introductory seminar (see the info above) at the start of the internship students are introduced to LiepU support mechanisms, etc.

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.

A joint study programme with one of the partner universities is not currently being developed: an agreement was reached with Mikola Romeris University and the Klaipeda University (Lithuania) on the establishment of a joint master's study programme with a triple diploma within the ERASMUS MUNDUS programme but since the requirements of the ERASMUS MUNDUS were changed in 2019 - a joint master's programme had to be prepared and licensed in each country, we did not continue cooperation within this programme. The programme is not yet licensed in each country. However, we continue developing the idea of a joint master's programme by supplementing and improving the existing work on the establishment of a two-year master's study programme ‘Ecotechnologies’ in cooperation with the Klaipeda University in Lithuania and ITMO University in St. Petersburg, Russia. It will not be implemented within the framework of the planned ERASMUS MUNDUS programme, but as a separate project.

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 2015, the study direction ‘Environmental Protection’ with 2 study programmes was accredited for six years (accreditation sheet No. 351, 6.10.2015); the report of the expert group of the direction evaluation (head Prof. M. Kļaviņš, LU), while generally welcoming the quality of the direction, also listed recommendations for the further development of both programmes and the direction as a whole (for a list of recommendations and a description of the Department of Nature Sciences and Engineering appropriate actions, see Annex II.6.2.A_ **Execution of expert recommendations**).

The main critical remarks of the experts are related to the

- provision of study and research environment infrastructure;
- for lecturers' research - the need a) to overcome the fragmentation of topics by integrating them in accordance with the content specifics of the programmes, b) to promote the development of research activities (publication in internationally peer-reviewed/cited publications, number of publications);
- stakeholder communication and cooperation (involvement in programme development and evaluation: feedback);
- wider integration of the English language in the study process (essential for the internationalisation of the study process, including cooperation with foreign HEIs, attraction of foreign students; also for raising the pedagogical qualification of lecturers).

Recommendations influencing the quality of studies provided by previous accreditation experts of the study direction have been implemented, as a result of which **a)** infrastructure of the research and study environment has been improved (equipment of the Environmental Chemistry Laboratory

and Eco-technology Laboratory has been supplemented, additionally 2 new laboratories have been established - Prototyping Laboratory and Paper Recycling Laboratory), **b)** teachers have actively published in internationally peer-reviewed/cited publications in environmental science, including research results in their supervised courses **c)** for the wider integration of English into the study process, lecturers study English in depth within the specific target support project (SAM), guest lecturers from Klaipeda University are invited, joint student scientific conference (students must publish in the collection of scientific articles, represented at the conference) has been organised annually by universities of Liepaja and Klaipeda, in the last two years the University of Cadiz (Spain) has also been invited; **d)** communication with partners and students is carried out for the further development of programmes in the study direction and implementation of feedback in the quality control of studies is implemented.

Besides, when implementing the expert recommendations expressed in the accreditation of the study direction 'Environmental Protection', changes were made in the study plan of SP 'Ecotechnology', by additionally including new study courses and restructuring the previous ones, as well as the developed and licensed (10.02.2021) professional bachelor's study programme 'Environmental Innovation Technologies', which will successively replace the programme evaluated in the previous accreditation **'Environmental and Renewable Energy Resources Management and Engineering'**.

Implementation of expert recommendations have favourably influenced quality of studies in Environmental protection division.

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).

After the evaluation of the new study programme, 'Environmental Innovation Technologies', experts have provided short- and long-term recommendations. The short-term recommendations were related to the improvement of the descriptions of several courses, mostly in the bibliography section. These recommendations were carried out before the meeting of the Study Quality Committee (SQC). The long-term recommendations and their implementation plan goes as follows:

1. To ensure regular and more active engagement of all academic stuff that is involved in the implementation of all study programmes in scientific research, international mobility and professional development, in order to ensure the inclusion of actual innovative solutions (innovations) in the implementation of the programme.
   The implementation of the recommendation will be ensured in accordance with the development plan of the study field 'Environmental Protection' for 2021-2027, where these issues are mentioned.
2. To supplement the internship regulations with a condition on regular communication between the internship provider and the student during the internship (not after it) regarding the progress of the internship and the gained knowledge. The internship descriptions will be reviewed and supplemented accordingly (deadline — year 2023).
3. To supplement the minimum requirements of the final thesis with sections certifying the

engineering knowledge of the student, and to include mandatory calculations, drawings and descriptive parts that characterise the course of the developed engineering solutions within the final thesis. These aspects will be included in the methodological instructions for the study and final thesis of the study programme ‘Environmental innovation technologies’, which will be developed by the year 2022.

4. To ensure international and national cooperation with other educational institutions to secure the mobility of academic staff and the opportunity to implement the programme in several educational institutions, as the academic staff in Latvia is quite limited.
   The implementation of the recommendation will be ensured in accordance with the development plan of the study field ‘Environmental Protection’ for 2021-2027, where these issues are mentioned.
5. To increase the competencies of the academic staff to integrate the improvement of transversal skills along with the theoretical content of the study courses. The course descriptions will be reviewed and supplemented accordingly — deadline — year 2023.

The previous list of the recommendations from accreditation experts and the corresponding list of actions taken by the FSE can be viewed in appendix **II.6.2A_Implementation of expert recommendations** ; the analysis can be found in Section **II.6.1**.

Annexes

I. Information on the Higher Education Institution/ College		
List of the governing regulatory enactments and regulations of the higher education institution/ college	I.1.2.A_Main internal laws and regulations of Liepaja University.pdf	I.1.2.A_LiepU_galv_norm_akti_regul.pdf
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II. Description of the Study Direction - 1. Management of the Study Direction		
Plan for the development of the study direction (if applicable)	II.1.3.A_Development_plan_for the study direction.pdf	II.1.3.A_Studiju virziena vides aizsardziba attistibas plans 2021.-2027.gadam.pdf
Management structure of the study direction	II.1.4.A_Management_structure_of_study_direction.pdf	II.1.4.A_Vides aizsardzības virziena pārvaldības struktūra.pdf
II. Description of the Study Direction - 3. Resources and Provision of the Study Direction		
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Biographies of the teaching staff members (in Europass Curriculum Vitae format)	II.3.6.B_CV_ENG.pdf	II.3.6.B_CV.pdf
Summary of the statistical data on the incoming and outgoing mobility of the teaching staff over the reporting period	II.3.6.C_Lecturers_mobility.pdf	II.3.6.C_pasniedzēju_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	II.4.4.A_List of publications and works of art creation.pdf	II.4.4.A_Macibspeku publikaciju un makslas darbu saraksts.pdf
II. Description of the Study Direction - 5. Cooperation and Internationalisation		
List of cooperation agreements	II.5.1.A_Cooperation_agreements.pdf	II.5.1.A_Sadarbības līgumi.pdf
Statistical data on the teaching staff and the students from abroad	II.5.2.A_Incoming student_lectures_EN.pdf	II.5.2.A_Ienakošie pasniedzeji_studenti.pdf
Statistical data on the mobility of students (by specifying the study programmes)	II.5.2.B_Outgoing_mobility_students.pdf	II.5.2.B_Vides aizsardzības virziena studējošo izejošā mobilitāte.pdf
Description of the organisation of the traineeship of the students	II.5.3.A_Regulations_on_internship.pdf	II.5.3.A_Noteikumi par praksi LiepU.pdf
Information on the agreements and other documents confirming the traineeship of the students in companies	II.5.3.B_Intership agreements_The translation of the work.pdf	II.5.3.B_Līgumi_par_prakses_nodr..pdf
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	II.6.2.A_Implementation_of_expert_recommendations.pdf	II.6.2.A_Ekspertu_rekomendāciju_izpilde.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.	II.7.A_Attestation_Language.pdf	II.7.A_Apliecinajums_valsts_valodai.pdf
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)		
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		
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.		
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	29.04.2021_1.-1.6._119.edoc	15.03.2021_1.-1.6._72.edoc

Other annexes

Name of document	Document
Nolikums par Stud. virz. vaditajiem un stud. progr. direktoriem	II.1.4.B_Nolikums par Stud. virz. vaditajiem un stud. progr. direktoriem.pdf
Regulation regarding the heads of study directions and directors of study programme	II.1.4.B_Regulation regarding the heads of study directions and directors of study programme.pdf
LiepU kvalitātes nodrošināšanas sistēma	II.2.2.A_LiepU_kvalitātes_nodrošināšanas_sistēma.pdf
Nolikums par Liepajas Universitates Studiju virzienu padomem	II.2.2.B_Nolikums par Liepajas Universitates Studiju virzienu padomem.pdf
Instructions on Liepaja University Study Directions councils	II.2.2.B_Instructions on Liepaja University Study Directions councils.pdf
Vides aizsardzības virziena studiju programmas	II.2.2.A'_Vides aizsardzības virziena studiju programmas.pdf
Iekšējās kvalitātes nodroš. sistēma	II.2.5.A_Iekšējās kvalitātes nodroš_sistēma_.pdf
Internal quality assurance system	II.2.5.A_Internal quality assurance system.pdf
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LiepU Akademiska personala attistibas pasakumu plans 2018-2022	II.3.4.B_LiepU_Akademiska_personala_attistibas_pasakumu_plans_2018-2022.pdf
LiepU Dev. Plan of Academic Staff 2018-2022	II.3.4.B_LiepU_Dev. Plan of Academic Staff_2018-2022.pdf
LiepU Cilvekresursu attistibas plans 2018-2023	II.3.5.B_LiepU_Cilvekresursu_attistibas_plans_2018-2023_LV.pdf
LiepU Human Resourse Development Plan for 2018 -2023	II.3.5.B_LiepU_Human Resourse Development Plan for 2018 -2023.pdf
LiepU Pedagogu izglitibas attistibas plans 2018-2023	II.3.5.B`_LiepU_Pedagogu izglitibas attistibas plans 2018-2023.pdf
LiepU Teacher Education Development Plan 2018 -2023	II.3.5.B`_LiepU_Teacher Education Development Plan 2018 -2023.pdf
LiepU studejošo skaita dinamika 2015-2021	I.1.1.B.LiepU studejosa skaita dinamika 2015_2021.pdf
Dynamics of LiepU student numbers during the assessment period 2015-2021	I.1.1.B.Dynamics of LiepU student numbers during the assessment period 2015_2021.pdf
Vides aizsardzības virziena SVID analīzes rezultāti	II.1.3.B_Vides aizsardzības virziena SVID analīzes rezultāti.pdf
LiepU studiju virzieni un programmas 2021	I.1.1.A.LiepU_studiju virzieni un programmas_2021.pdf
LiepU study directions and study programs 2021	I.1.1.A.LiepU_study directions and study programs_2021.pdf
Vides aizsardzības virziena studējošo PRAKSES mobilitāte	II.5.3.C_Vides aizsardzības virziena studējošo PRAKSES mobilitāte.pdf
DIF laboratoriju aprīkojums Vides virziena atbalstam	II.3.2.A_DIF_laborat_aprīk_Vides_virziena_atbalstam.pdf
Lēmums par LiepU attīstības stratēģijas pagarināšanu	II.1.1.A_Lemums_par_LiepU_attistibas_strategijas_pagarinasanu.pdf
Comparison of LiepU Professional Master's study programme 'Eco-technologies' with other university study programmes	II.1.1.D_Comparison_Ecotech_with_other_programmes.pdf
Referāti starptautiskajos un vietējos zinātniskās komunikācijas pasākumos	II.4.4.B_Piedalīšanās_konferencēs.pdf
Papers in international and local scientific communication events	II.4.4.B_Conferences.pdf
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Financial security of the study direction	II.3.1.A_ Financial security of the study direction_EN.docx
Results of the Environmental Protection Field SWOT Analysis	II.1.3.B_Results of the Environmental Protection Field SWOT Analysis.pdf
Study direction "Environmental protection" study programmes in LiepU	II.2.2.A'_Study direction "Environmental protection" study programmes in LiepU.pdf
VIT salīdz. ar citām programmām	II.1.1.C_ViT_salīdz._ar_citām_programmām.pdf
FSE laboratory equipment for the study direction "Environmental Protection"	II.3.2.A_FSE_laboratory_equipment.pdf
Studiju programmas „Ekotehnoloģijas" salīdzinājums ar citu universitāšu studiju programmām	II.1.1.D_studiju programmas Ekotehnologijas salidzinajums ar citam programmam_LV.pdf
On the prorogation of duration of the LiepU Development Strategy	II.1.1.A_On the prorogation of duration of the LiepU Development Strategy_EN.pdf
LIEPAJA UNIVERSITY QUALITY ASSUARNCE SYSTEM	II.2.2.A_Liepaja University Quality assuarnce.pdf
Comparison of the study programme Environmental innovation technologies with study programmes of other higher education institutions	II.1.1.C_Comparison of the study programme Environmental innovation technologies with study programmes of other higher education institutions.pdf
1 Presentation regarding strategy (added after meeting with HEI management)	VIDE_EKSPERTI_15.06.2021.pptx

