



CENTRE FOR QUALITY ASSESSMENT IN HIGHER EDUCATION

EVALUATION REPORT
STUDY FIELD of BIOLOGY
at Klaipėda University

Expert panel:

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6. Dr. Marcel Tarbier, *students' representative*.

Evaluation coordinator – Ms Natalija Bogdanova

Report language – English

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Study Field Data*

Title of the study programme	Biology and Marine Biotechnology
State code	6121DX014
Type of studies	University
Cycle of studies	First
Mode of study and duration (in years)	Full time, 3 years
Credit volume	180 ECTS
Qualification degree and (or) professional qualification	Bachelor of Life Sciences
Language of instruction	Lithuanian
Minimum education required	Secondary
Registration date of the study programme	19 May 1997

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

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I. INTRODUCTION

1.1. BACKGROUND OF THE EVALUATION PROCESS

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

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

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

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

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

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

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

1.2. EXPERT PANEL

The expert panel was assigned according to the Experts Selection Procedure (hereinafter referred to as the Procedure) as approved by the Director of Centre for Quality Assessment in Higher Education on 31 December 2019 [Order No. V-149](#). The site visit to the HEI was conducted by the panel on 12 November, 2021.

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

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

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

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

1.3. GENERAL INFORMATION

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

No.	Name of the document
1.	A list of additional evidence and factual questions (10 documents)
2.	Descriptors of Courses (28 courses)

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

Klaipeda University (KU) established in 1991 is a multidisciplinary, national and Baltic Centre of Marine Science and culture centre of the Western Lithuania. KU has three faculties: Social and Humanities, Marine Technology and Natural Sciences, Health Sciences and research institutes History and Archaeology of the Baltic Region and Marine Research Institute (MRI). KU faculties have 17 departments, 8 research and study centres, 2 museums and more than 60 laboratories. About 2700 students from Lithuania and foreign countries study in full-time and part-time studies of programs at all study levels. KU carries out over 60 international and national research projects every year, has scientific and academic partners in European and world countries, participates in international funds, programs and networks.

The Marine Research Institute of Klaipėda University (KU MRI) unites leading experts and state-of-the-art facilities devoted for marine research, technology development and innovation. According to KU plan of activity optimization measures for 2018–2019, all first and second cycle life science studies were transferred from the Faculty of Marine Technology and Natural Sciences to Marine Research Institute. The study program Biology has been updated and the title changed to Biology and Marine Biotechnology. The Bachelor study program is unique, focused on blue biotechnology which is related to the use of aquatic organisms, their products and functions in biotechnological applications. The wide spectra of research groups at KU MRI cover Coastal and Marine Management, Modelling, Environmental Remote Sensing and Water Quality, Waterborne Transport and Air Pollution, Modern Engineering Systems, Biological Invasions and Environmental Genetics, Benthic Habitat Ecology, Plankton, Aquatic Biogeochemistry and Ecosystem Functioning, Aquatic Resources, Fisheries and Aquaculture and others. Teaching staff with 18 permanent lecturers and 6 from other scientific institutions has good teaching experience and they are all involved in diverse research projects. Currently 22 research and 6 applied projects offer opportunities for students to be involved in field studies, collect samples for research and work on their bachelor thesis. International cooperation gives opportunity for student and staff exchange through Erasmus+, Horizon and EU-Conexus programs.

II. GENERAL ASSESSMENT

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

Study field and cycle assessment in points by evaluation areas

No.	Evaluation Area	Evaluation of an Area in points*
1.	Intended and achieved learning outcomes and curriculum	2
2.	Links between science (art) and studies	5
3.	Student admission and support	4
4.	Teaching and learning, student performance and graduate employment	3
5.	Teaching staff	2
6.	Learning facilities and resources	4
7.	Study quality management and public information	2
	Total:	22

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

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

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

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

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

III. STUDY FIELD ANALYSIS

3.1. INTENDED AND ACHIEVED LEARNING OUTCOMES AND CURRICULUM

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

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

(1) Factual situation

The SER provides a detailed and clear evaluation of the aims and outcomes of the *Biology and Marine Biotechnology* study programme. The primary goal of this study programme is to meet the demands of the modern labour market and increase the availability of highly competent professionals in the blue bioeconomy, particularly aquaculture and marine biotechnology. However, very few graduates actually work in this field. The SER notes that the orientation of KU's Bachelor's Degree in *Biology and Marine Biotechnology* towards blue biotechnology is linked to the strategic directions of Klaipėda's economic development and to one of KU's strategic directions ("Sustainable management of marine resources through the development of aquaculture and blue biotechnology"). The SER also refers to the importance of developing key competences for the bioeconomy sector, which are lacking in Lithuania and the whole Baltic Sea region. Thus, the SER underlines that the KU *Biology and Marine Biotechnology* programme is tailored to the global, national and regional development trends and potential of the Baltic Sea coastal region, i.e. the increasing demand for the innovative use of aquatic bioresources in biotechnological applications and the blue bioeconomy.

(2) Expert judgement/indicator analysis

The panel judges that the aims and outcomes of the *Biology and Marine Biotechnology* are generally in line with the needs of society and the labour market. This judgement is based on the positive opinions of alumni and social partners during the site visit. Alumni confirm that the programme prepared them well for the labour market, and employers confirm that the programme provided graduates with relevant theoretical and practical skills. Several staff members at the site visit pointed to their personal experiences in institutions that are potential employers for their graduates (e.g., NGOs, museums), demonstrating an awareness of labour market needs. The panel concluded that there are strong links between academic staff and employers and that the study programme benefits from this.

However, some social partners pointed out that students lack awareness of their job opportunities after graduation and that the study programme could benefit more from providing its students with specific competences related to biotechnology and bioeconomy issues.

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

(1) Factual situation

The main mission of KU is to provide high quality study of biology and marine biotechnology based on professional practice, applied research and experimental development and to create conditions for lifelong learning. Special attention is paid to the development of competences in the field of blue biotechnology and bioeconomy, providing students with classical and modern knowledge that will enable them to orient themselves in the modern labour market (e.g. by integrating practical biological, ecological and environmental knowledge in the innovative use of aquatic biological resources in marine biotechnology, aquaculture and blue technology). The important mission, objectives of activities and strategy of KU are set out in "Klaipėda 2030: Economic Development Strategy and Action Plan", which is also included in the action plan of the specialization strategy of the Klaipėda region. These documents refer to the vision and directions of the development of the Klaipėda region until 2030, taking into account the demographic challenges as well as the challenges of the lack of key competences for the bioeconomy sector and the ongoing reform of higher education. Special attention within the mission, objectives of activities and strategy of KU is given to maritime economy, blue bioeconomy, sustainable tourism and advanced industry.

(2) Expert judgement/indicator analysis

The panel concludes that the aims and outcomes of the *Biology and Marine Biotechnology* study programme are consistent with KU's major mission, objectives, and strategy. The SER finds that the programme's goal and outcomes are consistent with the strategic documents. Further clarification on this was provided in the senior management meeting during the site visit, where meeting participants indicated that they have ongoing collaboration with local (national) and international experts/organisations in the bioeconomy and biotechnology sector(s). Discussions with staff, students and social partners provided solid evidence that the focus of the *Biology and Marine Biotechnology* programme is on providing comprehensive practical, experimental, laboratory and applied research training to students (from first year onwards), which is recognised as highly valuable by members of the local (national) labour market. Regarding the goal of "creating conditions for lifelong learning", SER gives some examples (i.e. learning outcomes are focused on the acquisition of basic knowledge and skills and the development of a competent, motivated and lifelong learner). This goal was also evident from students who went in a different direction after graduation and acquired the skills needed to do so on their own without difficulty.

