STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

Klaipėdos universiteto
STUDIJŲ PROGRAMOS *JŪROS APLINKOS INŽINERIJA*
(valstybinis kodas – 621H17005*)*
VERTINIMO IŠVADOS

EVALUATION REPORT
of STUDY PROGRAMME
MARINE ENVIRONMENT ENGINEERING (*state code* – 621H17005)
STUDY PROGRAMME
at Klaipeda university

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2. **Prof dr. Judit Padisák,** *academic,*
3. **Prof. dr. Soon-Thiam Khu,** *academic,*
4. **Prof. habil. dr. Arvydas Povilaitis,** *academic,*
5. **Ms. Lina Šleinotaitė-Budrienė,** *representative of social partners',*
6. **Ms. Inga Bačelytė,** *students' representative*.

Evaluation coordinator –

Ms. Natalja Bogdanova

Išvados parengtos anglų kalba
Report language – English

DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	***Jūros aplinkos inžinerija***
Valstybinis kodas	621H17005
Studijų sritis	Technologijos mokslai
Studijų kryptis	Bendroji inžinerija
Studijų programos rūšis	Universitetinės studijos
Studijų pakopa	Antroji
Studijų forma (trukmė metais)	nuolatinė (1,5)
Studijų programos apimtis kreditais	90
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Aplinkos inžinerijos magistras
Studijų programos įregistravimo data	1997-05-19

INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	***Marine environment engineering***
State code	621H17005
Study area	Technological Sciences
Study field	General Engineering
Type of the study programme	University studies
Study cycle	Second
Study mode (length in years)	Full-time (1,5)
Volume of the study programme in credits	90
Degree and (or) professional qualifications awarded	Master of Environmental Engineering
Date of registration of the study programme	19-05-1997

CONTENTS

I. INTRODUCTION

1.1. Background of the evaluation process

The evaluation of on-going study programmes is based on the **Methodology for evaluation of Higher Education study programmes,** approved by Order No 1-01-162 of 20 December 2010 of the Director of the Centre for Quality Assessment in Higher Education (hereafter – SKVC).

The evaluation is intended to help higher education institutions to constantly improve their study programmes 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) visit of the review team at the higher education institution; 3) production of the evaluation report by the review team and its publication; 4) follow-up activities.*

On the basis of external evaluation report of the study programme SKVC takes a decision to accredit study programme either for 6 years or for 3 years. If the programme evaluation is negative such a programme is not accredited.

The programme is **accredited for 6 years** if all evaluation areas are evaluated as "very good" (4 points) or "good" (3 points).

The programme is **accredited for 3 years** if none of the areas was evaluated as "unsatisfactory" (1 point) and at least one evaluation area was evaluated as "satisfactory" (2 points).

The programme **is not accredited** if at least one of evaluation areas was evaluated as "unsatisfactory" (1 point).

1.2. General

The Application documentation submitted by the HEI follows the outline recommended by the 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	Minutes of the Attestation Committee
2	Examples of marking scale
3	Oral examination marks

1.3. Background of the HEI/Faculty/Study field/ Additional information

The basis for this evaluation report is the Self-Evaluation Report (SER) submitted by the KLAIPĖDA UNIVERSITY (KU), its annexes and the results of site visit of the review team on May 4, 2016.

During the visit to KU, the review team interviewed the following groups: the administrative staff of the KU, staff responsible for preparation of the SER, teaching staff of the Programme, students, graduates and employers, evaluated the facilities of the university (classrooms, laboratories, library, computer facilities), examined students' final theses, and various other materials. After reviewing team discussions, preliminary general conclusions of the visit were presented. Attention was also paid to the fulfilment of recommendations and final statements mentioned in the previous external evaluation report conducted in 2012. After the visit, the team met at SKVC to discuss and agree upon the content of the report, incl. Recommendations and grading of major areas of evaluation, which represents the consensual views of the team.