2 Link to video about laboratories used in studies	Video link.txt
3 Responses to experts questions prepared by LiepU	1University of Liepāja Latvia Evaluation - List of Questions to Institution_28.06.2021._DE_MZ.docx
4 LiepU Development strategy for 2016-2020	Attachment No1. LiepU Development strategy for 2016-2020.pdf
5 Multikriteriju analize - presentation (Latvian only)	Attachment No2. FRICKAUSA ZANE Multikriteriju analize.pptx
6 Information from feedback (Latvian only)	Attachment No3. Apkopojums_DIF_2020_sept2.pptx

Ecotechnologies

Title of the higher education institution	*Environmental Protection*
ProcedureStudyProgram.Name	*Ecotechnologies*
Education classification code	*47851*
Type of the study programme	*Professional master study programme*
Name of the study programme director	*Lilita*
Surname of the study programme director	*Ābele*
E-mail of the study programme director	*lilita.abele@liepu.lv*
Title of the study programme director	*Mg.sc.env.*
Phone of the study programme director	
Goal of the study programme	*The objective is to provide holistic and sustainable development-oriented professional master's studies in ecotechnology that meet the economic, environmental and social needs of the country, promoting the integration of interdisciplinarity and research activities and independent development of sustainable competence-oriented environmental specialists*
Tasks of the study programme	*1. ensure a critically reflective understanding of the conceptual knowledge of environmental science, sustainable development, the European Green Course, circular economy, industrial symbiosis and develop students' skills in the application of this knowledge;* *2. promote the development of academic and professional skills in ecotechnologies corresponding to the requirements of the labour market, social, environmental and economic needs, creative and critical thinking of the student;* *3. involve students in research activities, creation of innovations and their transfer in the economy, environment, social sphere;* *4. promote a sense of belonging to the single European educational area and the ability to constructively assess the diversity of its environment.*

Results of the study programme	*During the studies, the student has acquired theoretical knowledge and research work experience for the development of an academic and professional career. The learning outcomes of the study program comply with the Regulations on the Classification of Education in Latvia (Cabinet of Ministers Regulation No. 322; Table 2).* *The professional master in Environmental Sciences will be capable of:* *displaying a comprehensive knowledge of facts, theory, and regularities required for his/her personal development, civic participation, social integration, and further education. He/she is also capable of understanding the details and showing his/her diverse knowledge of specific facts, principles, processes, and terms within standard and non-standard situations determined by the study or professional field. He/she can show knowledge of technologies and methods of completing study tasks or work tasks within the profession. He/she can plan and organize work using different methods, technologies (incl. information and communication technologies), devices, tools, and materials to perform the tasks. He/she is also capable of finding, evaluating, and creatively using the information to perform study or professional work tasks and find solutions to problems. The professional master's candidate must speak and be able to write in at least two languages both in a familiar and unfamiliar context, and he/she must be capable of independently working in the profession, and also of learning and cooperating.* *The candidate must be motivated to work on his/her career, further education, and lifelong learning in a knowledge-based, democratic, multilingual, and multicultural society in Europe and the world. The candidate can also plan and perform study or professional work tasks individually or by leading a team and taking responsibility for the quality and quantity of the study or professional work results.*
Final examination upon the completion of the study programme	*Writing and defending the master's thesis.*

Study programme forms

Full time studies - 1 years, 5 months - latvian

Study type and form	*Full time studies*
Duration in full years	*1*
Duration in month	*5*
Language	*latvian*
Amount (CP)	*60*
Admission requirements (in English)	*2nd level professional higher education (applicant must have a professional higher education diploma or a professional qualification diploma or a professional bachelor's and professional qualification diploma)*
Degree to be acquired or professional qualification, or degree to be acquired and professional qualification (in english)	*Professional master's degree in environmental science and environmental management*
Qualification to be obtained (in english)	*-*

Places of implementation

Place name	City	Address
University of Liepāja	LIEPĀJA	LIELĀ IELA 14, LIEPĀJA, LV-3401

Full time studies - 1 years, 5 months - english

Study type and form	*Full time studies*
Duration in full years	*1*
Duration in month	*5*
Language	*english*
Amount (CP)	*62*
Admission requirements (in English)	*2nd level professional higher education (applicant must have a professional higher education diploma or a professional qualification diploma or a professional bachelor's and professional qualification diploma)*
Degree to be acquired or professional qualification, or degree to be acquired and professional qualification (in english)	*Professional master's degree in environmental science and environmental management*
Qualification to be obtained (in english)	-

Places of implementation

Place name	City	Address
University of Liepāja	LIEPĀJA	LIELĀ IELA 14, LIEPĀJA, LV-3401

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 professional master's study programme ‘Ecotechnologies’ at the University of Liepaja is being implemented for the seventh year. Changes in the programme have been made regularly - after analysis of the results of each study year. The programme's main goal is to offer and provide opportunities for master's studies in environmental science to obtain a professional master's degree in environmental science and environmental management. The studies further educate various specialists in eco-technologies, environmental technologies, circular economics and environmental psychology, promoting the acquisition of innovative knowledge and skills.

The studies promote the development of a creative personality with the necessary knowledge, skills and competencies in professional activities in the environmental field to ensure the implementation of the UN goals of sustainable development and a circular economy.

During the studies, students are provided with interdisciplinary studies unique to the Latvian higher education environment (unique - because complaints in respect to the implementation of the interdisciplinary principle in most other cases are reduced only to the application of the multidisciplinary principle), aimed at using eco-technological methodologies not only for the environment but also for health, business, problem-solving, adequately reflecting the specifics of modern labour market development, which is characterized by difficulties in defining future professions and qualifications: people often get an education in one sector but work in another, and often work in several jobs/projects at the same time. The mentioned uniqueness of the programme has been identified in comparison with the Latvian and foreign study programmes

Professional master's study programme: **ECOTECHNOLOGIES**

Code: 47851

Credit points 60 (ECTS 90)

Form and duration of studies: full-time studies

- 1.5 years (for students with previously acquired level 2 professional higher education);

The degree to be obtained: The professional master’s in environmental science and environmental management.

The education obtained as a result of studies opens opportunities for graduates to work in:

- state institutions;
- local governments and their agencies;
- business;
- consulting companies;
- science and research;
- continue studies in doctoral study programmes in Latvia or abroad.

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.

The number of students in the professional master's study programme ‘Ecotechnologies’ clearly indicates the demand and competitiveness of the programme. During the reporting period, the popularity of the study programme ‘Ecotechnologies’ offered in the field has increased, because a study time plan suitable for the employed students has also been chosen for the implementation of the programme. Owing to an option to study twice a month on weekends and combine studies with work, interest in the studies is stable. Distance learning creates an opportunity for those from all over Latvia to study in the programme; it is no longer regional in nature.

The stable demand for the study programme indicates a successful combination of the study form, study course planning and content, which is also interesting for foreign students. The number of students in the programme was as follows: 11 in 2015, 21 in 2016, 21 in 2017, 33 in 2018, 29 in 2019 and 19 master’s students in 2020. The decrease in the number of students in 2020 is explained by the impact of the COVID-19 pandemic and the fact that the English language group was not recruited.

Since 2016, studies are also conducted in English. Most of the students in this group come from Pakistan, but there are also students from India and China. The number of foreign students has increased from 1 student in 2016 to 12 students in 2018 and 9 students in 2019. In 2020, the English language group was not recruited because students were not ready to start their studies remotely.

The largest dropout of students in the English group was observed in 2017 and 2019. The main reasons for the students' ex-matriculation are related to examinations not passed within the set deadlines or other tasks not performed, as well as at their own request. When researching the reasons students have voluntarily stopped studying, the inability to combine studies with work was mentioned as the main reason for dropping out. Health problems were listed as the second reason. Often students mention several circumstances that led to the decision to discontinue studies.

The ability of the study programme to provide an English language group for the students with private funding clearly shows the competitiveness of the study programme, the quality for which students are willing to pay and the availability of the existing tuition fees according to the economic situation in the country and compared to similar study programmes in Europe. The largest dropout of students in the English group was observed in 2019. The main reasons for students' ex-matriculation are related to the examinations that have not been passed within the set deadlines, mainly for failure to submit master's theses.

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.

In the 2014/2015 academic year, during the start of implementation of the study programme, a positive expert assessment was received on the content of the study programme, interdisciplinarity, and the need for such a study programme. The goal of the study programme is to provide holistic and sustainable development-oriented professional master's studies in ecotechnologies that meet the economic, environmental and social needs of the country, and the objectives are closely related to its title ‘Ecotechnologies’, for example, an objective to provide a critically reflective understanding of the conceptual knowledge of environmental science, sustainable development, the European green course, the circular economy, industrial symbiosis and develop the students' skills in the application of this knowledge.

In turn, the easy-to-understand admission requirements set for the study programme ensure both the provision of the necessary knowledge and skills to the student depending on his or her previous education, qualification and the specified total study length of at least five years for obtaining a master's degree.

Admission requirements are harmonized with the state education standard (*Cabinet Regulation No. 512 of 26 August 2014 ‘Regulations on the State Standard of Second Level Professional Higher Education’*) and the University of Liepaja Admission Regulations (please refer to the electronic link in **Annex 1.2.A.** Main Internal Regulations of the Liepaja University).

When admitting students, both the compliance of the potential student's education with the requirements of LiepU and the ability to orientate in the chosen field, which is ensured by the submission of the report and discussions provided for in the admission regulations, are checked. The submitted reports are reviewed by the LiepU's leading lecturers representing the specific field with appropriate education and professional experience.

The content connection of the study courses with the real situation in the workplace is initially tested during the internship, when students performed internship tasks in companies, institutions, local governments, or education departments, and supplemented the theoretical knowledge with the knowledge acquired during the internship.

The next point of connection is the writing of a master's thesis. Specialists in the specific field or topic are involved as supervisors and reviewers of the master's thesis. The final point of contact is the defence of master's theses, where the commission for the defence of theses includes the representatives from the business environment, public administration or local government institutions, as well as representatives of the field of education.

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 professional master's study programme ‘Ecotechnologies’ is developed in accordance with the Law on Education, the Law on Higher Education Institutions of the Republic of Latvia, the Regulations Regarding Licensing of Study Programmes, the Constitution of the Liepaja University (LiepU) and the requirements of other laws and regulations. The need for specialists prepared in the study programme ‘Ecotechnologies’ is substantiated by the increase in the supply of natural sciences and engineering in higher education stipulated in the Education Development Guidelines for 2014-2020. The study programme belongs to the STEM programme group, which corresponds to the priorities of the local and European changing labour market. The form and content of the programme correspond to the development trends of the European Higher Education Area. The innovation of the programme is an interdisciplinary approach and the integration of the results of the study courses in research work. The programme is implemented bilingually, ensuring the integrated acquisition of the content of the study course and foreign languages.