Furthermore, during the visit, senior staff confirmed that KU offers various electives/modules and different opportunities tailored to students' personal career plans. When interviewed during the site visit, the staff responsible for compiling SER indicated that one of the main challenges in compiling the report was contacting past students and collecting data from recent graduates. Therefore, it would be beneficial to build an alumni base/network to more easily overcome such challenges in the future. In addition, KU staff indicated that they would

like to develop an effective strategy to maintain the quality of the programme, which they consider one of their greatest strengths. The panel concluded that the programme would certainly benefit from this future mission.

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

(1) Factual situation

The study programme in *Biology and Marine Biotechnology* is mainly based on the following legal documents: 1) The Law on Science and Studies of the Republic of Lithuania, 2) General requirements for study implementation, 3) Description of study cycles, 4) Regulation of the study field of biology, and 5) KU resolution on study regulations. The structure of KU was reorganised and optimised in the course of the ongoing higher education reform (from 2018-2019) to take into account the current demographic and labour market trends in Lithuania. As part of the reorganisation, all first and second cycle study programmes in Life Sciences were transferred from the Faculty of Marine Technology and Natural Sciences to Marine Research Institute. The principles for determining study credits at Klaipėda University are in line with the European Credit Transfer and Accumulation System (ECTS), which includes teaching hours and independent work of students in study subjects of different scope. The SER states that the study subjects will be reviewed every 3 years or more often (if necessary), depending on comments/feedback from lecturers, students or needs expressed by social partners. In addition, the programmes of study and subjects of study are reviewed every year in October/November based on all relevant feedback collected during the year. The consistency of the study programme with the legal acts is supported by Annex 2 (a table linking the components of the study programme to the legal acts).

(2) Expert judgement/indicator analysis

The panel finds that the *Biology and Marine Biotechnology* programme at KU meets the appropriate legal requirements. The SER provides sources of foundational/supporting legal documents. Evidence to support the factual assertion is provided primarily in Annex 2 of SER with a clear and detailed presentation of the relevant legal parameters, programme indicators, and their compliance with the five relevant legal documents/requirements. Not less than 15 credits is appointed to final thesis (15 credits); not less than 120 credits of courses (modules) are in the field of study (151 credits); not more than 120 credits are appointed to studies specified by University or optional studies (47 credits, i.e., 9.4% - 17 credits - of general university studies, 10 credits of mathematics subjects, 8 credits of physics subjects, 12 credits of chemical subjects), and not less than 15 credits can be earned through practice (17 credits). As indicated by faculty and management during the site visit, the panel judges that the reorganization process of merging the Faculty of Marine Technology and Natural Sciences with the Marine Research Institute is still an ongoing process. However, as indicated by the staff, the transition is considered successful so far, as there have been no job losses, but rather a rather streamlined and optimizing restructuring of the work.

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

(1) Factual situation

The compatibility of field and cycle study programme objectives, learning outcomes, teaching/learning methods, and assessment methods is illustrated by Annex 1 (study programme plan), Annex 2 (a table linking study programme components to legal acts), and Tables 1.2. (Relationship between study subjects and study results) and 1.3. (Relationship between study results and the most commonly used study methods) of the SER. The SER identifies 24 study programme outcomes for *Biology and Marine Biotechnology* divided into 5 categories: 1) knowledge and its application, 2) ability to conduct research, 3) special skills, 4) social skills, and 5) personal skills. These programme outcomes are assigned to 4 groups of subjects (i.e. General subjects (consisting of 15 courses in the curriculum), Specialized subjects (consisting of 13 courses in the curriculum), Practice (consisting of 3 courses in the curriculum), Course work and final thesis). Most programme outcomes are achieved through courses related to hands-on instruction and laboratory work, while courses focused on specialised (i.e., biotech-focused) knowledge cover some specific programme outcomes. Achievement of each programme outcome is supported by a variety of study methods. In total, 26 study methods are used in the *Biology and Marine Biotechnology* programme (an average of 7 per study course). The most common are: traditional lecture (applied in 24 courses), literature analysis (20), group work (18), practical assignments (18), discussion (17), laboratory work (16), seminar (12). The results of the study programme are evaluated by 28 assessment methods, which are divided into 8 categories: 1) knowledge test, 2) laboratory and practical work and reporting, 3) oral presentations, 4) literature analysis, 5) problem solving and analysis, 6) reports, 7) group work, 8) course project and bachelor thesis. The most frequently used methods of assessing student learning outcomes are knowledge tests (90% of subjects), laboratory and practical work reports (73%), reports (47%), oral presentations (43%), while the less frequently used assessment methods are problem solving and analysis (23%), literature analysis (13%) and group work (13%).

(2) Expert judgement/indicator analysis

The aim of the *Biology and Marine Biotechnology* study programme is to prepare qualified, motivated, creatively thinking specialists in the interdisciplinary field of biology and marine biotechnology, who meet the requirements of the European Union and who know the basics of biological science and modern biological research methods and are able to apply their knowledge in the field of marine biotechnology.

The SER provides a detailed overview/analysis of study course groups, study programme results, study and assessment methods. In 2018-2019, as part of the state plan to optimise the university network, all first- and second-cycle life sciences programmes at KU were transferred from the Faculty of Marine Technology and Natural Sciences to Marine Research Institute. As part of the optimization process and in connection with the plan for economic

development of Klaipeda, the Baltic Sea region and Europe, the study programme *Biology* was updated (including its learning outcomes) and the title was changed to *Biology and Marine Biotechnology*. The panel finds that the programme modules, programme outcomes, study methods used, and methods of assessing student learning outcomes in the *Biology and Marine Biotechnology* programme are satisfactorily balanced. Although the qualification degree is granted in the field of Biology, and although most of the programme outcomes listed in Table 1.1. of the SER indicate that *Biology and Marine Biotechnology* is a study programme in the field of Biology, many courses cover learning outcomes related to study programmes in the study field of Technological Sciences (e.g., F04 Maritime Technology, F05 Biotechnology). Thus, the learning outcomes of *Biology and Marine Biotechnology* programme (especially those related to the category knowledge and its application) should be revised (i.e., supplemented with learning outcomes that emphasize knowledge of the Technological Sciences). Given the title and the content of the study programme, one would expect some learning outcomes to be related to the technological sciences. Based on the information gathered in SER and during the site visit, the panel members concluded that the title of the study programme (*Biology and Marine Biotechnology*) did not reflect the content. If the title of the programme indicates that the programme should train graduates in both biology and marine biotechnology, then all traditional (basic) and modern (emerging) topics in classical and modern biology and marine biotechnology should be covered by the curriculum/study plan/learning outcomes. On the other hand, if the current strategy is to be maintained, then the title of the programme should definitely be changed (i.e., Biology should definitely be excluded from the current title of the programme and the study field should be reconsidered).