The KU has been established in 1991 as a regional centre for research, studies, and art training specialists and fostering humanistic values. KU is integrated into international networks, tight relationships with regional community and employers. The KU Faculty of Marine Technology and Natural Sciences, founded in 2015, is aiming at sustainable development of port technologies and marine studies. The Master's Programme in Environmental Engineering (hereinafter Programme) is delivered by the Department of Engineering and the Department of Natural Sciences. The Department of Natural Sciences deliver the environmental part of the Programme, and the Department of the Engineering – subjects of engineering part. The Department of Engineering is administering the Programme implementation. The Programme is unique in Lithuania offering Master of Science in Environmental Engineering degree with main focus on marine environment.

1.4. The Review Team

The review team was completed according *Description of experts' recruitment*, approved by order No. 1-01-151 of Acting Director of the Centre for Quality Assessment in Higher Education. The Review Visit to HEI was conducted by the team on *4th May 2016.*

1. **Prof. dr. Olav Aarna (team leader),** *International expert for quality assessment in HE, Adviser to the Managerial Board of Estonian Qualification Authority Kutsekoda, Vice-Rector for Research and Development, Estonian Business School, Estonia.*
2. **Prof dr. Judit Padisák,** *Director of Institute of Environmental Sciences, University of Pannonia, Hungary.*
3. **Prof. dr. Soon-Thiam Khu,** *Professor of Urban Water System Engineering, Head of Civil Engineering Department, School of Engineering, Monash University, Australia.*
4. **Prof. habil. dr. Arvydas Povilaitis,** *Professor of Environmental Engineering, Head of Water Resources Engineering Institute, Aleksandras Stulginskis University, Lithuania*.
5. **Ms. Lina Šleinotaitė-Budrienė,** *expert for environment protection, director of JSC "Ekokonsultacijos", Lithuania.*
6. **Ms. Inga Bačelytė,** *Master student of study programme "Applied ecology", Aleksandras Stulginskis University, Lithuania*.

II. PROGRAMME ANALYSIS

2.1. Programme aims and learning outcomes

The aim of the *Marine Environment Engineering* (MEE) study programme is to prepare marine environmental engineers with profound interdisciplinary knowledge of environmental engineering, able to apply research methods for sustainable marine and coastal development, to assess companies' environmental problems, to improve environmental performance and to work in an international environment. The aim of the Programme is well defined, clear and publicly accessible in a range of media sources. The expert team confirms that the aim complies with the name of the Programme, as well as the qualification offered to the graduates. The aim of the Programme is based on the professional requirements, public needs and the needs of the labour market, particularly the Klaipeda marine cluster.

The Programme complies with the requirements for second-cycle study programmes in the Republic of Lithuania.

The Programme has been improved following the recommendations of the previous evaluation in 2012.

The need for the graduates of the Programme became vital because of the EU growing requirements for environmental quality. Shipping companies, Klaipėda State Seaport and companies located in the port area, as well as research institutions, such as ME Marine Research Centre, emerging the Baltic Valley, SC "ORLEN Lietuva" (Butinge oil terminal) and others show great interest in graduates of the Programme. Moreover, the newly established Open Access Centre with its research labs also needs the Programme graduates.

The intended learning outcomes (LOs) of the Programme (see SER p. 9) follow the structure of the EUR-ACE standard and are compliant with the Programme aims, and national Descriptor of Study Cycles (Order No. V-2212 of 21 November, 2011, of the Minister of Education and Science of the Republic of Lithuania). The LOs of the Programme are publicly available on the KU website, promotional information for applicants (leaflets, brochures), and other media sources.

The correspondence between the Programme LOs (24 in total) and subjects (13 in total, incl. Master's thesis) is presented in Table 1.2 of the SER. The Programme LOs are achievable and correspond to the qualification awarded. Although, there is a tendency to cover all the Programme LOs with maximum number of subjects, while having forgotten that all these LOs need to be assessed properly (for more details see p. 2.5). In the subject descriptions LOs are listed in detail, only the teaching and assessment methods are almost or exactly the same for different LOs.

The Programme's LOs are revised periodically involving students, employers and other social partners.

2.2. Curriculum design

The Marine Environment Engineering curriculum design meets relevant legal requirements. Total volume of the Programme is 90 ECTS, which is quite exceptional in Lithuania (majority of Master‘s programmes have 120 ECTS). The structure meets all official requirements in terms of the number of credits, volume of subjects, duration of practical training, the number of staff with doctoral degree as well as professors teaching study field courses. The curriculum is developed to reach the aim of the Programme and provides sufficiently wide general training for students to be competitive in the labour market. Majority of the Programme subject courses deal with relevant regional and marine cluster problems.