The study programme and its content are designed to provide competitive education in the conditions of a changing labour market - it includes the competencies necessary for environmental technology, environmental management and circular economy tasks, thus opening wide career opportunities in various types of companies and institutions. In addition, the study content also provides the knowledge and skills necessary for starting a business, as well as develops non-standard problem-solving competencies, looking at such innovative areas as ecotechnology, biomimicry and biotechnology. Circular economy and recycling issues also play an important role, being linked to the EU environmental policy priority of making the EU a world leader in the circular economy and waste management, with a recycling target of 65% by 2035.

Another precondition for the correspondence of the study courses to the actual market needs is the attraction to the study courses of the lecturers, whose daily work is closely related to the field. In order to assess whether the study programme meets the real market requirements, the progress of the graduates is followed, and the feedback provided by them analysed. An important contribution to the topicality of the course content is given by the experience gained during students' internships and feedback, as well as information from the organizations where students undergo internships.

In 2019, Liepaja University started participating in the European Social Fund project ‘Perfection of the Academic Staff of Liepaja University in the Areas of Strategic Specialization – Natural Sciences, Mathematics and Information Technologies, Art, Social Sciences, Commerce and Law” (No. 8.2.2.0/18/A/02). Within the framework of the project, the implementation of internship measures for the improvement of professional competence of the academic staff of the University of Liepaja was started in cooperation with entrepreneurs in Latvia. The goal of the internship activities is to improve the professional competence of the academic staff of the Liepaja University, strengthen and develop the connection of education with the national economy and ensure contemporary higher education corresponding to the needs of students, develop and integrate the professional competence of academic staff in the study programmes and study courses. Lecturers of the study programme ‘Ecotechnologies’ also participate in internship events. The companies already carrying out and planning internships are mostly those whose activities include innovation, research and technological development. The selected companies are open to cooperation, with local and international experience, with the aim of being recognized and are the leaders in the industry in the region, the Baltic States.

In order to ensure compliance of the study content with the development trends of the industry and the labour market in the implementation of the study programme, the representatives of the employers and industry organizations, for example, from the Green and Smart Technology Cluster, SIA Balticfloc, SIA Skara, SIA Liepājas RAS, Liepaja City Council Environment Department and others, were invited. Cooperation with the representatives of employers and industry organizations

will continue during the implementation of the programme.

Granting of the Master's degree is based on the achievements and verities of the Environmental Science and Management field of science.

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 interconnection of study courses and the connection of the study programme with the bachelor's programme takes place not only with the help of mapping (APPENDIX_III.2.5.C) but also by ensuring that appropriate competencies, knowledge, skills and attitudes set forth in the Regulations on the state standard of second-level professional higher education (Cabinet Regulation No. 512, Riga, 26 August 2014, Protocol No. 45 31)) are provided throughout the bachelor's and master's study process. All the mentioned elements are closely related to the goal, objectives, and results of the study programme.

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.

The methods of implementation of study courses are indicated in the descriptions of study courses, and their choice is mostly up to the lecturers. When updating the descriptions of study courses, the conformity of the implemented methods to achieve the goals of the study course and the programme is also assessed.

The content of studies is acquired in the form of contact hours (lectures, practical work, laboratory work, seminars) and independent work; the amount and the requirements of course contact hours and tasks of independent work may vary from one course to another. Not less than 30% of the contact hours from the planned number of hours are provided by organising 23 lectures/laboratory works per month.

The Liepaja University Regulations of study course/module examination (link to electronic document here: Documents and regulations | Liepaja University (liepu.lv)) provides an objective assessment of students' knowledge and promotes systematic study work during the semester. When evaluating the acquisition of the programme, the following generally accepted basic principles are observed:

- the principle of openness of rating, which is a set of requirements for the rating of the study result in accordance with the goals and objectives of the study programme and study courses;

- the principle of aggregation for positive achievements when the acquired education is rated by summing up the positive achievements;
- the principle of mandatory nature, which determines the necessity to obtain a successful rating of the acquisition of the entire content of the study programme;
- the principle of diversity of the types of tests, using different types of tests to rate achievements;
- the principle of the possibility of reviewing the rating, for the implementation of which the university has determined the procedure by which the obtained rating may be reviewed;
- the principle of conformity of rating, which enables to demonstrate abilities, knowledge, skills and accomplishments at all levels of acquisition, inappropriate tasks and situations.

In examinations and tests, various types of testing, such as oral, written form, combined form, or computerized form, can be used. Pre-exam consultations are available for students.

The implementation and rating methods of the study programme study courses are applied in accordance with the Liepaja University Regulations of study course/module examination (please refer to the electronic link in **Annex 1.2.A.** The Main Internal Regulations of the University of Liepaja). In turn, information on the principles of the student-centred education approach can be found in **Paragraph 1.6** of Section II - Description of the Study Field (1. Management of the Study Field).

The academic staff is available throughout the study year with the help of information and communication (ICT) technologies.

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.

A professional internship is planned during the studies.

The study programme prescribes an internship in the amount of 9 CP, for persons who have previously obtained a professional qualification and who are the 1st year students of the master’s study programme. The connection of the internship with the study results to be achieved in the study programme is ensured by the internship tasks, which are based on the goals of the study programme, and ensures the supplementation of theoretical knowledge with practical skills. Additional support within the internship is provided for the foreign students, and internship positions where the working language is English are ensured.

Before starting the internship, students are given an internship briefing, in which they are introduced to the tasks to be performed during the internship, as well as to the expected internship report. The students and internship supervisors in the workplace are provided with information about internship tasks and the results to be achieved. At the end of the internship, both employers and students have the opportunity to provide feedback on the internship. By analysing the obtained internship reports, it is possible to get an idea of the internship company or institution and decide on further use of this internship place in ensuring the study process.

The internship prescribed within the study programme is a part of the study of the master's thesis to be developed at the end of the studies.

The connection of the internship tasks with the study results to be achieved in the study programme can be verified in the mapping of the study programme and the study courses in APPENDIX_III.2.5.C, as well as in the description of study courses about the specific internship.

As shown in the mapping in APPENDIX_III.2.5.C, the internship ensures the interconnection of the theoretical part of the study programme both with the work environment and provides an important orientation in writing a master's thesis. Internship tasks ensure the development of students' competencies, by developing logical and critical thinking in analysing current information, as well as promoting students' ability to apply the acquired knowledge not only in practice but also for a purpose of creating new knowledge.

In cooperation with the LiepU Foreign Affairs Department, the students can receive a scholarship to do an internship abroad within the ERASMUS + project.

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.

In writing, reviewing and defending the final theses, the defence commission includes not only the academic staff of the university, but also professionals in the field, usually the heads of companies or institutions. The involvement of professionals ensures the connection of theses with current events in the field, as well as the evaluation of professionally directed work. Most students choose to write their final theses about the organizations or industries in which they are personally involved. Such a perspective not only gives the students themselves a much deeper insight into the chosen issues, but also provides practical solutions for the further development of a particular organization or field. Taking into account the actual connection of students with the region, such internship ensures continuous contribution of the university to the development of the region in the fields of environment, sustainable development and circular economy and connection with local entrepreneurs, state and municipal employees. This actual regional focus is also confirmed by the titles of the students' theses.

The topics of students' final theses for the self-assessment period can be found in the section of other annexes of this report (Annex III.2.5.F).

The topics of students' theses correspond to the basic principles of sustainable development and circular economy, current events in the labor market, and important topics of orders. This is evidenced by the feedback of employers both at the regular meetings and in the processes of defending master's theses.

The following master's theses can be mentioned as current examples of the final theses: 'Evaluation of mechanical-biological treatment possibilities of municipal waste: Example of the Liepaja Region; 'Introduction of macroalgae Furcellaria Lumbricalis processing technologies on the Kurzeme coast of the Baltic Sea'; 'Impact of design and management technologies on the productivity of aspen hybrid agroforestry systems'; 'Integration of eco-construction in urban management'; 'Sustainable management of textile waste'; 'Development of an innovative computer case based on the principles of circular economy'; 'Technological possibilities of cannabis (Cannabis sativa L.) processing in Latvia'; 'Use of pine needle extract in topical treatment of Acne vulgaris'; 'Sustainable development for SIA Arbo Windows glass package production plant' and others.

In 80% of the cases the mark is 8 (very good), 10% — 9 (excellent), 9% — 7 (good) and 1% — 6 (almost good).

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.

Evaluating the results of the survey of master students on satisfaction with the study programme, it must be concluded that the majority of students are satisfied with it. Students' opinions of the period from 2016 to 2020 are summarized below, 80% of all the students in the programme have participated in the survey.

Students study in the chosen specialty at the expense of the state budget and such an opportunity, as well as the content of the study programme and the location of the university close to home, has been important in the choice of the study programme. Students are fully satisfied with the programme, but one - partially. Students rate the quality of the study programme, the knowledge, skills and competencies acquired during the studies as good and very good. All respondents believe that the study programme is competitive in Latvia, the acquired knowledge and skills will be sufficient for work in their specialty, the study process makes it possible to get acquainted with the specifics of the field outside of lectures and broaden the general horizon.

The strengths of the study programme are very interesting and exciting studies, an opportunity to study on weekends (Friday, Saturday), broadening of horizons, the information obtained in various areas related to the environment and technology, changing the way of thinking. Students emphasize that so far there have been no study courses that do not correspond to the programme.

The small number of students is mentioned as a weakness of the study programme, preventing the possibility to choose all three areas: environmental economy, environmental psychology, environmental technologies, and technical provision.

Key recommendations: reduce the number of subjects to be studied while maintaining the most important ones. In order to pass the study courses, the student must design a multidisciplinary research paper covering an environmental problem and looking at it from all angles - by analysing it in connection with what has been taught in the semesters, to make it easier for students to understand the links between all courses, as well as the interconnection of processes in nature and environment.

By analysing the general rating of students, it must be concluded that students rate positively both the programme and the available information about studies and related activities. There is no doubt that work needs to be done to improve the average and negative ratings, but the dispersion of responses across the entire range of responses, the small number of responses and the different ratings call for a cautious rating of the validity of responses according to the actual situation. Lack of opinion on a particular issue, lack of interest in anything outside of studies, subjective expectations, previous experience and other circumstances not related to the study process can be influential for giving an average or poor rating.

One of the graduates is thinking of continuing his doctoral studies. Everyone points out that the education obtained was important for the employer when starting the employment relationship. Graduates also point out that the study programme is competitive in the Latvian labour market and of high quality. The content of the study programme corresponds to the latest development trends,

and the acquired knowledge, skills and competencies correspond to the requirements of the modern labour market.

Although the study programme ‘Ecotechnologies’ has undergone significant changes every year during the self-assessment reporting period, there are no graduates who have mastered all the significant supplements and improvements included in the study programme, for example - the interconnection of the first-semester study courses by developing one integrated study project. However, by surveying the graduates of the previous study years, results have been obtained that can be useful in further improving the study process. Graduates of the programme ‘Ecotechnologies’ work in their speciality, as well as are employed as lecturers at LiepU.

Strengths of the study programme in the 2019 students' opinion:

- The fact that you can study on a budget
- Lecturers! and their proposed content.
- Future profession
- Interesting and practically oriented courses.

Weaknesses and shortcomings of the study programme:

- Lack of technical provision - a possibility to fully use the existing equipment of the university is not provided.
- Insufficient technical provision for videoconferencing.
- Some items slightly overlapped

Possibilities for improving the study programme:

- Extend training for half a year longer
- Extend - practical classes are very interesting, and I would like more of them.
- By attracting additional guest lecturers from specific companies in the industry!
- One lecturer for each subject. The study programme must be extended. Everything should be taught from an ecotechnology perspective.