The panel agree that 24 study programme outcomes are relatively evenly distributed across 4 groups of subjects – depending on the scope and nature of the subject. Achievement of the same outcome in different aspects by different courses (as shown in Table 1.2. of the SER) ensures successful achievement of learning outcomes and the overall study objective. In reviewing Table 1.3. of the SER, the panel members conclude that the achievement of each outcome is adequately supported by different study methods. However, the most commonly used teaching format, traditional lectures and literature analysis, could be replaced by increased use of some other modern teaching techniques (e.g. digitally-enhanced teaching, collaborative learning, flipped classroom, project-based learning). Literature teaching and learning sources could also be updated with some newer titles. The literature list for courses in (blue) (bio)technology is satisfactory, but it would be desirable to revise the literature listed as mandatory for some basic biology courses (e.g., Botany, Ecology, Physiology, Zoology, Microbiology), some of which use outdated literature (Botany even uses titles from 1984, Physiology from 1978, Zoology from 1981, and Microbiology from 1999). In the description of some courses (e.g., Environmental Chemistry, Environmental Physics) a rather extensive literature list is given, and it would be beneficial to summarize it in a few of the most important and recent titles. In addition, written examinations designed to test knowledge are, not necessary if there are already several other forms of examinations in the same module, such as oral presentations, reports and graded laboratory work. Thus, the implementation of the study methods is very good, but could be improved.

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

(1) Factual situation

The structure and content of the *Biology and Marine Biotechnology* degree programme are designed to achieve the intended learning outcomes. The course of study is arranged in a logical sequence. The first three semesters of the programme focus on basic biological/life science courses and basic physical and mathematical sciences. The last three semesters offer more specialised courses that include topics in marine biotechnology, aquaculture, and blue technology, as well as laboratory exercises and traineeship. Many courses include extensive laboratory exercises designed to develop practical skills and consolidate theoretical knowledge. Compulsory modules cover the main topics, some general skills (e.g. foreign language, philosophy, professional speech and expression) are covered by general university study subjects, while some further specialisation is offered through elective modules.

(2) Expert judgement/indicator analysis

The panel finds that the *Biology and Marine Biotechnology* programme at KU provides consistent development of student competencies. Annex 1 and additional evidence and factual information (course descriptions) provided by the staff responsible for writing SER provide a clear and comprehensive overview of the courses in the *Biology and Marine Biotechnology* programme. The content of the courses supports SER 's statement that the programme is focused on developing practical skills and enhancing theoretical knowledge and practical/laboratory skills.

However, given the title of the study programme, the panel believes that a greater focus on the "biology" portion of the degree (in addition to marine biology and biotechnology) is an area that should be improved within the *Biology and Marine Biotechnology* study programme (e.g., the addition of evolution to the required curriculum would cover some missing/general biology topics). If the title of the programme indicates that the programme is designed to train graduates in both biology and marine biotechnology, then all traditional (basic) and modern (emerging) topics in classical and modern biology and marine biotechnology (including evolutionary history, anatomy, physiology, and behaviour of various marine and non-marine organisms) should be included in the curriculum/study plan. On the other hand, as noted above, it would be beneficial to revise the learning outcomes of the *Biology and Marine Biotechnology* programme because many courses cover Technological Sciences learning outcomes (i.e., learning outcomes related to the category of knowledge and its application should be supplemented with learning outcomes that emphasise Technological Sciences knowledge).

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

(1) Factual situation

The possibilities for individualization of studies are regulated in the study regulations of KU. Students have the possibility to choose among the four offered general electives of the university studies (i.e., Professional Foreign Language 1 and 2, Philosophy, Professional Speech and Expression) and six special education electives (i.e., Biological Monitoring, Innovative Methods for Marine Research, Microorganisms Research Methods, Microorganisms Ecology, Geographic Information Systems, Marine Animals in Artificial Ecosystems), as provided in the study plan (Annex 1 of SER). In addition, students can individualize their studies according to their career/topic/specialization interests by choosing: 1) the location for Laboratory Practice and Internship, 2) the topics of the Course Project or Bachelor's Thesis, 3) one of the two international EU-Conexus specializations at undergraduate level: Blue Economy and Growth or Coastal Development and Sustainable Maritime Tourism, 4) part-time study at other universities through exchange programs (e.g. Erasmus), 5) voluntary internship or traineeship outside the study programme, 6) attendance of more subjects than specified in the study plan for an additional fee. Attendance at lectures/examinations and thesis defense can also be handled flexibly, depending on the reasons for irregular attendance. This option is regulated by the KU study regulations.

(2) Expert judgement/indicator analysis

The panel judges that the *Biology and Marine Biotechnology* programme at KU offers students clear opportunities to shape the structure of their studies according to their personal goals. Ten electives within the programme appear to provide students with good opportunities to achieve their personal learning goals. Descriptions of the electives are not found in SER or in the additional information provided retrospectively by the staff responsible for writing SER. For example, there is no indication of a clear distinction between elective courses (e.g., between Biological Monitoring and Innovative Methods for Marine Research or Microorganisms Research Methods and Microorganisms Ecology). However, judging from the input of alumni and social partners (employers) during the site visit, the electives seem to be well aligned with student demand and labour market requirements. According to some student participants in the on-site visit (mainly representatives of first-year students), the overall course content of the study programme meets students' personal learning objectives and there is no overlap of topics taught in different courses. Both student and faculty representatives at the site visit provided evidence that the teaching/course content is tailored ("micromanaged") to students' prior learning. Finally, students confirmed that they can successfully combine work and study if they wish to do so (mostly as weekend work), which is further evidence that this study programme allows students to realise a variety of personal interests.

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

(1) Factual situation

According to Annex 1 of the SER, the Bachelor's thesis in the *Biology and Marine Biotechnology* programme at KU is worth 15 ECTS and should be completed within a total of 400 hours of independent study. Students should follow the principles for writing and defending the thesis prescribed in the Description of General Requirements for Independent Written and Artistic Works of KU Students. Thesis topics may be proposed by: 1) teachers and researchers, i.e. prospective thesis supervisors (depending on the availability of their project and research activities), 2) social partners (depending on the topics relevant to them), 3) students (depending on their personal interests). This practise was followed before and during the current university reform of higher education, and Annex 3 provides the defended Bachelor's theses in 2018-2020 (theses that follow the objectives of the previous study program corresponding to the scope of the *Biology* study programme). The first Bachelor's Thesis within the Biology and Marine Biotechnology programme will be defended in 2022.

(2) Expert judgement/indicator analysis

The panel judges that the Bachelor's thesis in the *Biology and Marine Biotechnology* programme at KU meets the requirements of the subject and the cycle. SER and Annex 3 provide a detailed list of thesis titles. A significant number of the theses defended are clearly related to the interests of the social partners/employers, which was confirmed by some social partners (employers) and alumni during the site visit. Students and alumni confirmed that they have various options to choose the topic of their thesis (and also the institution where they will do most of the work) and that they receive great support from potential mentors and social partners. The final theses available in the supplemental materials of the SER are evidence that students are conducting independent biological research during the thesis process that is at a high level in terms of the scope of research tasks and the quality of statistical data processing. The theses published in 2020 are of the highest caliber given the quality of the research tasks and statistical data processing, and future theses can be guided by the 2020 examples. The panel members therefore concluded that: 1) the thesis topics are well coordinated with the social partners and 2) the workload, credit load and opportunities associated with the bachelor thesis in the *Biology and Marine Biotechnology* programme at KU are optimal to demonstrate the knowledge acquired during the study and the students' ability to analyse and apply practical skills.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Programme objectives and outcomes are generally in line with the needs of society and the labour market.
2. The programme offers students clear opportunities to shape the structure of their studies according to their personal goals.
3. The topics (and processing) of the final theses are well coordinated with the social partners.