The duration of the Programme has been shortened to 1.5 years to attract more entrants. However, during the interviews the employers mentioned, that the graduates lack sufficient knowledge of environmental law (both Lithuanian and EU), have limited competence in professional use of foreign languages and need more practical skills. These issues need to be addressed by making necessary amendments in the Programme.

The recommendation from the previous external evaluation was to increase the number of marine oriented subjects has been partially fulfilled. Thus, the inclusion of the subject “Remote Sensing of Marine Environment” is very commendable and up-to-date. However, the Programme still needs some adjustment concerning the content of some subject courses. The content of the subject “Ecological Modelling“ is not consistent with its title. This subject has very little to do with ecological modelling, since its content is more oriented to mathematical statistics. The same remark refers also to the content of the subject “Research and Innovation”.

The Programme lacks key aspects of implementing the EU Water Framework Directive (WFD), only partially covering one aspect of the directive – cleaner production in industry. Almost nothing is taught about the methodology of identifying and assessing surface water bodies at risk, how to manage artificial and heavily modified water bodies (like channels and ports), about water economics and water policy, about public participation in river basin management planning. The linkage between the WFD and the Marine Strategy Framework Directive is also missing in the Programme.

The subjects “Cleaner Production and Eco-design“, „Renewable Energy Sources“ and „Industrial Products Eco-design“ are too general, and lacking clear relationship with the marine environment. Furthermore, there is some doubt if the topics taught in the subjects „Marine Water Treatment Technology“, „Pollution Prevention“ and „Sustainable Development of Marine Industry“ do not repeat each other. The review team recommends to include more case studies in the subject courses, and focus them more on the role of the EU Water Framework and other directives, environmental impact assessment and on sustainable use and protection of the marine environment.

Although the curriculum formally covers all intended LOs (see p. 2.1), the real content of subject courses does not cover coastal and marine process-oriented topics, (e.g. Ocean science, Marine hydrodynamics and/or Marine sedimentation and Erosion; Coastal hydraulics, etc.) described under categories "Engineering analysis" and "Engineering design" in Table 1.1 of the SER. None of the subjects in Table 1.2 of the SER includes such topics. Thus, this indicates that the LOs are not incorporated intrinsically at subject level. This is especially important because the entrants to the Programme are admitted with very diverse bachelor's backgrounds (biomedical, physical and engineering sciences).

The review team recommends introducing in the curriculum assignments supporting the development of students' entrepreneurship and managerial skills. This was also suggested by the employers and other social partners.

2.3. Teaching staff

The Programme teaching staff include lecturers with different background and they have relevant competences in the area of the taught subjects. The main criteria for forming academic staff are in compliance with the qualification requirements, i.e. experience of pedagogical, research and professional activity. Teachers get a five-year-tenure by means of a public competition. The workload of the academic staff of the Programme is regulated by annual decisions of the university Senate.

Teaching staff involved in delivering the Programme includes 23 teachers, of whom 10 (43%) are full professors, 7 associate professors (30 %) and 6 (27 %) lecturers. The qualification of teaching staff meets the requirements of legal acts of the Republic of Lithuania. The quality, quantity and age structure of teaching staff are adequate to achieve the Programme aim and intended LOs.

In general, the KU creates relevant conditions for the professional development of the teaching staff necessary for the provision of the Programme. It is praiseworthy that two librarians assist teachers and students in the use of the stock of research and teaching literature and the Internet reading hall. The administrator of the Faculty computer network provides support in placing and updating information in the virtual space of KU, support in using computers, multimedia, copying, video-/audio-, and other equipment.

It is advisable for teachers to seek regularly for new methods and innovations in teaching process. While interviewing teachers, it appeared that only one of them could mention innovations applied. This indicates that conditions for teachers' pedagogical development have to be improved. Better possibilities have to be provided (including financial support) for teachers to attend various level pedagogical courses.

During the visit it was apparent that the teachers were not sufficiently familiar with the LOs based approach, especially understanding the link between assessment and LOs. The expert team recommends KU introducing systematic training of teaching staff in implementing the LOs based approach following the constructive alignment concept.