Correspondence of study courses to the study programme:

- Complies
- Study courses and their content are very appropriate!
- Adequate
- Satisfied with everything.

In general, the study programme is rated as good, students attend 75 - 100% of lectures.

Recommendations for the improvement of the study programme are mainly focused on the audit of study courses, attraction of new lecturers, especially foreign lecturers, diversification of lecture content and more practical knowledge. The attitude of the lecturers towards the students is rated as good or very good, but ratings in respect of the technical provision and work in MOODLE differ significantly, from bad to very good. All students work in parallel with their studies.

Accordint to the results of the survey, changes are made both in the content and amount of the study courses every year and lecturers are changed.

The survey of employers proves that the student general professional background level is good in the professional master study programme "Ecotechnologies". Students demonstrated their professional development in waste management, improvement of biotechnological processes in landfill energy cells, gas formation, collection and activities of electricity plants, technology research, analysis of options on different markets of the EU, Asia, Eurasia, assessment of plantation

forests and agroforestry systems, in the ability to plan their work, communicate with several and different field specialists in order to achieve the objective.

For development of the study programme the internship supervisors recommend paying more attention to the financial and economic aspects of the work, work with foreign literature, improvement of Russian and German language skills. Theoretical knowledge is valued as very good – students acquire independently the necessary knowledge, use different sources of information - publications, internet, communication with experts.

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.

In the previous self-assessment period of the study field accreditation, there were 17 students in this study programme, using the exchange opportunities of the ERASMUS + mobility programme to undergo internship in the following countries: Germany, Spain, Italy, Portugal, Lithuania. The opportunity to go on ERASMUS + post-graduate mobility is currently used by five graduates going to Norway, Sweden, and Cyprus.

In the 2018/2019 academic year, 9 students used an opportunity to acquire the study course 'Project Development and Management' at Klaipeda University. **(Please refer to ANNEX III.2.7.A)**

The number of incoming students during the accreditation period of the field can be seen in **ANNEX II.2.7.B.** A total of 20 students have chosen internship mobility and 9 students study mobility.

It is planned to promote the use of mobility opportunities even more by addressing students about ERASMUS + opportunities, by including in the introduction of the study programme when the first meeting of the programme director and students takes place, also a presentation about ERASMUS +.

So far, only once have students mastered the study course "Project Development and Management" at Klaipeda University. The content of the study course and the number of credit points corresponded to the study plan.

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.

Please refer to the information provided in criteria 3.1 - 3.3 of Section 3, Part II and ANNEX II.3.2.A.

The specific resources and technical provision listed in the annex are used for the implementation of the study programme.

Students are active in environmental chemistry, paper recycling and other laboratories. The laboratory work is included in the study subjects.

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.

As changes were made in the study programme each academic year for the implementation and approximation of the practical part of individual study courses to the requirements of the labour market and research activities, both guest lecturers within the framework of ERASMUS + mobility and professionals of the field were invited as lecturers. For example: Žaneta Simanavičiene, Dr.oec., Irena Mačerinskienė, Dr.oec., Erika Župerkiene, Dr.oec. (Lithuania), Gundega Lapiņa, Dr.admistr. (Germany, Max Planck Institute). Students have attended various foreign guest lectures at LiepU on the topics of circular economy, ecodesign, green energy, etc.

Internationally invited lecturers to include guest lecturers who are involved in the various SAM projects implemented at Liepaja University Olga Anne, Dr.sc.ing., Rasa Viederyte, Dr.oecd., and Tatjana Paulauskiene, Dr.sc.ing. from Klaipeda University. T. Paulauskiene continues cooperation and teaches the study course ‘Environmental Technologies’ in the volume of 4 CP.

Information about the teaching staff involved in the study programme can be found in section II - Description of the study field (3. Resources and provision of the study field).

Changes in teaching staff have improved the quality of studies, supplementing it with international experience and laboratory work opportunities at Klaipeda University.

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.

Information about the teaching staff involved in the study programme can be found in section II - Description of the study field (3. Resources and provision of the study field).

All teaching staff involved in the study programme - lecturers, incl. guest lecturers, comply with the conditions for the implementation of the study programme and the requirements of the laws and regulations (for example, the Law on Higher Education Institutions).

The involvement of teaching staff-practitioners helps students to ensure a better understanding of the interrelationships between theory and practice. Professionals from various fields are involved in teaching separate study courses, but there are no elected lecturers, due to the small number of lectures. Professionals in the field are involved in the provision of the internship and in the composition of the final state examination commission.

The following LiepU lecturers are involved in the implementation of the study courses:

- Ivars Kudreņickis, Dr.sc.ing., docent
- Liene Jākobsone, Mg.sc.env., lecturer
- Lilita Ābele, Mg.sc.env., lecturer
- Linda Lauze, Dr.philol., professor
- Natālija Cudečka - Puriņa, Dr.sc.administr., docent
- Roberts Jūrmalietis, Dr.biol., docent

The implementation of the study course ‘Environmental Technologies’ is ensured by the guest professor, Dr.sc.ing., Tatjana Paulauskiene from Klaipeda University.

In turn, the implementation of the study course ‘Ecodesign and Landscape Architecture’ is provided by Dr.arch. Una Īle, and the study course ‘Innovation Management and Eco-Innovation’ is provided by Dr.sc.administr. Iveta Cīrule.

In addition, the representatives of the companies, such as SIA Balticflok, SIA Skara, the Green and Smart Technologies Cluster, the Latvian Rural Advisory and Training Centre and others, are invited to individual lectures or workshops.

Distribution of teaching staff by academic position and election status:

Position	***Elected***	***Temporary engaged at work***	***Guest lecturers***	***Total***
Professor	1		1	2
Docent	3	2		5
Lecturer	1			1
Assistant		1		1
			Total	9

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.

The involvement of researchers and guest professors of the structural units of the Liepaja University - research institutes - in the development of scientific publications, the practical research results of which are sometimes the findings and results of the student's final study (master's thesis), and in the implementation and development of various joint projects can be assessed as a positive moment.

For example, Rasa Viederyte, Olga Anne, Tatjana Paulauskiene, Lilita Ābele (2019) SCOPUS, DIVERSITY OF ECO-INNOVATIONS TOWARDS SUSTAINABLE DEVELOPMENT: INVESTMENTS PLANNING PERFORMANCE, 19th International Multidisciplinary Scientific GeoConference and EXPO S G E M 2 0 1 9,(SCOPUS) http://toc.proceedings.com/49682webtoc.pdf

Tatjana Paulauskiene, Olga Anne, Rasa Viederyte, Lilita Ābele, Latvia (2019) (SCOPUS)THE UTILIZATION OF THE CELLULOSE-BASED AEROGEL FOR ANOIL SPILL CLEANING, 19th International Multidisciplinary Scientific GeoConference and EXPO S G E M 2 0 1 9, http://toc.proceedings.com/49682webtoc.pdf

Sulojeva, I., Ābele, L. (2016) (SCOPUS) INTEGRATION OF ECOLOGIC BUILDING MATERIALS TO IMPROVE ENERGY-SAVING OF HISTORIC BUILDINGS IN CITY MANAGEMENT 3rd International Multidisciplinary Scientific GeoConference SGEM2016, http://sgem.org/sgemlib/spip.php?article8164&lang=en

Jākobsone, L., Ābele, L. (2016) (SCOPUS) MECHANICAL BIOLOGICAL TREATMENT OPTIONS OF MUNICIPAL SOLID WASTE: CASE OF REGION LIEPAJA, LATVIA 3rd International Multidisciplinary Scientific, GeoConference SGEM2016 http://sgem.org/sgemlib/spip.php?article7986

Students were involved in several NORDPLUS Higer Education projects on the inclusion of circular economics in study courses and in the development and implementation of a separate study course ‘Ecodesign and Circular Economics’.

For example,

1. Nordplus Higher Education 2020, Circular Economy; Nr. NPHE – 2020/10036;
2. Fundamental and applied research project; Impact of COVID-19 on sustainable consumption behaviour and the circular economy (No. lzp-2020 / 2-0317)
3. Nordplus Higher Education 2020, Circular Economy; Nr. NPHE – 2020/10036;.
4. Nordplus Higher Education 2018, Intensive Course of Circular Economy; Nr. NPHE – 2018/10021;
5. Nordplus Higher Education 2017, Practical Approach for Teaching Circular Economy; Nr. NPHE-2017/10144;
6. Nordplus Higher Education 2017, Circular Economy Future; Nr. NPHE-2016/10249; (01.08.2016.- 30.08.2017.)
7. National Research Programme EKOSOC-LV, The impact of social change on the sustainable provision of ecosystem services, Nr. VPP 5_2_9;

More information on the topicalities and processes of the research activity can be found in section II - Description of the study field (4. Scientific research and artistic creation).

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 teaching staff employed in the study programme cooperates both in the development and implementation of joint research and projects (for example, in five NORDPLUS Higer Education projects in 2017 - 2020), as well as in the development of joint study course content and exchange of information on current events in the field - by meeting at various exhibitions in the scope of the sector (School, Business Days in Kurzeme, etc.), events, international conferences, seminars, and other networking events.

At the time of submitting the report, 8 lecturers per 21 students are involved in the programme.

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)		
Statistics on the students over the reporting period	III.1.2.A_Statistical_data_students_Ecotech.pdf	III.1.2.A_Statistika_par_stud_Ekoteh.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	III.2.5.A_Compliance of the study program “Ecotechnology” with the state education standard.pdf	III.2.5.A_Ekotehnologiju_atbilstiba_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	III.2.5.C_Mapping_Ecotech.pdf	III.2.5.C_Studiju_kursu_kartējums_Ekoteh.pdf
Curriculum of the study programme (for each type and form of the implementation of the study programme)	III.2.5.D_study programme_Ecotehnologies_plan.pdf	III.2.5.D_Studiju programmas Ekotehnoloģijas plans.pdf
Descriptions of the study courses/ modules	III.2.5.E_Descr_of_study_courses_Ecotech.pdf	III.2.5.E_Studiju_kursu_apraksti_Ekoteh.pdf
Description of the Study Direction - Other mandatory attachments		
Sample of the diploma to be issued for the acquisition of the study programme.	III.5.A_Diploma_diploma_supplement_sample_Ecotech.pdf	III.5,A_Diploma_diploma_pielikumu_paraugi_Ekoteh.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	III.5.B._Agreements_with_other_universities_The translation of the work.pdf	III.5.B_Līgumi_ar_citām_augstsk..pdf
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	III.5.C_Attestation_Ecotechn.pdf	III.5.C_Apliecinajums_Ekotehnologijas_zaud.pdf
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.	III.5.D_Certification_of_the_English_language_Ecotechn.pdf	III.5.D_Apliecinajums_anglu_val_Ekoteh.pdf
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	III.5.E_Study_agreements_Ecotech.pdf	III.5.E_Studiju_liguma_paraugi_Ekotehnologijas.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.		