(2) Weaknesses:

1. Low awareness among students of their employment opportunities after graduation.
2. Lack of modern teaching techniques.
3. Excessive use of written examinations.
4. Outdated literature as teaching/learning aids.
5. Curriculum inadequately covers the biology part of the study programme.
6. Learning outcomes inadequately cover the biotechnology part of the study programme.
7. Learning outcomes that emphasize knowledge of the technological sciences and its application are underrepresented in the programme.

3.2. LINKS BETWEEN SCIENCE (ART) AND STUDIES

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

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

(1) Factual situation

The research activities were evaluated in the biology research field in 2018 as strong with limited international recognition. The results of the annual comparative assessment by the Lithuanian Research Council show an increase in score over time. The research has a good impact in the marine research field and the researchers are collaborating with international researchers and the majority of research output is in collaboration with international partners. The experts pointed out very a very good research environment. The evaluation of the ecology field was assessed as strong internationally with good research infrastructure and successful in competing for international funds. Most of the research conducted in MRI belongs to the field of ecology that is scored better than the single unit field of biology. Yet, as the research in ecology has a strong biological knowledge base it is somewhat difficult to separate the two.

There are eight research groups that are involved in scientific and applied projects. KU has adopted a strategic research direction and the research in the study field evaluated is related to strategic priorities. Several projects are funded by external funding.

(2) Expert judgement/indicator analysis

There are research activities in the field of study and there has been an increase in the projects related to marine biotechnology. The research conducted in the study field is very good with a good impact on the marine science field with a very good research environment. The annual comparative assessment shows an increase in the last few years. There are strong

collaborations nationally and internationally and the research environment has the ability to attract competitive international research. The new research facilities will give the opportunity for even more projects in the future.

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

(1) Factual situation

The courses in the study programme have been updated based on results from research performed by the scientific staff. There have been updates in the content of twelve courses and the topics of laboratory work of seven courses have been expanded. The project ideas, research objectives and achieved results are presented to the whole academic community and the students are invited to participate.

(2) Expert judgement/indicator analysis

The panel judges from the SER and the interviews, that the content of the study programme is updated basing on the latest developments in science. The evidence shows that the university has an excellent system for implementing such changes and that they keep track of the changes made. The participation of the researchers in international projects also ensures such updates based on the latest development in science.

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

(1) Factual situation

The students have the possibility to be involved in research activities through the preparation of Course Projects, Bachelor's Thesis and laboratory internships. Several Bachelor theses were prepared and defended based on research activities, and students are involved in the preparation of publication of journal articles. The students have the possibility to be involved in research from the Bachelor level, and the students have the possibility to be employed in research projects. They also have the possibility to be involved in scientific, young scientific and scientific-practical conferences both nationally and internationally. The Marine Research Institute annually organises a national conference where students present their work.

(2) Expert judgement/indicator analysis

The panel judges from the SER and the interviews, that the students have excellent opportunities to be involved in research. The students are an integrated part of the research groups and have the possibility to use the laboratories both for study and research. The students have this opportunity throughout the course of their studies, beginning from the first semester. This level of integration of the students in ongoing research is unique as in most

universities there are separate laboratories for teaching and research and most students are only integrated in research as part of their Bachelor thesis.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Student are engaged in research activities throughout the course of their studies.
2. Several research projects with national and international funding.
3. Excellent research environment with state of the art laboratories.

(2) Weaknesses: none

3.3. STUDENT ADMISSION AND SUPPORT

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

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

(1) Factual situation

The admission is carried out by the Lithuanian Association of Higher Education Institutions for Organizing General Admission (LAMA BPO) and follows standardized procedures for the calculation of competitive scores. The score includes grades in biology, mathematics or chemistry, Lithuanian language and additional subjects. A minimum score needs to be reached for admission. These rules are publically available on the universities and the associations website. The number of applicants and their average scores remained stable over the last years. About 15% of applications list KU as first priority. To attract applicants KU offers an educational programme for high-school students ("SmartSea"), provides up-to-date online content, including an interactive platform, where students can connect with lecturers and current students, and participates in study publicity events.

(2) Expert judgement/indicator analysis

The admission criteria are public, straightforward, and suitable for a Bachelor programme. It was, however, mentioned by students and staff that Russian speaking students have initial problems following the content. The extent of this problem was evaluated heterogeneously by different lecturers, and may warrant further investigation by MRI. The panel does not consider this aspect to be a weakness but nonetheless suggest to monitor.

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

(1) Factual situation

KU has defined procedures for the recognition of prior non-formal and informal learning, partial studies and foreign qualifications that follow common practises such as learning agreements. These regulations are laid down in the KU Study Regulations. Compatibility is evaluated by the head of studies and the teacher of the respective subject and approved by the director of the institute. The rules are focussed on general comparability of subject, scope and essential objectives. In the last three years the rules have applied once.

(2) Expert judgement/indicator analysis

Adequate procedures are in place and are lenient. The rules are compliant with the Lisbon convention. During the interviews there were no indications about problems with their application. The low number of cases with regard to recognition of credits achieved at other higher education institutions may merely reflect the low number of students in the programme.

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

(1) Factual situation

KU has about 300 cooperation agreements in total. Erasmus+ selections are twice a year. They are posted on the university's website and social networks, and sent to the students by mail. In addition the university's coordinator presents the possibilities to the students. In addition there are two EU-Conexus international undergraduate specialization through which students can attend courses at partner universities remotely. During the last three years there were six incoming students, two potential outgoing students cancelled their exchange due to the global pandemic. A substantial fraction of the students (7 total, ~41%) instead chose virtual mobility via EU-Conexus as an alternative.

(2) Expert judgement/indicator analysis

KU provides students with mobility opportunities and supports organization of mobility through an Erasmus Coordinator. Financial support is organized through the very well established Erasmus+ program. The existing regulations (see section 3.3.2) enable students to study abroad without extending the duration of their studies.

EU-Conexus virtual mobility made up for the restrictions imposed by the global pandemic. In the future (post-pandemic) KU should continue to motivate students to participate in Erasmus+ exchanges.

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

(1) Factual situation

The self-evaluation report focuses solely on financial support of excellent or engaged students, students with financial difficulties and students with disability in the form of scholarships. On the university's website the panel found information about other support structures such as a students integration officer to aid foreign students, a disability affairs coordinator and almost daily visiting hours for students at the dean's office.

(2) Expert judgement/indicator analysis

During the site visit the expert panel came to the conclusion that students are overall happy with the support given. According to the students all issues could be resolved directly through interaction with the on-site staff, or by referral to the proper responsables. The students value the small size of the programme and the direct and efficient communication with the staff. The panel considers the support to be good, including the support for disabled and socially disadvantaged students.