Teachers of the Programme have been very active in publishing textbooks and other study materials as well as in participating at scientific conferences. Although during the period 2011-2014 teachers delivering the Programme were involved in many research projects with, only two projects (CyanoCOST and ZEB) are ongoing. Also, during the visit it was learnt that the teachers at the Faculty of Marine Technology and Natural Sciences are active participants of Erasmus+ staff exchange programme (the SER does not reflect the number of outgoing and incoming Erasmus exchange teachers involved in delivering the Programme).

Although some improvement regarding internationalisation of the Programme and teaching staff ability to deliver lectures in English compared to previous external evaluation truly has occurred, very few subjects („Remote Sensing of Marine Environment“, „Coastal zone management“) are delivered in English so far. The review team recommends taking active measures to improve teachers‘ knowledge of foreign languages, and involve more top specialists from practice as part-time teachers.

2.4. Facilities and learning resources

Premises (except the main building needing reconstruction), facilities and learning recourses are adequate both in size and quality at the Faculty of Marine Technology and Natural Sciences of KU. Teaching and learning equipment is updated and easy accessible for all students. The amount of the equipment is sufficient for the intended laboratory work, incl. research conducted during preparing a Master‘s thesis. The institution has a well-developed infrastructure for practical training and studies.

Students of the Programme can use two large auditoria with 187 seats in the modern building of the KU library. Each auditorium is equipped with fast Wi-Fi and modern multimedia. Two computer classes with 25 computer work places are used for contact classes and student‘s independent work. Access to the computer facilities is adequate as well as numerous professional licensed software are constantly updated. Students use MathCad, MatLab, OrCAD, FEMAP, Flow3D, GABI 5, StaadPro, Intergraph, ESABEAM Visat, ESNAP, AutoCad 2012, SolidWorks (200 lic.), SWAN, ArcGIS, CosmosWorks, AERMOD View. Several 3D printers are also available. During the studying process students are provided with suitable conditions to work individually in classrooms. They can carry out scientific research at Open Access Centre for Marine Research Laboratories.

It is praiseworthy that the university has a unique research vessel „Mintis“ – a modern laboratory of multipurpose marine and coastal environment research. Moreover, in the course of the implementation of the EU funded project Development of the Marine Valley Nucleus and Renewal of Study infrastructure (“JURA”) new modern teaching and scientific research equipment was lately acquired to ensure high quality study process. Nevertheless, the labs in the main building of the Faculty have to be renovated.

Teaching materials are adequate and accessible. Teachers and students can use all 10 university Library services and funds available. Basic literature for the Programme is stored in the library of the Faculty. The library is equipped with Wi-Fi, and its working hours are very flexible. Books necessary for study and research can be ordered via interlibrary subscription from other Lithuanian and foreign libraries. The KU Library provides access to new scientific information resources: *EEExplore; ScienceDirect*; *SpringerLink; Taylor & Francis; Wiley Online Library; Oxford Reference Online* and others. All databases are available not only from the university intranet, but also at home. Through licensed databases KU has access to many full-text journals and e-books. This creates good conditions for research and preparation of final thesis. All available recourses are adequate to achieve the Programme aim and LOs.

The review team commends KU for implementing the Moodle-based Course Management System. The platform is beneficial for both students and teachers.

2.5. Study process and students‘ performance assessment

The SER provides a clear picture of the admission procedures. They are well-founded and available on the KU website. Admission requirements allow all individuals having a Bachelor’s degree in biomedical, physical or engineering sciences to be admitted to the Programme. The Programme has been attractive to the entrants since their number is usually more than twice higher than the number of admitted students. Nevertheless, it remains somewhat unclear how students with diverse backgrounds overcome potential gaps of knowledge in natural sciences and engineering. While interviewing teachers, the review team got an explanation, that basics of the fundamental disciplines are introduced in the relevant subject courses. However, this argument is not very convincing. No information has been provided in the SER to prove this. For instance, what are the basics of engineering provided to the students with biomedical background in order to achieve a relevant engineering knowledge? The review team recommends reconsidering this aspect of the Programme delivery.