Environmental innovation technologies

Title of the higher education institution	*Environmental Protection*
ProcedureStudyProgram.Name	*Environmental innovation technologies*
Education classification code	*42529*
Type of the study programme	*Professional bachelor study programme*
Name of the study programme director	*Viesturs*
Surname of the study programme director	*Kalniņš*
E-mail of the study programme director	*viesturs.kalnins@liepu.lv*
Title of the study programme director	*Dr.sc.ing.*
Phone of the study programme director	*26088324*
Goal of the study programme	*The objective of the study programme "Environmental Innovation Technologies" is to prepare competitive specialists in the field of environmental engineering who a) focus on current environmental technologies and their innovations and b) are able to apply them to specific situations in companies and institutions to reduce environmental impact and save resources; c) create appropriate innovations.*
Tasks of the study programme	*1. Ensure the acquisition of theoretical knowledge based on research and interdisciplinary approaches in natural sciences, environmental engineering, social sciences, economics and information technologies in accordance with the requirements of the professional higher education standard.* *2. Develop students' professional competencies to analyse and evaluate the quality of the environment, develop and recommend environmental engineering solutions, control their implementation and evaluate efficiency.* *3. Promote the development of the necessary competencies for the planning and organization of tasks in the working group (collective), using modern management methods and promoting sustainable development.* *4. Develop students' research work competencies, creative approach and innovative thinking in providing recommendations for the development and application of environmental technologies, as well as for further studies in the master's programme and self-education.* *5. Provide students with the opportunity to acquire practical skills in working with modern, appropriate scientific equipment, measuring equipment and information technology products.* *6. Ensure the acquisition and improvement of skills and abilities necessary for the performance of professional activities for environmental engineers in accordance with the requirements of the professional standard.* *7. Develop social and communicative competencies necessary for teamwork both on-site and off-site in the field of environmental engineering.* *8. Develop the ability to apply a creative approach to environmental technology problem solving.*

Results of the study programme	*1. Understanding of the functioning of environmental systems and environmental technologies.* *2. Skills in applying environmental technologies in specific problem situations.* *3. Innovation competencies in the field of environmental technologies. Non-standard problem-solving competencies.* *4. Ability to perform engineering design and environmental technology construction tasks.* *5. Ability to prepare, present and manage projects related to the environment.* *6. Ability to perform tasks of preparation, management or monitoring of environmental policy, management and other industry documents.* *7. Communication skills.*
Final examination upon the completion of the study programme	*Qualification Exam and Bachelor's Thesis*

Study programme forms

Full time studies - 4 years - latvian

Study type and form	*Full time studies*
Duration in full years	*4*
Duration in month	*0*
Language	*latvian*
Amount (CP)	*160*
Admission requirements (in English)	*secondary education*
Degree to be acquired or professional qualification, or degree to be acquired and professional qualification (in english)	*Professional bachelor's degree in environmental engineering*
Qualification to be obtained (in english)	*environmental engineer*

Places of implementation

Place name	City	Address
University of Liepāja	LIEPĀJA	LIELĀ IELA 14, LIEPĀJA, LV-3401

Full time studies - 4 years - english

Study type and form	*Full time studies*
Duration in full years	*4*
Duration in month	*0*
Language	*english*
Amount (CP)	*162*
Admission requirements (in English)	*secondary education secondary education and a proof of English language proficiency for the study program in English*
Degree to be acquired or professional qualification, or degree to be acquired and professional qualification (in english)	*Professional bachelor's degree in environmental engineering*
Qualification to be obtained (in english)	*environmental engineer*

Places of implementation

Place name	City	Address

University of Liepāja	LIEPĀJA	LIELĀ IELA 14, LIEPĀJA, LV-3401

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

During the self-assessment period, the professional bachelor's study programme “Environmental and Renewable Energy Management and Engineering” was implemented with a degree in environmental sciences and a professional qualification of an environmental management specialist or environmental engineer. On behalf of it within the project “Reducing the fragmentation of study programmes and strengthening the resource sharing in LiepU” 8.2.1.0/18/A/010, has been developed a new professional Bachelor study programme "Environmental Innovation Technologies" with an obtainable degree in Environmental Engineering and just one professional qualification - Environmental Engineer. Unlike the previous program, the new program will also be implemented in English.

As “Environmental Innovation Technologies” are based on the same professional standard - “Environmental Engineer” on which the environmental engineering sub-programme of the programme “Environmental and Renewable Energy Management and Engineering” is based, the objectives and tasks of both programmes are similar, and at the time of closing “Environmental and Renewable Energy Resource Management”, all students had chosen or expressed a wish to study in the sub-field of environmental engineering, all will be provided with a transfer to the new study programme “Environmental Innovation Technologies” in appropriate courses.

Students matriculated in the 2019/2020 academic year will be enrolled in the 3rd course and those matriculated in the 2020/2021 academic year - in the 2nd course.

Taking this into account and considering the fact that the content of both study programmes is similar, since they include the standard requirements of the same profession, and that most of the lecturers, especially in courses related to the specialisation, will remain the same (meaning that the research fields implemented by the aforementioned lecturers will be the same), from here on, in the parts of this self-assessment report that refer to the events that have already taken place within this reporting period and the information on the new programme (to which no students have been enrolled yet) that is not yet available, the previous programme — EREME — will be reviewed.

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.

The number of students in ‘Environmental and Renewable Energy Management and Engineering’ gradually decreased — from 49 to 15 within the reporting period— which was the reason for the creation of the new programme. Please refer to Appendix IV1.2.A for the detailed dynamics of

students in this programme in the reporting period.

During the reporting period, 46 students have graduated from the study programme “Environmental and Renewable Energy Management and Engineering” — approximately 11-14 at first, and 1-5 at the end of the reporting period. There was a student dropout, and the main reasons for this were family circumstances and the fact that most of the students work in addition to studying and are sometimes unable to combine studies with work.

To ensure the planned number of students in the new programme, aspects that were most likely a cause of the reduction of the number of students in the previous programme were eliminated. For example, there are more applied courses now, more field proffesionals are involved in teaching, etc.

Planned number of students - 10 in each course (40 in total). 10 students will be taken over from the previous 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 objective and tasks of the study programme ‘Environmental Innovation Technologies’ are related to the professional bachelor’s degree in environmental engineering and the qualification ‘Environmental Engineer’ (Approved year 2005) to be acquired, and the innovations mentioned in the title — their creation and application to specific problem situations. For example, the ability to adjust technology to the relevant issues is related to the technological design and implementation skills set within the standards of the profession, and the creative approach is related to the innovations mentioned in the title.

The learning outcomes comply with the name of the programme and the profession of an environmental engineer as well, and they are related to the study programme objectives and tasks — the skills and competencies that comply both with the technological design and implementation skills, such as engineering design and environmental technology construction tasks, and the use of a creative approach, e.g. competencies within non-standard problem situations.

The admission requirements are minimal, however, they match the goals and tasks of the programme, thus reaching a larger number of students.

Admission requirements are harmonized with the requirements corresponding to the industry and the admission regulations of Liepaja University (please refer to the electronic link in **Annex 1.2.A** “The main internal normative regulations of the Liepaja University”):

Admission requirements: secondary education

Students applying for study programmes taugt in English have to submit international English language certificate/proficiency letter.

Admission of foreign students and assessment of the adequacy of their level of the English language proficiency takes place in accordance with the “Procedure for the Admission of Foreigners to Liepaja University”: https://www.liepu.lv/en/61/documents-and-regulations

Competition criteria for persons who have acquired secondary education since 2004:

- CE in Latvian, mathematics, foreign language or STIP in foreign language.

Advantages:

- Winners of the 1st- 3rd place of the Latvian State Physics, Biology, Chemistry Olympiad;
- The 1st-3rd degree winners in the Chemistry, Biology, Engineering section of the Latvian State / Regional Student Scientific Conference.

Competition criteria for persons who have completed secondary education before 2004, as well as for persons who have acquired secondary education abroad or for persons with special needs:

- final grades in the Latvian language and literature, final grade in mathematics, final grade in a foreign language / or International Test Assessment in a foreign language.

Possibilities after earning a bachelor's degree and qualification:

- work in companies or institutions related to environmental technologies in Latvia and abroad, develop your business;

- continue studies in the LiepU master's study programme “Ecotechnology”, as well as in other universities in Latvia or abroad.

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 need for specialists prepared in the study programme “Environmental Innovation Technologies” is substantiated by the increase in the supply of natural sciences and engineering in higher education stipulated in the Education Development Guidelines for 2014-2020[1]. The study programme belongs to the STEM programme group, which corresponds to the priorities of the local and European changing labour market.

The study programme and its content are designed to provide competitive education in the conditions of a changing labour market — it includes the competencies necessary for environmental engineering and environmental management tasks, as well as the development and design of environmental technologies, thus opening wide career opportunities in different types of companies and institutions. To develop technology development and design competencies, courses, such as, for example, mechanics, technical graphics, electronics, the Internet of Things, etc., are taught, and, to develop environmental management competencies, courses like environmental politics, circular economy, environmental communication and ethics, etc., are taught. In addition, the study content also provides the knowledge and skills necessary for starting a business, as well as develops non-standard problem-solving competencies, looking at such innovative areas as

ecotechnology, biomimicry and biotechnology. Circular economy and recycling issues also play an important role, being linked to the EU environmental policy priority of making the EU a world leader in the circular economy and waste management, with a recycling target of 65% by 2035.[2].

In order to ensure compliance of the study content with the development trends of the industry and the labour market, representatives of employers and industry organizations, such as SIA “Vides un ģeoloģijas serviss” and “Zaļo un Viedo Tehnoloģiju Klasteris” were invited as experts and expert-consultants during the study programme development. During the development process, regular communication took place with the cooperation partners of the Faculty of Natural and Engineering Sciences - SIA “Liepājas enerģija”, the Environment Department of the Liepāja City Council, etc. Cooperation with the representatives of employers and industry organizations will continue during the implementation of the programme.

[1] https://www.vestnesis.lv/url.php?id=266406 [accessed 10/04/2020] ("Latvian only")

[2] https://eur-lex.europa.eu/legal-content/LV/TXT/?uri=CELEX%3A32018L0851 [accessed on 10.04.2020]

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 title of the study programme ‘Environmental innovation technologies’ complies with the contents of the study course, as almost all of the theoretical study courses of the speciality teach not only the basic theory but also the relevant aspects of technological innovation, the newer alternative development trends. In addition to the acquisition of the basic competencies expected from an environmental engineer, the programme also includes courses such as ‘Innovation Management’, ‘Ecotechnology and Biomimicry’, etc., which are aimed towards creating innovations, and they comply with one of the tasks of the programme — to develop the ability to apply a creative approach to environmental technology problem solving.

The achievable results of the study courses of the study programme “Environmental Innovation Technologies” are reflected in the content of the study courses, which are closely related to the objective, tasks and achievable results of the study programme. The correspondence of the study courses to the results of the study programme is depicted in the mapping of the study courses (see Appendix IV2.5.D).

The specific content and division of the study courses was based on the professional standard of the environmental engineer, which stipulates that the environmental engineer must be able to perform both environmental technology design and implementation and environmental management tasks, such as preparation of required documentation and participation in environmental impact assessment (EIA) procedures.

According to the mapping of study courses in Appendix IV2.5.D, it can be concluded that during the study process, competitive specialists in the field of environmental engineering, who understand environmental systems and technologies, orient in current environmental technologies and their innovations, are able to apply them to specific situations in companies and institutions, create

appropriate innovations, as well as perform management and supervision tasks - as defined in the objective of the study programme and described in the results to be achieved, are trained.

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.

The implementation and evaluation methods of the study courses of the study programme will be carried out in accordance with the Regulations of the University of Liepaja regarding the Examinations of the Study Course / Module (please refer to Annex 1.2.A**)**. In turn, information on the principles of the student - centred education approach can be found in Paragraph 1.6 of Section II - Description of the Study Field (1. Management of the Study Field).

Acquisition of the study programme courses takes place: in lectures; seminars; practical classes; consultations; practice; students' independent work; e-learning tools (Moodle) are available.

The main forms of knowledge testing are quizzes, tests, seminars, discussions, studies, etc. Students' knowledge is also assessed at the end of the study courses - mainly in sessions twice a year. In order to ensure a student-centred approach, the final assessment consists mainly of cumulative assessment, including the student's work throughout the study course. It is provided in each course individually, taking into account the specifics of a particular course - mid-seminars, tests and practical work, which are included in the final assessment or the final presentation, including the intermediate result and the lessons learned. The academic staff is available throughout the study year with the help of information and communication (ICT) technologies.

During the study year, a study paper is developed, defending of which takes place in public at the end of the study year. At the end of their studies, students take state examinations - they take a qualification exam and defend a bachelor's thesis. Bachelor's theses are evaluated by a reviewer and a state examination commission.