3.3.5 Evaluation of the sufficiency of study information and student counselling

(1) Factual situation

Students are introduced to the programme and relevant information by the MRI study organization group and administration at the beginning for the academic year. This includes introductory lectures. They are also acquainted with the library and reading room, as well as research areas and potential course project topics. Information about individual modules is provided in the first lecture of the module in question. In addition there are frequent formal and informal meetings.

(2) Expert judgement/indicator analysis

During the site visit the evaluation group came to the conclusion that students are happy with the information provided. The small size of the student body allows for direct communication between staff and students. The panel considers the information provided and counselling given to be good. However, it became apparent that the formalized representation of students in the unit is somewhat unclear.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Effective financial and academic support of KU students for good learning results including disabled and socially disadvantaged students.
2. Small cohorts allow for shortcuts and direct interaction of students and responsible staff.
4. MRI is active in promoting the program to potential students.
5. KU handled the lack of physical mobility well through virtual mobility via EU-Conexus. This could serve as a template for other universities, also to enable mobility for students that cannot travel due to involvement in the workforce or due to family circumstances.

(2) Weaknesses:

1. The SER did not provide detailed information about student support beyond financial support.

3.4. TEACHING AND LEARNING, STUDENT PERFORMANCE AND GRADUATE EMPLOYMENT

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

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

(1) Factual situation

During the first lecture a plan of independent work is presented to the students, and the lecturer consults them during the semester. Students' independent learning abilities are developed by individual work, course projects and Bachelor's Thesis preparation. Students can gain practical work skills through laboratory practice as well as during internship.

In each study course, traditional learning methods are complemented by active and inclusive study methods mostly based on team work. Teaching methods are very diverse, and small groups of students allow good teamwork and cooperation. Students are supported to work independently searching for information and analysing data. The needs for better knowledge from high school, especially from Russian speaking and training to use ICT programs were exposed during interviews with students.

Methods of studying and assessment in the field of biology are presented in the descriptions of study subjects in the Academic Information System (AIS). Students see the results of independent work assessments in AIS. Joint meeting with lecturers and researchers at the end of the first year is focused on the presentation of possible research topics for choice of Course Project/Bachelor's Thesis. After completing the Bachelor's study programme in *Biology and Marine Biotechnology* and obtaining the Bachelor's degree in Life Sciences, there are

opportunities for 2nd cycle studies in the field of Life Sciences abroad or in Lithuania or by choosing master's studies in the KU *Ecology and Environmental Science* programme.

(2) Expert judgement/indicator analysis

As exposed by students and alumni during the site visit, the skills and knowledge gained during studies are valuable for their professional career. Alumni confirm that the study programme prepared them well for the labour market, and employers confirm that the study program provides enough theoretical knowledge and practical skills training. Cooperation of teachers and students is based on open discussions, and continuous information is provided by lecturers about the learning process. The students are well informed about the studies and learning process, which is supported by meetings with students every half year and meeting of first year students with the study committee in September. Due to a low number of enrolled students, good communication is supported by small working groups. The panel members conclude that these issues are a good basis for achieving the intended learning outcomes and meeting the student needs.

However, during the site visit, graduates exposed the need for more lectures conducted in English. From interviews with students it is evident that some courses are difficult to understand and they would like more involvement in practical tasks based on innovative study approaches as well as more specific knowledge.

The panel also agreed that it is necessary to increase the number of students interested for the first priority enrolment and include social partners to increase the publicity of the study programme.

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

(1) Factual situation

Students with special needs can be counselled remotely using video tools, and the learning material is hosted in a virtual learning environment (VMA). The facilities used during studies are adapted for people with mobility, hearing and visual impairments, and are equipped with elevators and toilets for people with special mobility needs. The KU website has a special version of the website for visually impaired people. Library departments provide readers with individual needs with access to special programs in reading rooms.

(2) Expert judgement/indicator analysis

Through discussions with administration and teaching staff during the site visit, it was evident that the old and new buildings, library and labs are easily accessible and the teaching process is well adapted for students with special needs. Individual learning programmes are

designed for students with disabilities and financial support is provided for socially vulnerable students. Individual study plans are developed for students with special needs.

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

(1) Factual situation

Study feedback and meetings with the lecturers and study programme committee are an integral part of monitoring the study progress. Study progress is planned by regular discussions and surveys conducted by lecturers about the study subject, study practises and graduations. Meetings with students are held every six months and, if necessary, more often, depending on the individual student's demands, considering the counselling on the study process improvement. Special attention is paid to the choice of the topic of the Course Project / Bachelor's Thesis: at the end of the first year of study there is a joint meeting with the lecturers and MRI researchers, where the possible research topics are presented.

(2) Expert judgement/indicator analysis

Student surveys about study programme are mostly conducted as questionnaires, which are submitted to KU administration. From discussions with students and other stakeholders during the site visit, it was evident that the questionnaires are not very well accepted. The panel concludes that extensive and time consuming questionnaires cannot be the convenient base for monitoring study progress and effective feedback to students (see also in 3.7). Feedback to students and planning the study progress to promote self-assessment is mostly based on continuous discussions with lecturers and PhD students, involved in lecturing, but is not documented. Thus, there is still much space for improvement regarding developing an efficient strategy to provide quality feedback to students during the course of their studies.

The panel members consider that the collaborative approach including the KU staff and students is very important and beneficial for promoting the self-assessment and planning of study progress.

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

(1) Factual situation

According to the data from the SER, employment reached 72% immediately after graduation and a significant part of graduates continued their studies in the second cycle. According to the Graduate Career Monitoring data for 2018/2019, graduates were employed 100% in a year after graduation. Based on the surveys of graduates, about 64% of them agreed that

undergraduate studies in Biology helped them to get the job they wanted. Results of the survey of the graduates of the programme in 2018-2020 show that 55% of them were satisfied with the acquired general knowledge they need in their professional careers, 73% to the development of social skills and 46% to the acquisition of specialized skills. Graduates identified insufficient practical involvement and scope of laboratory work compared to the theoretical part, lower teaching quality of older lecturers, and lack of specific knowledge and innovation.

(2) Expert judgement/indicator analysis

Very good cooperation of KU MRI with potential employers opens possibilities for employment and gives opportunities for applied research and training, and choice of final thesis' topics. Discussion with graduates and employed alumni confirmed good communication between MRI and employers. The employability rates cannot be estimated precisely due to the low number of graduates during the last three years. Based on the data from the SER, about a half of the graduate population was satisfied with the general knowledge acquired during the studies and even less than a half of them about the acquired special skills.

However, during the site visit, the staff responsible for the preparation of the SER indicated that they had difficulties in getting in touch with previous students and collecting the data from the recent graduates. Two of the alumni present at the site visit meeting pointed out that they work in school, which shows that the BSc study programme provides a good basis for reorienting careers towards work in education. Due to the increased student interest to continue studies after graduation, it might be beneficial to reconsider to include more basic biology courses in biology in the curriculum (as also noticed in the first evaluation area).