The Faculty administration and teaching staff do their best to ensure adequate provision of the Programme and the achievement of LOs through proper learning environment and involvement of students into applied research, incl. KU research projects. Student mobility is the main priority in

internationalisation of studies and enhancing international cooperation. Substantial efforts have been made to promote students‘ participation in the Erasmus+ mobility programme. During the period 2013-2015 12 out of 29 students (41%) participated in the mobility programmes. The student mobility is also promoted through active involvement in the EU research projects (see SER p. 21). Nevertheless, students’ knowledge of foreign languages calls for improvement.

University provides necessary academic and social support to the students. Students are consulted on career possibilities, teaching staff collaborates with employers and pass their job offers to the students, explain competences required for the job. Students Services Centre provides vocational orientation, practical training organisation and relations with social partner’s services. University has a Psychological Help Centre and Language Consulting Point. Information on the social events and provided financial, academic and other support is published in the KU website. Students are financially supported through a scholarship and grant system. The grants are provided for one semester in accordance with the studies, research, and social activities results of the previous semester. The lists of the candidates for grants are drawn up in each programme and are made public before the allotment of grants.

The procedure for assessment of students’ achievement is laid out in the KU Study Regulations. The assessment system is clear and publicly available. All student grades are recorded on the study list and on an academic information system where each student may log in by means of a password and see his/her grades. The appeal and examinations re-taking system is also clear and easily understandable to students.

A ten grades scale is used and the final grade is built up from several components (laboratory work, projects and individual assignments) and the final exam. However, it is unclear to what extent the assessment system is constructively aligned to Programme LOs, subject LOs, to the teaching activities and assessment. Clear relationships between the grade levels and the LOs seem to be missing, because the assessment criteria are not contextualised. Further, it is unclear whether the LOs are regarded as describing the threshold level that every student should has to reach or aspirational level that defines excellent achievements.

It is praiseworthy that students have to choose the topics for final thesis already within the first two weeks of the first academic year, and the supervisor is appointed by the Department. The requirements for final thesis and their assessment criteria are clear and publicly available. In general, the topics of the final thesis are up–to-date. However, in the sample of final theses reviewed during the visit, oil spill related topics prevailed. The review team strongly recommends diversifying the scope of final theses’ topics and strengthening engineering orientation of the Programme.

Students are regularly invited to participate in various conferences. Their participation at the conferences with presentation is taken into account while assessing the final thesis. This is a valuable practice, motivating students to pursue responsible and targeted studies.

The graduates find the qualification acquired quite good. Most employers are satisfied with the graduates' training. Professional activities of the majority of graduates meet the Programme providers' expectations. The Faculty administration, social partners, employers and graduates reveal that the Programme graduates are successfully employed. Some of them continue as doctoral students at KU.

2.6. Programme management

The Programme is delivered by two departments: the Department of Engineering and the Department of Natural Sciences of the Faculty of Marine Technologies and Natural Sciences. According to the SER, the Department of Engineering is authorized to administer the Programme and is responsible for its implementation. The Programme administration and internal quality assurance are monitored and coordinated by the Vice-rector for Academic Affairs assisted by the Departments of Student Admission and Studies under the Directorate of Studies. Furthermore, standing Committee of Study Programmes, approved by Rector of the University updates and improves the Programme in collaboration with the Committee of Academic Affairs of the Senate.

Regular attention is paid to students' feedback. Students have the opportunity to rate subject courses by filling out assessment questionnaire following the established procedure. The results of these surveys are discussed during the meetings of Dean's Office and the Engineering Department, and used by the Committee of Study Programmes when certifying the courses. Only the statistics of the surveys is made public.

The Programme evaluation and improvement processes involve stakeholders through the questionnaire for employers prepared by the Department of Engineering. Although the Department cooperates with many enterprises in the Klaipėda region, this process is rather sporadic in the context of the Programme development.

In the beginning of 2015/16 academic year specialised Study Programme Committee has been established responsible for the Programme design, development and implementation. Membership of the Committee includes also representatives of students and employers (Marine Protection Agency). Nevertheless, too many bodies are still involved into the Programme management, which is contra productive to establishing clear identity of the Programme, and assuring its quality.