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.

The study programme envisages a total of 4 internships (26 CRP in total) - “Rural Internship” at the end of the first study year, in which the knowledge acquired in the study courses “Environmental Chemistry” and “Biology and Biochemistry” is strengthened, and “Internship I, II, III” in the spring semester of each subsequent study year.

During “Internship I”, students get acquainted with technical solutions for reducing environmental pollution and their application in specific problem situations, in specific companies. Within the

framework of “Internship II”, the technological process is introduced, focusing on its eco-efficiency aspects. The final - “Internship III” is intended to create a theoretical and experimental basis for a bachelor's thesis and to prepare a draft bachelor's thesis. The tasks and place of the internship are coordinated with the scientific supervisor of the bachelor's thesis. The interconnection of the internship tasks with the study results to be achieved in the study programme can be ascertained in the mapping of the study programme and study courses in Annex IV.2.5.D.

Support for the achievement of the tasks set within the internship is provided by means of theoretical courses that provide the whole theoretical basis for learning how to implement the internship tasks — the corresponding courses are indicated in each internship description, in the section ‘prior knowledge’.

In cooperation with the LiepU Foreign Affairs Department, the students can receive a scholarship to do an internship abroad within the ERASMUS + project.

Considering the fact that several large companies with international teams operate in and around Liepaja, such as ‘UPB Group’, it is envisioned that foreign students will be able to have their internship in Liepaja or its region, however, if there will be any difficulties finding an internship, ERASMUS+ will provide an opportunity to do the internship abroad. Foreign students, just like local students, will be prepared for the internship during the theoretical courses.

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.

During the reporting period, the topics of students' bachelor's theses in the study programme Environmental and Renewable Energy Resources Management and Engineering were mostly related to environmental technologies.

A large part of the final theses developed by students are feasible and related to the development or application of technical solutions to specific problem situations, for example:

- Iesalnieks, K. Impact of ventilation with heat recovery on energy efficiency in renovated apartment buildings.
- Kreināts, G. Modification of mineral extraction technology of SIA “Saldus meliorācija” - for sludge extraction in Lake Liepaja.
- Ķepals, R. Wave generator construction for the Kurzeme coast.

The work of students in the field of environmental management has often been related to the field of technology, for example:

- Sivačova, A. Opportunities for improving energy efficiency of buildings in Latvia.
- Kalniņa, M. Biocomposting module for waste (tree leaf) processing in the park territory.
- Kundziņa, L. Development of a mobile application model to be used in environmental education for fifth to twelfth grade students.

A choice of the topic of the final theses was also one of the factors determining the choice of the specialization field of the new study programme “Environmental Innovation Technologies”.

The evaluations of the theses were mostly positive with a high proportion of the papers receiving a grade of 9/10 in the ten-point system, however, most of the theses have been in the range of 7 to 8

points.

A more detailed breakdown of ratings during the reporting period is as follows:

- 9/10 - 10 theses;
- 7/8 - 29 theses;
- 5/6 - 5 theses;
- 4 - 5 theses;

The topics of the students' work corresponds to the field of environment, current events in the labour market and the interests of companies of the Kurzeme region.

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 survey of students was conducted throughout the reporting period, at the end of each study year, covering students of all courses. The proportion of dissatisfied students increased significantly towards the end of the reporting period.

Evaluating the students' answers repeated several times, **students mentioned the following as negative aspects of the study process:**

- Material overlaps in some study courses.
- One lecturer often teaches several courses; thus it is not possible to get acquainted with specialists in the field (this also resonates with the problem of overlapping course content).
- Lack of teachers with a practical connection with the industry.
- Few guest lecturers.
- Too much theory.
- Lack of practical content courses and practical skills.

When evaluating the negative aspects mentioned in the student questionnaires, they have been taken into account in the development of the new programme "Environmental Innovation Technology":

- The diversity of lecturers has been increased to the extent possible.
- More industry professionals are attracted as teachers.
- The number of theoretical courses or the amount of their CRP has been reduced.
- The amount of practical study courses has been increased and diversified.

Students mentioned the following as strengths of the programme:

- Knowledgeable and highly professional teaching staff.
- Interesting and diverse study courses.
- Fewer students - more individual approach (this answer mostly appears at the end of the reporting period as the number of students decreases).

These strengths were also taken into account in the design of the new programme.

Graduate survey

Graduates are generally satisfied with the study programme, acquired theoretical and practical knowledge and evaluate the level of professional training as good. However, not all graduates

would recommend the programme to others. Those who gave a negative answer did not disclose the reasons.

In general, the responsiveness of graduates to the survey has been low. There is no known reason for this lack of responsiveness, as it is known from unofficial sources that several graduates work in a field related to the acquired profession, so this could not be explained by dissatisfaction and inability to find a job.

The fact that a large number of graduates of the study programme “Environmental and Renewable Energy Management and Engineering” would not recommend it to others was one of the influencing factors that determined the need to develop the new study programme “Environmental Innovation Technologies”.

Employers

Information about the offered education from the point of view of employers was obtained by regularly interviewing students' internship supervisors. Considering that students had chosen a variety of internships, employers have repeatedly noted that:

- Most students have good knowledge, but some have satisfactory knowledge.
- It is recommended to pay more attention to the application of theoretical knowledge in practice.

These recommendations have been taken into account in the new programme “Development of Environmental Innovation Technology” by attracting more professionals in the field as teaching staff and increasing the amount of practical knowledge, as well as paying special attention to the connection of theoretical and practical study courses.

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, the professional bachelor's study programme “Environmental and Renewable Energy Management and Engineering” participated in student mobility. Cooperation was formed with the Central Macedonia Institute of Technical Education (Greece), Matej Bel University (Slovakia) , Leiria Polytechnic Institute (Portugal) and South-Eastern Finland University of Applied Sciences (Finland).

See the table for detailed statistics and the dynamics of the number of students involved in mobility:

Study year	Number of students	Institution
2016/2017	2	Matej Bel University
2017/2018	3	Technological Educational Institute of Central Macedonia
2018/2019	1	Polytechnic of Leiria

2019/2020	1	Polytechnic of Leiria
2020/2021	1	South-Eastern Finland University of Applied Sciences

Students mostly go abroad to study. Interest in internships abroad has only appeared at the end of the reporting period. Before a student goes to any of the mobility activities, the possibilities of acquiring specific study courses or performing internship tasks in a foreign partner institution are identified. If the student goes for an internship, regardless of the location of the internship company (in Latvia or abroad), the internship tasks provided for in the internship descriptions of the study programme are performed. On the other hand, if the student goes on a study mobility, the student, together with the director of the study programme, initially evaluates the study offer, its acquisition opportunities and compliance with the study plan. When returning from studies abroad, the programme director performs the procedure of recognition / equivalence of the study courses in accordance with the LiepU and other regulatory documents.

Taking into account the successful experience of previous cooperation, further cooperation with the above-mentioned higher education institutions will be continued, as well as, as far as possible, new contacts will be established with other higher education institutions in accordance with the specifics of the new study programme “Environmental Innovation Technologies”.

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.

Study base

The implementation of the study programme “Environmental Innovation Technologies” will be ensured by the LiepU Faculty of Science and Engineering (FSE), operating in accordance with the document “Regulation on the Faculty” (approved at the LiepU Senate Meeting on 26 May 2014, Minutes No. 11) and the LiepU strategic planning documents.

The work of the faculty is managed by the dean, methodologist and secretaries in cooperation with the directors of the study programmes and the heads of the study fields. The description of the tasks is given in Table 1.

Table 1

Description of the FSE units involved in the implementation of the study program

“Environmental Innovation Technologies”

Unit	Responsible person	Tasks in the implementation of the study programme

Dean's Office	Dean	In the management of the study process: organizes the preparation of licensing and accreditation documents, organizes the development of study plans, including the annual study plan, organizes the development and improvement of appropriate study courses, coordinates the content and scope of study courses, supervises the preparation of study programme self-evaluation reports, evaluates applications for final theses in cooperation with the programme directors, supervises the organization of final examinations and graduations, supervises internship organization and evaluation process, follows the course of classes at the faculty, controls the fulfilment of students' academic obligations. In staff management: plans and coordinates the workload of academic staff; organizes the conclusion of employment agreements with teaching staff; organizes evaluation of teaching staff and summarizes the results of the survey, organizes the meetings of the teaching staff at least once a month; informs the teaching staff about the processes and activities taking place at the university. In the management of science: supervises the improvement of the scientific qualification of the teaching staff, in cooperation with the heads of the study fields supervises the scientific research activity of the teaching staff; supervises and coordinates the participation of the faculty in scientific and applied research projects; coordinates the planning and preparation of scientific conferences and seminars; coordinates the planning of scientific and educational publications, analyses the implementation of the plan, supervises and coordinates popular scientific activities, cooperates with the parents of academic groups. Document regulating the tasks: “Regulation on the Faculty”.
	Methodologist	Performs record-keeping of students in the study programme, preparation of amendments to the agreements, orders, etc. In cooperation with the director of the study programme, handles the licensing and accreditation documents of the study programmes. Maintains communication with students, lecturers, employees and provides consultations on organizational issues of the study process. Cooperates with other structural units of the LiepU, etc.
	Secretary	Informatively cooperates with students and lecturers, including guest lecturers. Coordinates internships: prepares internship schedules, contracts, enters internship places into the database, compiles and stores internship documentation. Compiles study programme licensing and accreditation documents. Executes annual and standard study plans, prepares documents for teaching staff. Processes and stores study papers and final thesis topics and other submissions. Maintains communication with students, lecturers, employees and provides consultations on organizational issues of the study process. Supervises the budget of the faculty, attendance of foreign students; participates in the organization of faculty events, etc. Cooperates with other structural units of the LiepU, etc.

The Faculty Council	President	The Faculty Council is the highest decision-making body of the faculty, reviewing and deciding on the organization of the studies of the faculty, academic and scientific work, as well as economic, financial and other issues. Regulatory document: “Regulation on the Faculty”.
Study field	Head of the field	The head of the study field supervises the research-based studies of the academic and professional study programmes of one educational thematic group, incl. development, accreditation and implementation. The head of the study field works under the supervision of the dean. In the management of science: supervises and coordinates the improvement of the scientific qualification of the teaching staff of the relevant field, supervises the scientific research activities of the teaching staff; coordinates the planning and preparation of scientific conferences and seminars; analyses the implementation of the plan, supervises and coordinates the scientific activity of students in the relevant field, ensures informing students about the organizational issues of the study process, cooperates with the parents of academic groups. Document regulating the tasks: “Regulation on the heads of study fields and study programme directors”.
Study Programme	Programme Director	Prepares the study programme for accreditation. Coordinates the work of the academic staff and guest lecturers involved in the implementation of the study program, discusses the study content of the programme and issues of the programme implementation in the faculty meetings, deals with other issues of the study organization. Document regulating the tasks: “Regulation on the heads of study fields and study programme directors”.
Institute of Natural Sciences and Innovative Technologies	Director	Provides an opportunity for teachers and students to carry out scientific research activities.

The circulation of information at the faculty is ensured by the dean's office. Meetings of the Faculty Council and teaching staff takes place once a month. The topicality and development issues of the study fields under the supervision of the faculty are discussed in the work of the Faculty Council meetings, in the general meetings of the faculty, in the working groups of the teaching staff of the study field. Institute of Science and Innovative Technologies (ISIT) operates within the FSE, several of its study fields being related to the issues covered in the study programme “Environmental Innovation Technologies”, such as wave energy use and coastal erosion mitigation studies, material recycling, etc.

In addition to the faculty, several structural units of the LiepU and their employees are involved in the implementation of study programmes (Table 2).