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

(1) Factual situation

The principles and measures for ensuring academic integrity, tolerance and non-discrimination are defined in the KU Code of Academic Ethics. The lecturer's relationship with students is based on the principles of academic cooperation and transparency. Lecturers must report to the ethics committee on cases of student dishonesty during the assessments and store the student's personal data in accordance with the procedure established by law. Students must follow the principles of academic integrity when writing Course Project or BSc Thesis according to Klaipėda University students' requirements for independent written works as stated in the KU Senate Resolution. The authenticity of written works is verified in the Oxsico program, plagiarism detection software.

(2) Expert judgement/indicator analysis

As stated in the SER and proven by discussions with students and alumni during the visit of KU, an effective system to prevent plagiarism and dishonesty during the assessments has been successfully applied. It was evident that there have been no violations in this study program during the last 3 study years. However, at the site visit, it seemed that part of the teaching staff was not fully aware of the existence of the plagiarism detection software.

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

(1) Factual situation

The right of students to appeal against the assessment of study results is defined in the KU study regulations in the section “Appeals Procedure”. Student who disagrees with the grade of the exam or assessment of the term paper (project) shall have the right to appeal to the head of the division (in case the research adviser of the term paper is the head of the division, to the Faculty Dean / Institute Director) within two working days after the assessment and to get an answer within three working days. According to the SER, there have been no appeals or complaints in the last 3 years.

(2) Expert judgement/indicator analysis

The study regulations provide the basis for formal appeals procedures. Discussions with students and graduates revealed that they are not much aware or they do not use the possibility of appeal about the grade of the exam or for the evaluation of the Course Project and Bachelor's Thesis. Students exposed the fact that lecturers are cooperative and ready to discuss their disagreements.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Successful achievement of individual study results is ensured for all students, including students with disabilities, by applying various study methods and effective cooperation between lecturers and students. Program provides good opportunities for study progress and achievement of intended outcomes in the field of marine biology.
2. Good opportunities for employment and/or continuation of studies at second level cycle.

(2) Weaknesses:

1. The extensive three year programme is mostly based on general courses and very few electives for acquisition of specific knowledge.
2. Student feedback for self-assessment and study planning based on discussions with lecturers and informal surveys is not reliable due to weakly documented processes.

3. The opportunities to take more courses in English are very low.
4. The connections with graduates are not very strong and feedback on outcomes is not followed during a longer period.

3.5. TEACHING STAFF

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

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

(1) Factual situation

The complement of teaching staff is 24; eighteen are permanently employed at the University on at least a half-time basis and the remainder are experts from external (including to Lithuania) institutions who contribute via guest lectures, and supervising Course Projects and Bachelor's theses. The staff: student ratio is effectively 1:1. Given the small number of students on the programme (and the absence of an entire cohort) teaching loads are low, at a maximum of 20 percent of total workload, though this does give scope for the involvement of students in lecturers' research activities. The relative abundance of staff means that there is much redundancy such that if any one person is unable to fulfil his/her duties there is always a competent replacement. Doctoral and advanced postgraduate students contribute by teaching certain aspects, such as practical classes, to a maximum of between 15 and 20 percent of total contact hours per year. The composition of teaching staff complies with the requirements of the relevant legal acts. Since 2017 six teaching staff of the Department have left the University; others not in the Department have also left but the University was unable to provide the date when they left and staff met by the Panel were unsure of the procedures to be followed to replace staff. Also, to check how the leaving staff were replaced in terms of expertise the Panel asked for the broad area of expertise of these staff, but the University declined to provide this information. Staff who conduct laboratory work and other practical classes, or supervise students' practical training, are qualified to at least Master's level, and most staff possess a PhD. Most staff are active in research of relevance to the programme and approximately one-third are full professors. All of the eighteen permanent staff have recent papers in international peer-reviewed journals, mostly in relation to marine science. Similar research esteem is in evidence from the external staff, but with a broader research base.

(2) Expert judgement/indicator analysis

The panel positively judges the number, qualifications and competency of the staff within the study field. All legal requirements are met. There is currently a stable, well experienced, teaching workforce. Doctoral students and advanced postgraduate students receive limited exposure to teaching duties, which enhances their career prospects and ensures a supply of higher education teachers.

The ratio of staff to students is luxurious and should provide for an intense student experience with extremely close tuition. In turn this may lead to increased student involvement in research and it would be expected that students will be involved in an increased number of research outputs in the short term.

The research credentials of the teaching staff are not in doubt: they can clearly teach from a position of authority. However, the range of expertise is limited (mostly to marine science) and while it is easy to understand how the marine biotechnology component of the programme is reflected in the teaching staff, it is less easy to understand this position for the more broad 'biology' component, in particular terrestrial plant and animal biology (also addressed in the area 3.1.).

The six external experts who teach into the programme are each notable experts in their fields and have been chosen wisely to both reinforce and complement the expertise of permanent staff, and bring valuable industry and international dimensions.

The self-evaluation was silent on the procedures involved in replacing staff and on how new staff are introduced to teaching and assessing in higher education. The panel was unable to determine whether staff with particular areas of expertise are replaced at the earliest opportunity.

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

(1) Factual situation

Academic mobility in the University is largely facilitated via the Erasmus+ programme and the University has a specific Order that relates to this: '*Description of the Procedure for the Participation of Academic and Administrative Staff of Klaipėda University in the Erasmus+ Mobility Program*', which also specifies the selection criteria and recommends visits of 2-3 days. A small proportion of programme staff (seven since 2017) have instead participated as a presenter in shorter single lecture/seminar events or lecture series, between two and four visits per year in total. Although these have been across the full geographic range of Europe, some of those cited were single lectures to a scientific organisation, more akin to delivering a research seminar than true academic staff mobility. The SER did not refer to incoming staff mobility, but the panel determined that when short-term incoming visits are made, typically by research collaborators, they deliver either single sessions or short lecture series, though such visits were confined to 2019 and 2020.

(2) Expert judgement/indicator analysis

Staff seemingly have not taken advantage of any Erasmus+ arrangements and mobility is rather low and has been exacerbated by the CoViD-19 pandemic. It is positive that Lithuanian and the University's biological expertise is being exported across Europe, and that students are exposed to sessions delivered by incoming experts on an *ad hoc* basis, but the number of

staff involved is low and there is scope for more mobility, both incoming and outgoing, particularly through the Erasmus+ programme, once travel becomes normalised. Perhaps because of the low level of activity here, benefits have not been analysed. Promotion of academic mobility opportunities, particularly to those staff who have not engaged for a prolonged period, is warranted.

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

(1) Factual situation

Competence improvement is governed by a resolution of the University senate: *'On the Approval of the Regulations on the Qualification Improvement of Lecturers and Researchers of Klaipėda University.'* The self-evaluation indicates that once in each five year period staff are entitled to training which may take various forms including a scientific internship or a training event. Funding may be internal or external and salary is maintained during the training. However, senior staff met by the Panel were unaware of this opportunity.

The expert panel was provided with a list titled *'Improving the competencies of the study program teachers'* that itemised professional development undertaken by programme staff since 2017. However, all except one of these items was related to research and the total number of persons involved over the 4-year period was 12, thus a considerable proportion of staff have not engaged in professional development in the previous 4 years. Further there is scant evidence that any development in learning and teaching has taken place.