The SER has been prepared by an *ad hoc* team. However, the review team would have expected a more critical and analytical SER with clearly defined weaknesses and areas of

improvement. The review team recommends considering critical and analytical self-assessment of the Programme as a regular task of the Study Programme Committee.

The interviews with employers revealed that the Programme graduates are very much welcome on the labour market. However, due to the small number of graduates (six per year on average) these expectations are not met. The review team recommend to take effective measures increasing the number of graduates (better marketing of the Programme, more scholarships and state funded places, cooperation agreements between employers and the University, bilateral agreement between the Klaipėda municipality and the KU, etc.).

2.7. Examples of excellence *

Starting the process of preparing the final thesis already in the beginning of Master's studies, which motivates students better in their subject course studies.

III. RECOMMENDATIONS

1. Strengthen the identity of the Programme by clearly defining the ownership (the Study Programme Committee involving also employers, students and graduates), the target market, and assure strong ownership and leadership.
2. Strengthen engineering orientation of the Programme.
3. Include more case studies in the subject courses, and focus them more on the role of the EU Water Framework and other directives, environmental impact assessment and on sustainable use and protection of the marine environment.
4. Implement measures to increase the number of graduates.
5. Train teachers for a better understanding and implementation of the constructive alignment approach: the relationship between the Programme aim, LOs, teaching and learning activities, and students' assessment.
6. Improve linguistic skills of teachers, especially using English as working language, to support research activities, international cooperation and mobility.
7. Consider wider involvement of guest teachers from abroad and regional organisations.
8. Improve students' knowledge of foreign languages, particularly by offering subjects in English.
9. Improve the quality of self-assessment process, making it regular and critically analytical.

IV. SUMMARY

The KU Faculty of Marine Technology and Natural Sciences is offering a Master of Science in Environmental Engineering qualification with the main focus on marine environment.

The *Marine environment engineering* (MEE) study programme (Programme) aims at preparing environmental engineers with profound knowledge of environmental engineering, able to apply research methods for sustainable marine and coastal development, to assess companies' environmental problems, to improve environmental performance and to work in an international environment. The Programme aim and learning outcomes (LOs) are based on the professional requirements, and reflect the needs of the seaside region and the marine sector. The Programme LOs sound achievable, however, they are not fully covered subject course LOs. Particularly, more coastal and marine process-oriented content should be added.

The structure of the Programme curriculum meets all legal requirements. However, the content of some subject courses has to be revised to avoid overlapping as well as assure consistency with their titles. It is recommended to include more case studies in subject courses.

The qualification and structure of teaching staff involved in delivering the Programme meets legal requirements, and assures achievement of the Programme LOs. Nevertheless, the conditions for teachers' pedagogical development have to be improved. Although some progress in internationalisation of the Programme, particularly delivering some lectures in foreign language, has been achieved, still very few subject courses are provided in English.

Premises, facilities and learning recourses are adequate both in size and quality. Teaching and learning equipment is updated and easily accessible for all students. The institution has a well-developed infrastructure for practical training and studies. It has a unique research vessel „Mintis" capable to serve multipurpose marine research.

The Programme has been attractive to the entrants with diverse backgrounds. Nevertheless, there is some uncertainty how the gap of entrants' knowledge in fundamental sciences and engineering is filled.

It is praiseworthy that the students choose the topic of final already within the first two weeks of their studies. The requirements for final thesis and their assessment criteria are clear and publicly available. The topics of the final thesis are up-to-date, however, they have to be more diverse and more focused on solving environmental engineering problems.

Professional activities of the majority of graduates meet the Programme providers' expectations. Nevertheless, too many bodies have been involved into the Programme management. As a consequence, the Programme lacks a real owner and strong leadership. Therefore it is recommended establishing a specialised Study Programme Committee involving also representatives of students, graduates and employers.

The graduates of the programme are highly demanded in the labour market. The employers are satisfied with their knowledge and skills. Increasing the number of graduates needs more scholarships and state funded places, systematic involvement of social partners and alumni as well as additional agreements between the university, employers and local government.

V. GENERAL ASSESSMENT

The study programme *Marine environment engineering* (state code – 621H17005) at Klaipeda University is given **positive** evaluation.

Study programme assessment in points by evaluation areas.