Table 2

Description of the LiepU departments involved in the implementation of the study program “Environmental Innovation Technologies”

Department	Responsible person	Tasks in the implementation of the study programme
Study Department	Head of Study Department	Provides input of study programmes and plans in the Latvian Higher Education Institutions Information System (LHEIIS) and prepares diplomas for students in the study programme.
Library	Library Director	Provides students and lecturers with study literature and subscribed databases, as well as an access to databases created by the library (Database of Academic Staff Publications, Database of Doctoral Theses, Database of Final Theses). Provides remote access to the Liepaja University Library catalogue on various devices, including smartphones (possibility to connect to the library from anywhere, follow the issue of books, delivery deadlines, request an extension, as well as reserve the necessary literature or join the line for it). Provides opportunities for independent work in the open access reading room and electronic resources reading room. Ensures the reproduction and binding of study materials.
Foreign Affairs Department	Head Specialist in the international cooperation affairs	Coordinates and organizes the conclusion of the LiepU international agreements with foreign universities. Coordinates and organizes the LiepU involvement in Erasmus + projects. Develops the necessary documentation for the admission of exchange students and academic staff to the LiepU, as well as for the mobility of LiepU students and faculty / staff abroad. Organizes attraction of foreigners for full-time studies at the LiepU. Cooperates with the Admission Commission and faculties in the process of admission and study of foreigners.
Information Technology Centre	Head	Ensures the study process with the necessary computer equipment, provides an opportunity to work with open access computers, performs technical maintenance of the distance learning process, etc. Responsible for software. Provides technical support in the filming of lectures and digitization of lecture materials.
Public Relations Department	Head Public Relations Specialist	Develops and implements the LiepU Marketing Plan; informs the public and LiepU staff about the topicalities of the LiepU, the decisions being prepared and adopted regarding various types of activities.

To ensure the study process, the Faculty of Science and Engineering (FSE) supervises 4 laboratories (Physics Laboratory, Prototyping Laboratory, Computer Networks and Computer Systems Laboratory, Paper Recycling Laboratory), 4 thematic rooms (Computer Science and Computer Control Room, Nature Embassy, Chemistry Room, Environmental Biology Room), the Circular Economics Centre and 7 computer classes supervised by support staff: IT centre and laboratory assistants (description is given in Table 3)

Table 3

Description of the study support staff involved in the implementation of the study program "Environmental Innovation Technologies"

Teaching support staff		Tasks in the implementation of the study programme
FSE Support Staff, Physics Laboratory, Prototyping Laboratory, Computer Network and Computer Systems Laboratory, Computer Science and Computer Control Room	Laboratory assistant	Provides students with the equipment necessary for physics and information technology practice and laboratory work.
FSE support staff, Embassy of Nature, Chemistry Room, Environmental Biology Room, Paper Recycling Laboratory	Laboratory assistant	Provides students with the necessary equipment for environmental chemistry, environmental biology natural sciences and ecotechnology practice and laboratory work.

Informative and methodological base

Information about study programmes, detailed information about admission rules, admission procedures and necessary documents are available on the LiepU website: https://apply.liepu.lv/

The sections of the website about faculties indicate study programmes and admission criteria. Information is also available to potential students from abroad: https://www.liepu.lv/en/120/faculty-of-science-and-engineering.

All LiepU normative documents related to studies are also available on the LiepU website: "Regulations on Mutual Duties and Rights of Teachers and Students"; "Regulations on the Competition for Study Places Financed from the State Budget"; "Regulations for Awarding Scholarships", etc. https://www.liepu.lv/lv/654/dokumenti All necessary application forms are available at https://www.liepu.lv/lv/674/iesniegumu-veidlapas, rules for drawing up study papers at https : //www.liepu.lv/lv/293/studiju-darbu-rakstisana and information about the study procedure and current information.

A register of study courses has been created, where students can become acquainted with the descriptions of study courses and evaluation requirements: https://luis.lu.lv/pls/lp/kursi.startup?l=1.

In the study process, the teaching staff uses the Moodle e-study system https://estudijas.liepu.lv, where study materials, tests, submission of homework, etc. are placed. Moodle e-study system is integrated with Latvian Higher Education Institutions Information System (LHEIIS). Each student can follow their study progress using their username and password in this system.

The LiepU Library provides access to the literature required in the study process. The library collection includes publications in various fields of science, including natural sciences, engineering sciences and environmental sciences, corresponding to the study programme “Environmental Innovation Technologies”. The collection of the library is, as far as possible, regularly updated, taking into account the recommendations of the study programme directors. Every lecturer (both elected, non-elected and guest lecturer) has the opportunity to order the literature necessary for the implementation of the study course by using the QMS procedure “Completion of the A-10-II Library Collection”. It is also possible to use interlibrary subscription services.

The library subscribes to the following databases: EBSCO, ScienceDirect, SCOPUS, Web of Science, Cambridge Journals Online, Letonika.

All information about the library's offer is available in the “Library” section of the Liepaja University website:

- Current information about the news: https://www.liepu.lv/lv/137/aktualitates;
- Subscription (reader registration, signing of questionnaires, issuing / receiving printed materials, including by using the SelfCheck equipment):

https://www.liepu.lv/lv/202/kontaktinformacija-un-darba-laiki;

- Reading room (electronic catalogues, references, books, periodicals, copying):

https://alise.liepu.lv/Alise/lv/home.aspx;

- Electronic resources reading room - open access computer class (electronic catalogues, internet, databases): https://www.liepu.lv/lv/1168/abonetas-datubazes ;

Financial base

The financial resources for the provision of the study process at the Liepāja University are mainly composed of:

- transfers of the basic State budget for higher education;
- funds received from the paid services provided by LiepU, incl. tuition fee revenue;
- deductions from the projects to cover centralized expenses of LiepU;
- donations and gifts;
- revenue assigned for special purposes;
- other revenue of own funds;
- balance of funds in the basic budget bank account from the previous calendar year.

The study funding from the State budget is granted every calendar year in accordance with the Cabinet Regulation No. 994 of 12.12.2006. “Procedures for Financing Higher Education Institutions and Colleges from the State Budget” and an agreement between the Ministry of Education and Science and the University of Liepaja on the training of a certain number of specialists.

Tuition fees are covered from the funds of natural and / or legal persons. The amount of tuition fees, discounts and payment procedures for each study year are determined and approved by the LiepU Senate.

The LiepU's financial resources are directed to cover the costs of all study fields and study programmes implemented at the university. Cash expenditure planning takes place in accordance with the LiepU normative documents on basic budget planning, determining the number of staff rates for each subsequent academic year in accordance with the Cabinet Regulation No. 445 of 05.07.2016 “Regulations on Teachers' Remuneration” and the LiepU normative documents (a number of staff rates is reviewed and specified taking into account the results of admission), as well as the remuneration plan for each budget year. The calculation of the determined percentage of the financial resources of the faculties, allocated from the total financial resources of the study areas under the supervision of the respective faculty for the planned calendar year, is calculated in accordance with the “Procedure for Allocation and Use of Financial Resources of the Faculties” approved by the Order No. 10-v of 02.02.2016 of the Acting Rector of the LiepU).

Scientific Activity Development Fund is established in the basic budget of the LiepU every calendar year. Its distribution to faculties / institutes is decided by the Science Council.

Funding for the purchase of literature, subscriptions to periodicals and electronic databases is included in the total basic budget of the LiepU. Study and research resources in the LiepU library are provided for all study field programmes.

Depending on the development priorities, the higher education establishment continuously takes care of human resources development, maintenance and renewal of material and technical base (incl. promotion of advertising and study programmes, maintenance and repair of premises, replacement of inventory and fixed assets, continuous renewal, maintenance and development of computer equipment and IT software and other costs).

In order to support and promote the activities of students' self-government, every calendar year, the LiepU and the LiepU Student’s Council renew the cooperation agreement and determine the allocated funding from the LiepU basic budget, which is not less than one hundredth of the annual budget, according to Article 53 of the Law on Higher Education Institutions.

The LiepU total annual budget consists of a cash flow budget consisting of incoming and outgoing funds of the university. It is planned for each calendar year and approved by the Senate. Incoming and outgoing funds in the budget are divided into the main types of costs. The analysis of the funding provision takes place every year and is approved by the Senate. The LiepU financial indicators show a stable financial situation.

Calculation of revenue and costs

Revenue and costs are calculated for the 1st year of the 2021/2022 academic year for the entire study period - 4 years. Minimum number of students 10 students. Planned source of financing - study financing from the state budget and revenue from tuition fees.

The planned funding of the study programme in full-time studies for 2021 - 2025 is EUR 115,442 (excluding social security costs).

The base costs determined in 2020 (EUR 1,518.98 per study place) and the coefficient of the thematic area of education “Environmental Innovation Technologies” determined by the Ministry of Education and Science is taken into account in the calculations: 1.9, as well as the cost ratio in professional bachelor level study programmes: 1.00. The cost of one study place in 2020 is EUR 2,886.06.

Table 4

Distribution of the number of study places to be financed from the state budget for the

study programme “Environmental innovation technologies” for the 1st year of the 2021/2022 academic year (for the whole study period)

Study Programme	Number of study places in 2021	kmin 2020	k degree	Study place base in 2019, EUR	Scholarship for one study place per year, EUR	Pregnancy scholarship fund per study place per year, EUR	Sports, culture and service hotel costs per year, EUR	Study financing per annum, EUR	Stud. period	Stud. progr. financ., EUR
Environmental innovation technologies	10	1.9	1	1518.98	145.13	5.69	13.52	30,504.02	4	122,016.08

Estimated tuition fee for the 1st year of the academic year 2021/2022 for the study programme “Environmental Innovation Technologies” is EUR 2 170, for foreign students- EUR 2 200, approved by the LiepU Senate. The tuition fee is fixed for the entire study period. See the full-time costs of the study programme for 2021-2025 in Table 5.

Table 5

Planned costs for the study programme “Environmental Innovation Technologies”

For the 1st year of the 2021/2022 academic year (for the entire study period)

Index name	**Amount, EUR**
Remuneration for teaching staff, including:	**35,938**
professors	5,625
docents	13,786
lecturers	12,445
assistants	4,082
Other costs (incl. remuneration for other LiepU staff, public utility costs and other costs related to the maintenance of buildings, premises, communication costs, subscriptions to books, magazines and databases, etc.)	**79,504**
Total costs	**115,442**

The financing and costs of the study programme have been calculated taking into account the Cabinet Regulation No. 994 of 12 December 2006 “Procedures for Financing Higher Education Institutions and Colleges from the State Budget”.

Material and technical base

LiepU material and technical base is available to both students and lecturers. As the study programme “Environmental Innovation Technologies” is interdisciplinary, it is necessary to use the material and technical support of all faculties in the study process for the study programmes implemented by LiepU:

- computers - 320 (of which 80 computers not older than 3 years);
- video projectors - 23;
- interactive whiteboards - 7;
- copiers - 6;

Students in each of the study buildings have access to a free-access wireless network (a total of 36 wireless network access points are installed). A workstation virtualization solution has been implemented and three computer classes are equipped with workstations for clients (a total of 63 workstations). Students create their own virtual computer, which is not attached to the workplace. This solution ensures the mobility and security of the study process. Modern network hardware has been installed, providing virtualization of the computer network, and a CAMPUS computer network connection has been established between all study buildings. A cooperation agreement has been concluded with Microsoft on the lease of MS Office and MS Windows software licenses, which teachers can use both in the implementation of the teaching process and in the production of teaching materials. Within the framework of this cooperation agreement, both the LiepU lecturers and students have access to the MS Office 365, 1Tb file archive in the cloud, etc. at no extra charge.

FSE has a computer control room with 13 workplaces (12 for students and 1 for lecturers). The laboratory equipment for each workplace includes 37 sets of digital and analog sensors, analog-to-digital converters, servomotors, stepper motors, layout boards, connecting wiring sets, LCD and LED displays. The laboratory has 20 Arduino Uno controllers at its disposal for the acquisition of data acquisition bases, which are also intended to be used for the study programme “Environmental Innovation Technologies” in the study courses “Electronics”, “Environmental Measurements and Sensors” and “Prototyping”, as well as for the development of a bachelor's thesis, as necessary.