The panel specifically asked about training for new teaching staff and was told that they have access to general information on how students should be taught and assessed, access to a training course on how to use the VLE, and can gain a qualification in pedagogy. However, the engagement of any of the programme teachers with these opportunities is at a very low level. The qualification in pedagogy prepares also for school teaching and so is not sensitive to the needs of higher education learning. Those new to teaching are sometimes schooled in teaching techniques by more experienced staff.

Students reported wide variability in teaching competence, and were of the opinion that some classes were taught at standards more befitting of compulsory education. However, they were also of the opinion that their teachers were very responsive, supportive and keen to help with their studies.

(2) Expert judgement/indicator analysis

Opportunities to participate in training are limited: one event per person in five years is not sufficient as a means of credibly addressing continuing professional development requirements. Since most staff are active in research considerable professional development will accrue by virtue of maintaining a strong research presence. However, the attention of competence is directed almost exclusively towards research and there is little evidence that staff receive any development in modern pedagogical techniques. Further, there is no systematic training for new teachers in how to teach, rather they are left to make their own

arrangements, or learn from other unqualified staff. The panel concluded that there is little attention to the professional nature of higher education teaching and staff are not cognisant of modern approaches to higher education teaching and assessment. This presents a significant risk to teaching quality. Remedy here may remove some of the reported variability in teaching competence and allow a movement from the reliance on predominantly the traditional lecture as a means of content delivery.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. The scientific credentials and qualifications of teaching staff.

(2) Weaknesses:

1. Low occurrence of incoming and outgoing staff mobility, and low numbers of individual staff involved.
2. Lack of attention to the professionalism of teaching staff in relation to learning and teaching.

3.6. LEARNING FACILITIES AND RESOURCES

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

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

(1) Factual situation

The SER describes the infrastructure of the study field. The programmes in the field of biology and related fields are implemented in the building of Marine Research Institute which was completed in 2018. Laboratories were equipped with newly purchased equipment in connection with moving into the new building. There are several laboratories equipped with relevant equipment and the university has an internal management system for booking of use of the facilities. The MRI building also contains classrooms that are used for theoretical lectures. In addition, the university has teaching facilities in other buildings that may be used. The university in addition has infrastructure for underwater research, marine biological resources survey and a research vessel.

The students may use the Library of the Faculty of Marine Technology and Natural Sciences with access to literature and databases. There are in addition workspaces for the students in

the library, and some of the resources may be accessed through the virtual library that contains e-books, open access papers etc.

(2) Expert judgement/indicator analysis

The panel had the opportunity to review a video tour of the laboratory facilities. This gave a good overview of the equipment available for implementing the programme. The facilities are state of the art and well kept. The students' access to these facilities were confirmed during the digital site-visit. Social partners mentioned that the facilities made research collaboration possible. The library resources are good, but the panel observed that there may be some limitations in the number of books available and that some of the books used in the study process seem rather outdated, even if newer literature is available. This may be caused by that the focus on pedagogical training is low as evaluated in 3.5.3.

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

(1) Factual situation

The scientific infrastructure that currently is up-to-date and state-of-the-art, are shared between research and studies. According to the SER, there are no current plans for updates of the Laboratory of Coastal Environment and Biogeochemistry. There are plans for development of the Fisheries and Aquaculture Laboratory and several sources for funding are envisioned. Consumables and materials for laboratory work are planned and managed by the institute.

(2) Expert judgement/indicator analysis

There is evidence for the practice of using external funding from various sources in updating laboratory facilities. The panel had the opportunity to review a video tour of the laboratory facilities. The recent upgrades of the equipment described in the SER were evident from the video. Also, evidence is given to support the planning process for upgrading the equipment. Yet, these upgrades seem largely dependent on projects and external funding, and the university should take this into account in their future plans for upgrading the equipment.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. Well equipped laboratories for studies and research.
2. Plans for upgrading and further develop the scientific infrastructure.

(2) Weaknesses:

1. Upgrade of equipment dependent on external funding.

3.7. STUDY QUALITY MANAGEMENT AND PUBLIC INFORMATION

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

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

(1) Factual situation

According to the SER, the Quality Management System of KU complies with ISO 9001:2015. The SER lays out a wide range of documents that regulate processes such as programme planning, implementation, control, improvement and other aspects of management. Within this system, internal evaluations of the structure and content of programs take place annually. Programs are certified internally for one to three years. This certification process also takes into account the latest developments in the field, feedback from social partners and comparisons with other similar programs in Lithuania and elsewhere.

Quality assurance is the responsibility of the Committee of Physical and Life Sciences Study Field (CSF), which is composed of the director of the institute, the study programme managers, a social partner, and a student. It collaborates with the KU's Study Quality Commission and other actors at the university level, and is accountable to the MRI council, which evaluates program quality.

The Head of the programme and the MRI Internal Study Organization Group, composed of five MRI scientists, are directly responsible for the implementation of the programme. They oversee various aspects such as the study process, internationalization, resources, and communication. They also analyse and assess the quality of study activities and organize the implementation of external evaluation recommendations.

The processes of programme administration and quality assurance are reflected in the Academic Information System. In addition, the electronic information system Point provides documents and process descriptions. The available data, such as statistics on mobility, progress and drop-out, are considered sufficient for quality improvement. A new Academic Information System is currently being implemented that will include additional automation of processes, i.e. providing feedback and calculating academic workload.

Acute issues are discussed at MRI meetings held at least three times a year. At the annual general meeting, the quality of studies is analysed and improvements are discussed. Stakeholders are invited to attend. After each semester, students are given the opportunity to

provide feedback on the content and quality of teaching via questionnaires. The results of these surveys are discussed in the CSF and MRI meetings.

(2) Expert judgement/indicator analysis

KU has defined its decision-making and management processes in various documents – the SER states that they meet the ISO standards. Evaluation processes take place annually and internal certifications are conducted at least every three years. The main stakeholders are the Committee of Physical and Life Sciences Study Field, the director of the institute, and the MRI council. However, there is no indication of the exact resources and facilities used for quality work.

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

(1) Factual situation

Social partners, students and graduates can provide formalised feedback. Social partner feedback is also included through additional channels, including working groups, projects, and direct collaboration. Some participate directly in teaching, and all can submit suggestions for improvement, and are invited to the annual MRI meeting. Students are represented in some of the relevant working groups, such as the CSF and the institute council.

(2) Expert judgement/indicator analysis

Overall, the SER provides little concrete information on stakeholder participation and is greatly focused on social partners only. It was clear from the interviews that the social partners are involved to their satisfaction, but that student involvement in internal quality assurance should be improved (e.g., besides CSF and the institute council, students could be included in the activity of other channels – the same as social partners).

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

(1) Factual situation

KU conducts evaluations of study content and quality of lectures and practice (students), KU activities from the perspective of graduates and the efficiency of the study process (graduates) and the implementation of the study process (staff), as well as other complementary targeted surveys. The summarised results are discussed with the social partners and reflected in internal reports. Annual indicators (basic statistics) are collected and evaluated. All basic information, e.g. admission criteria and descriptions of study subjects,

as well as summarised information on indicators and evaluations are publicly available as part of the annual report on the unit's website.