No.	Evaluation Area	Evaluation of an area in points*
1.	Programme aims and learning outcomes	3
2.	Curriculum design	2
3.	Teaching staff	3
4.	Facilities and learning resources	4
5.	Study process and students' performance assessment	2
6.	Programme management	2
	Total:	**16**

*1 (unsatisfactory) - there are essential shortcomings that must be eliminated;
2 (satisfactory) - meets the established minimum requirements, needs improvement;
3 (good) - the field develops systematically, has distinctive features;
4 (very good) - the field is exceptionally good.

Grupės vadovas:
Team leader: **Prof. dr. Olav Aarna**

Grupės nariai:
Team members: **Prof. dr. Judit Padisák**

Prof. dr. Soon-Thiam Khu

Prof. habil. dr. Arvydas Povilaitis

Ms. Lina Šleinotaitė-Budrienė

Ms. Inga Bačelytė

Vertimas iš anglų kalbos

KLAIPĖDOS UNIVERSITETO ANTROSIOS PAKOPOS STUDIJŲ PROGRAMOS *JŪROS APLINKOS INŽINERIJA* (VALSTYBINIS KODAS – 621H17005) 2016-09-23 EKSPERTINIO VERTINIMO IŠVADŲ NR. SV4-211 IŠRAŠAS

<...>

V. APIBENDRINAMASIS ĮVERTINIMAS

Klaipėdos universiteto studijų programa *Jūros aplinkos inžinerija* (valstybinis kodas – 621H17005) vertinama **teigiamai**.

Eil. Nr.	Vertinimo sritis	Srities įvertinimas, balais*
1.	Programos tikslai ir numatomi studijų rezultatai	3
2.	Programos sandara	2
3.	Personalas	3
4.	Materialieji ištekliai	4
5.	Studijų eiga ir jos vertinimas	2
6.	Programos vadyba	2
	Iš viso:	**16**

* 1 - Nepatenkinamai (yra esminių trūkumų, kuriuos būtina pašalinti)
2 - Patenkinamai (tenkina minimalius reikalavimus, reikia tobulinti)
3 - Gerai (sistemiškai plėtojama sritis, turi savitų bruožų)
4 - Labai gerai (sritis yra išskirtinė)

<...>

IV. SANTRAUKA

Klaipėdos universiteto (KU) Jūros technologijų ir gamtos mokslų fakultete vykdoma studijų programa *Jūros aplinkos inžinerija* suteikia aplinkos inžinerijos magistro laipsnį ir labiausiai yra orientuota į jūros aplinką.

Programos tikslas – parengti aplinkos inžinierius, turinčius gilių aplinkos inžinerijos srities žinių, gebančių taikyti tvariam jūros ir pakrančių plėtrai *skirtus* mokslinių tyrimų metodus, vertinti įmonių aplinkosaugos problemas, gerinti aplinkosauginį veiksmingumą ir dirbti tarptautinėje aplinkoje. Šios programos tikslas ir numatomi studijų rezultatai grindžiami profesiniais reikalavimais ir atspindi pajūrio regiono bei jūrų sektoriaus poreikius. Programos studijų rezultatai atrodo pasiekiami, tačiau jie nevisiškai atsispindi dalykų studijų rezultatuose. Dalykų turinį visų pirma reikėtų papildyti temomis apie kranto ir jūrinius procesus.

Programos sandara atitinka visus teisės aktų reikalavimus. Tačiau, siekiant išvengti studijų dalykų kartojimosi ir užtikrinti jų atitikimą pavadinimams, reikia persvarstyti kai kurių dalykų turinį. Rekomenduojama į studijų dalykus įtraukti daugiau atvejų tyrimų.

Šios studijų programos dėstytojų kvalifikacija ir struktūra atitinka teisės aktų reikalavimus ir užtikrina, kad bus įgyvendinti numatomi programos studijų rezultatai. Tačiau reikia gerinti dėstytojų pedagoginio tobulėjimo sąlygas. Nors pasiekta tam tikros pažangos didinant šios programos tarptautiškumą, pavyzdžiui, kai kurios paskaitos dėstomos anglų kalba, vis tik labai mažai dalykų dėstoma angliškai.