Detailed information on the material and technical base is summarized in Table 6. The material and technical base is purposefully developed on the basis of the specifics and needs of the study programmes implemented at the faculty. In general, it can be divided into several blocks:

1. Equipment and facilities for biology and chemistry study course practice.
2. Measuring instruments for environmental quality and energy efficiency assessment.
3. Equipment for computer science and electronics study course practice.
4. Prototyping equipment.
5. Equipment required for paper recycling research and study practice.

Table 6

Material base necessary for the implementation of the study programme “Environmental Innovation Technology”

No.	Title	Description
1.	Chemistry room	Memmert Thermostat AL606 Biological oxygen demand monitoring system AL 654 Controlled thermostatic incubator Autoclave ViBRA Analytical balance CAT MCS 66 Magnetic stirrers with heating and its control M&S membrane filtration system CROWCON CO, SO_2, NO_2 meter Luxometer Portable noise (volume) meter Portable electromagnetic field meter (µT, V/m) Portable water pollution meter (pH, temperature, EC) Portable volatile organic compound meter (HCHO, tVOC) Fume cabinet Laboratory glassware sets Infrared camera with recording function
2.	Environmental biology room	VWR INCU-Line IL 53 Microbiological incubator Carl Zeiss PRIMOSTAR Microscopes and stereo microscope
3.	Computer science and computer control room	20 Arduino Uno controllers 37 sensor sets Maketplates

No.	Title	Description
4.	Physics laboratory	Cobra3 pendulum oscillation experimental device with interface Helical spring oscillation device Newton's Second Law and collision experiment device with Cobra3 interface Centrifugal force experimental device with Cobra3 interface Connected pendulum experimental apparatus Wave propagation and wave generation equipment Apparatus for determining the surface tension by the ring tear-off method String oscillation research equipment Airborne sound propagation research device with Cobra3 interface Lens Law and optical parameters study kit Fresnel equation - reflection theory set Photometric Distance Law device with Cobra3 interface Dispersion research experiment set Thermal expansion research kit for liquids and solids Ideal Gas Law apparatus with Cobra3 interface Joule-Thomson effect apparatus Thermal and electrical conductivity research equipment for metals Heat capacity research equipment for metals Stirling engine version with Cobra3 interface Ohm's Law machine with function generator and Cobra3 interface Semiconductor thermogenerator Electrolysis unit with function generator and Cobra3 interface Half - life and radioactivity research equipment Gamma and beta ray absorption device with Cobra3 interface X-ray spectroscopy research equipment - energy detector 3D printers (thermoplastics and photopolymers)
5.	Prototyping laboratory	MIG200M semi-automatic welding machine CNC equipment Stationary drilling rig
6.	Paper recycling laboratory	Sieves, different sizes 2 mixers 4 buckets 3 boilers 4 movable worktops for table Paper shredder Shredder for plants and other raw materials 2 presses Laboratory scales

The mentioned equipment (Table 6) is basically intended to be used in the following study courses:

- Chemistry room - “Environmental Chemistry” and “Biology and Biochemistry”;
- Physics Laboratory - “Physics for Environmental Engineering”, “Fundamentals of Mechanics” and “Materials and Recycling I”;
- Computer science and computer control room - “Basics of Programming”, “Electronics”, “Environmental Measurements and Sensors”, “Prototyping”;
- Prototyping laboratory - “Prototyping”;
- Paper Recycling Laboratory - “Materials and Recycling II”;
- other study courses as needed

All mentioned equipment is also available for the development of study papers and bachelor's theses in accordance with the research topics and needs.

In addition to the equipment at the faculty's disposal, students also have access to ISIT equipment (Table 7), especially for study and bachelor's thesis development.

Table 7

ISIT material base necessary for the implementation of the study programme “Environmental Innovation Technology”

No.	Title	Description
1.	**Smart Materials Department**	• **Spraying equipment:** - high vacuum chamber - possible to heat the tray up to 600° C - possible to control the thickness of the applied layer and the application speed - three different evaporators: o magnetron - electron flow with 6 material sockets o resistive evaporator o evaporator for organic substances - possible to process the sample in a vacuum chamber with a laser - possible to work with different masks - manufacturer - Angström, Canada • **CVD - chemical vapor deposition equipment:** - intended for the production of graphene by the gas deposition method - possible to heat the sample up to 1700 °C - possible to accurately dose gases: o H_2 - hydrogen o CH_4 – methane o Ar - argon - an inert gas, serves as a carrier - assembled in Latvia, Norberthem Furnace, Germany • **Pulsed laser:** - energy of one pulse - 100 mJ (millijoules) - wavelength from 680 to 1064 µm (micrometers) • **Electron microscope:** - increase to 30,000 X
2.	**Collectors, generators, bioreactor**	• **Solar collector** - maximum heat output 1 kW • **Solar photovoltaic generator:** - 6 panels, 36 V each - total maximum power 2 kW - voltage, frequency stabilizer (230 V, 50 Hz) • **Bioreactor:** - volume 2.5 m^3 - temperature controlled automatically, range (10°C - 70°C) - automatic pH control - 2 peristaltic pumps for acid, alkali supply - mixing system with automatic control - methane content and gas volume control system with data acquisition function

No.	Title	Description
3.	**Marine Resources Research Division**	• **Wave energy pool**

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.

Since the study programme “Environmental and Renewable Energy Management and Engineering” with the professional bachelor's degree in environmental sciences and the professional qualification of an environmental management specialist or environmental engineer in the reporting period has been replaced by the study programme “Environmental Innovation Technologies” with only one professional bachelor's degree in environmental engineering and only one professional qualification - environmental engineer, the composition of lecturers has been changed in accordance with the specifics of the new programme. The specific lecturers, particularly in the courses related to the specialty, are mostly the same as those who participated in the implementation of the programme “Environmental and Renewable Energy Resources Management and Engineering”.

Taking into account the specifics of the new programme and the recommendations of students and employers on attracting industry professionals and increasing the number of practical content courses, several new lecturers have been attracted, for example: L. Lapiņa (landfill specialist of SIA “Liepājas RAS”), A. Bilerts (environmental monitoring specialist of SIA “Latvijas Vides, ģeoloģijas un meteoroloģijas centrs”), J. Mozžerikovs (mechanical engineer of SIA “Caljan”), A. Bērziņa (territory planner of the Liepaja City Construction Board), E. Bērziņš (specialist of SIA “Latvijas mērnieks”).

Information about the teaching staff involved in the study programme can be found in section II - Description of the study field (3. Resources and provision of the study field).

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.

Information about the teaching staff involved in the study programme can be found in section II - Description of the study field (3. Resources and provision of the study field). All teaching staff involved in the study programme comply with the conditions of the study programme implementation and the requirements of the laws and regulations (for example, the Law on Higher Education Institutions).

The following criteria were set for the selection of the teaching staff - doctoral or master's degree in the field to which the taught study course and / or work experience in the specific field corresponds. For the implementation of practical study courses, preference was given to teaching staff with practical work experience in the field covered by the study course. However, professionals in the field are not always interested in working as teachers on a permanent basis, both due their principal activity and also low pay. Therefore, the number of involved teaching staff-practitioners is relatively small.

All lecturers involved in the implementation of the study programme are directly or indirectly related to any of the environmental sciences, engineering sciences or computer science and informatics (if the taught course is related to information technologies), except for the lecturers involved in teaching general education courses.

A total of 25 members of the teaching staff are involved in the implementation of the study programme: 2 professors, 6 docents, 11 lecturers, 3 assistants, 3 guest lecturers. Of these, 14 are elected at the LiepU. 8 lecturers have a doctoral degree, while 5 are studying in a doctoral programme and plan to obtain a doctoral degree in the near future.

The study programme is implemented in both Latvian and English. All participating teachers have an English language level of at least B2 according to self-assessment using the Common European Framework of Reference for Languages (CEFR). A large portion of the teaching staff also has practical experience of working with foreign students within the framework of other study programmes implemented at the faculty.

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.

The link between research and study processes is ensured by the fact that most of the teaching staff, who are often also the scientific supervisors of study projects and final theses, work in one of the LiepU research institutes. Thus, the study projects and final theses often coincide with one of the research fields implemented by the LiepU and are part of a research project, for example, the wave generator prototype developed within the framework of the bachelor's thesis by R.Ķepals was used in ISIT wave energy research, while as a result of the study project by S.Ozoliņa, a submersible water flow generator, which was presented at the international exhibition of inventors and innovations “Minox 2020”, was created by using the findings of the research conducted by ISIT.

The research topics of the environmental field lecturers are in line with one of the study courses taught by them, which ensures that the findings in the research process will be integrated into the content of lectures and practical work. Examples of the academic staff involvement in scientific research resulting in study process improvement are the floating drone developed by DITI which technical solutions are planned to be used in the study courses “Electronics” and “Environmental Measurements and Sensors”. Also findings of the research on *Furcellaria* algai in biogas production will be used in study courses like “Biotechnology”, etc.

More information on the topicalities and processes of the research activity can be found in the section II - Description of the study field (4. Scientific research and artistic creation).

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 teaching staff employed in the study programme cooperates both in the development and implementation of joint research and projects within the framework of the LiepU scientific institutes, as well as in the development of the content of joint study courses and exchange of information on current events in the field and study process. The exchange of information is ensured by regular meetings of lecturers in the meetings organized by the faculty and meetings within the framework of research activities in scientific institutes.

25 lecturers will be involved in the implementation of the study programme “Environmental Innovation Technologies”. As at the time of submitting this report students are not yet enrolled in this programme, the ratio of students to teaching staff can be described by the previous EREME program where in the 2020/2021 academic year, it was 30 teachers per 18 students.

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)		
Statistics on the students over the reporting period	IV.1.2.A_Statiscal_data_on students.pdf	IV.1.2.A_Statistika_par_studējošiem_VIT.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	IV.2.5.A_Correspondence_standard_EIT.pdf	IV.2.5.A_Atbilstība_standartam_VIT.pdf
Compliance of the qualification to be acquired upon completion of the study programme with the professional standard (if applicable)	IV.2.5.B_Correpondence_vocational_standart_Environmental_Engineer.pdf	IV.2.5.B_Atbilstiba_profesijas_standartam_VIT.pdf
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	IV.2.5.D_mapping.pdf	IV.2.5.D_ViT Kartejums.pdf
Curriculum of the study programme (for each type and form of the implementation of the study programme)	IV.2.5.E_Study_programme_plan_EIT.pdf	IV.2.5.E_Studiju programmas plans_VIT.pdf
Descriptions of the study courses/ modules	IV.2.5.F_Descr_of_study_courses.pdf	IV.2.5.F_Studiju_kursu_apraksti.pdf
Description of the Study Direction - Other mandatory attachments		
Sample of the diploma to be issued for the acquisition of the study programme.	IV.5.A_Diploma_diploma_supplement_sample_EIT.pdf	IV.5.A_Diploma_diploma pielikuma_paraugi_VIT.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	IV.5.B_Agreement_LLU_transfer_of_stdents_The translation of the work.pdf	IV.5.B_Vienosanas_LLU_studentu_parnemsana.pdf
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	IV.5.C_Attestation_Envir_innov_techn.pdf	IV.5.C_Apliecinajums_Vides_inov_tehn_zaud.pdf
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.	IV.5.D_Certification_of_the_English_language_EIT.pdf	IV.5.D_Apliecinajums_anglu_val_VIT.pdf
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	IV.5.E_Study_agreements_Envir_innov_techn.pdf	IV.5.E_Studiju_liguma_paraugi_Vides_inov_tehn.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.		