The online survey of graduates has been conducted to find out about students' prospects in the labour market and the quality of competencies acquired during their studies. From discussions with students and other stakeholders during the site visit, it was evident that the reliability of the questionnaires is low and the process of answering them is very time consuming (also addressed in 3.4.).

The student surveys are organized by the institute and conducted by the study administration. If the subject of the study programme falls short in the surveys, the study committee discusses with the lecturers what could be improved to ensure the quality of the study programme. The student questionnaire provided in SER includes 20 questions on study content, teaching methods and performance, literature, and academic integrity.

The questionnaires are very time consuming with too many general questions (20) and mostly repetitive topics. The average score for the quality of biology courses is very high (4.6) compared to general courses (3.7). The procedure for obtaining student feedback based on questionnaires is very lengthy and does not guarantee quick and effective changes to the curriculum.

(2) Expert judgement/indicator analysis

Online surveys completed by students are a valuable contribution to the improvement of the study process. However, due to the small number of respondents and the lengthy process of survey evaluation, this approach cannot be considered a valid indicator of the quality of the degree programme

Student surveys about the study programme are mostly conducted in the form of questionnaires submitted to KU administration. From discussions with students and other stakeholders during the site visit, it was clear that the questionnaires are not well received. The panel concludes that extensive and time-consuming questionnaires are likely not a suitable basis for monitoring the progress of the programme and providing effective feedback on the quality of the programme.

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

(1) Factual situation

In 2019-2020, KU conducted surveys on the quality of 11 subjects (including 3 general studies). Participation in the survey was high (71-90%). Questions ranged from timeliness of content, to relevance of the subject, to connection between theory and practice. Overall, the results were very good (4.4/5), with students expressing overall satisfaction with teaching. A negative outlier was the relevance of the general study subjects.

(2) Expert judgement/indicator analysis

Since the programme in its current form was only established in 2018, the SER only presents the results of a single study (2019-2020). The outcomes of said study are only analysed in very general terms.

Strengths and weaknesses of this evaluation area:

(1) Strengths:

1. The organization and evaluation of the study process is carried out by the MRI Internal Study Organization group and includes all stakeholders who meet annually to discuss the quality of the studies.

(2) Weaknesses:

1. The quality and processing of formal student surveys about the study process is not very effective due to inadequate questionnaires.
2. Other means of quality assurance exist via direct communication between students and staff, which is facilitated by the small programme size. However, documentation of quality work is thereby lacking.
3. Students from the programme are not involved and have little knowledge about student representation.

IV. EXAMPLES OF EXCELLENCE

The level of integration of students in research from the first year of studies is exceptional. The students are an integrated part of the research groups.

V. RECOMMENDATIONS

Evaluation Area	Recommendations for the Evaluation Area (study cycle)
Intended and achieved learning outcomes and curriculum	<p>Increase students' awareness of their employment opportunities after graduation.</p> <p>Replace the most commonly used teaching/learning methods (traditional lectures and literature analysis) with other, modern teaching methods (e.g. digitally assisted teaching, collaborative learning, flipped classroom, project-based learning).</p> <p>Update teaching/learning literature with current titles.</p> <p>Introduce curriculum changes (e.g., include evolution in the required curriculum) to better cover the biology portion of the degree/study programme.</p> <p>Introduce changes to the list of learning outcomes to better cover the biotechnology part of the degree/study programme (i.e., supplement the list with learning outcomes that emphasize knowledge of the Technological Sciences).</p> <p>It would be good to reconsider the title of the programme in relation to its aims, content and outcomes.</p>
Links between science (art) and studies	<p>Monitor the level of integration of students in research if the student number increases to secure the continued exceptional level of integration.</p>
Student admission and support	<p>Initial problems of students with Lithuanian as a second or foreign language could be monitored and addressed if necessary.</p> <p>Students should be further encouraged to participate in study mobility programmes.</p> <p>Student representation should be formalized, transparent, and communicated to the students in the programme.</p> <p>Increase the number of students enrolled with the first priority choice of the programme.</p>
Teaching and learning, student performance and graduate employment	<p>Replace written exams with alternative forms of assessment or omit written exams in courses where there are many other forms of knowledge assessment.</p> <p>More advertising at faculty level and connections with social</p>

	<p>partners is needed.</p> <p>The connections with graduates should be strengthened and outcomes followed during a longer period.</p>
Teaching staff	<p>Increase both incoming and outgoing staff mobility, and increase the numbers of individual staff participating.</p> <p>Re-evaluate the whole approach to ensuring that teaching staff are competent to perform their duties. This involves ensuring that all staff are adequately and professionally trained for her/his role as a teacher and assessor in higher education, including in the use of modern pedagogical techniques.</p>
Learning facilities and resources	<p>The learning facilities and laboratories are state of the art and well kept. The university should continue the work to secure the continued updating of the equipment.</p>
Study quality management and public information	<p>Student feedback on study process and planning based on formal questionnaires should be replaced by a more effective system that allows rapid changes in the quality of the study program.</p>

VI. SUMMARY

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

The overall evaluation report of the BSc programme *Biology and Marine biotechnology* is positive. The panel received all the information needed for successful assessment of the program. Based on the extensive SER and virtual meeting with different stakeholders, as well as additional documentation kindly provided by KU, the panel exposes main positive and negative quality aspects of the program assessment:

Positive quality aspects of the evaluation:

The program is well structured, the aims and learning outcomes are clearly defined. The study program gives excellent opportunities for student individual work/research and is in line with the needs of society and the labour market. There are good opportunities for employment and/or continuation of studies at the second level cycle.

The scientific credentials and qualifications of teaching staff are very good. There are several strong research projects with national and international funding.

The reorganisation process of merging the Faculty of Marine Technology and Natural Sciences with the Marine Research Institute is still an ongoing process and so far the transition is successful and MRI is very active in promoting the program to potential students.

Successful achievement of individual study results is ensured for all students, including students with disabilities and special needs, by applying various study methods and effective cooperation between lecturers and students.

The laboratories for studies and research are well equipped and give excellent opportunities for student research. MRI has plans for upgrading and further developing the research infrastructure.

The organisation and evaluation of the study process is performed by MRI Internal Study Organisation group and includes all stakeholders who meet annually to discuss the quality of studies based on survey data from students and graduates.

Negative quality aspects of evaluation:

Learning outcomes inadequately cover the biotechnology part of the study programme *Biology and Marine biotechnology*, i.e. learning outcomes that emphasize knowledge of the Technological Sciences and its application are underrepresented in the study programme.

Curriculum inadequately covers the biology part of the study programme so the title of the programme does not correspond to the actual program's plan.

The extensive three year program BSc *Biology and Marine biotechnology* is mostly based on general courses and very few electives are available for acquisition of the specific knowledge.

The implementation of modern and diverse study and assessment methods is very weak in the study area of *Biology and Marine Biotechnology*. The proposed study literature in course descriptions is somewhat outdated.

The lack of attention to the professionalism of teaching staff in relation to learning and teaching, and very low staff mobility is a problem at KU.

Low student mobility during the last 3 years, probably also due to the pandemic situation.

Very low number of students enrolled with the first priority choice.

The quality and processing of the formal surveys for improvement of the study programme is not reliable due to the low number of respondents and ineffective questionnaires.

Signature of expert panel chairperson:

Prof. dr. Mark S. Davies