Patalpų ir kitų materialiųjų išteklių yra pakankamai, jie tinkamos kokybės. Studijoms (mokymui ir mokymuisi) skirta įranga yra atnaujinama ir prieinama visiems studentams. Universitetas turi gerai išvystytą praktiniam mokymui ir studijoms skirtą infrastruktūrą. Jis turi unikalų mokslinių tyrimų laivą „Mintis“, kuris gali pasitarnauti atliekant universalius (daugiatikslius) jūrinius tyrimus.

Ši programa yra patraukli įvairaus išsilavinimo studentams. Tik neaišku, kaip užpildomos stojančiųjų žinių spragos fundamentaliųjų mokslų ir inžinerijos srityje.

Pagirtina, kad jau per pirmąsias dvi studijų savaites studentai pasirenka baigiamojo darbo temą. Reikalavimai baigiamiesiems darbams ir šių darbų vertinimo kriterijai yra aiškus ir viešai skelbiami. Baigiamųjų darbų temos yra šiuolaikinės, bet turėtų būti įvairesnės ir labiau orientuotos į aplinkos inžinerijos problemų sprendimą.

Daugelio absolventų profesinė veikla tenkina šios programos teikėjų lūkesčius. Tačiau į programos vadybą įtraukta pernelyg daug asmenų. Todėl programa neturi tikro vadovo (savininko) ir nėra tvirto vadovavimo. Taigi rekomenduojama įkurti specialų programos komitetą, į kurį būtų įtraukti ir studentų, absolventų bei darbdavių atstovai.

Šios programos absolventai turi didelę paklausą darbo rinkoje. Darbdaviai yra patenkinti jų žiniomis ir įgūdžiais. Norint padidinti absolventų skaičių, turi būti skiriama daugiau stipendijų ir valstybės finansuojamų vietų, į universiteto veiklą turi būti nuolat įtraukiami socialiniai partneriai ir alumnai, sudaroma daugiau susitarimų tarp universiteto, darbdavių ir vietos valdžios.

<…>

III. REKOMENDACIJOS

1. Stiprinti studijų programos *Jūros aplinkos inžinerija* identitetą aiškiai apibrėžiant, kam ji priklauso ir kas jai vadovauja (Studijų programos komitetas, į kurio sudėtį įeina dar ir darbdaviai, studentai bei absolventai), kokiai rinkai ji skirta, ir užtikrinti tvirtą vadovavimą bei lyderystę.
2. Labiau orientuoti šią programą į inžineriją.

3. Į studijų dalykus įtraukti daugiau atvejų tyrimų, juose daugiau nagrinėti ES Vandens direktyvos ir kitų direktyvų vaidmenį, poveikio aplinkai vertinimą ir tvarų jūros aplinkos naudojimą bei apsaugą.
4. Įgyvendinti priemones, skirtas padidinti absolventų skaičių.
5. Mokyti dėstytojus geriau suprasti ir įgyvendinti darnaus išdėstymo metodą (*constructive alignment approach*) – ryšį tarp studijų programos tikslo, numatomų studijų rezultatų, mokymo ir mokymosi ir studentų vertinimo.
6. Didinti dėstytojų kalbinius, ypač anglų kalbos kaip darbinės kalbos, vartojimo įgūdžius siekiant sustiprinti mokslinių tyrimų veiklą, tarptautinį bendradarbiavimą ir judumą.
7. Apsvarstyti galimybę kviestis daugiau dėstytojų iš užsienio ir regioninių organizacijų.
8. Gerinti studentų užsienio kalbų žinias, ypač siūlant dalykus anglų kalba.
9. Gerinti savianalizės proceso kokybę paverčiant jį reguliariu ir kritiškai analitiniu.

<...>

2.7. Išskirtinės kokybės pavyzdžiai

Pasirengimo baigiamajam darbui procesas prasideda jau magistrantūros studijų pradžioje, o tai labiau skatina studentus atsakingai studijuoti.

<...>

Paslaugos teikėjas patvirtina, jog yra susipažinęs su Lietuvos Respublikos baudžiamojo kodekso 235 straipsnio, numatančio atsakomybę už melagingą ar žinomai neteisingai atliktą vertimą, reikalavimais.

Vertėjos rekvizitai (vardas, pavardė, parašas)