



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

**KLAIPĖDOS UNIVERSITETO**  
***APLINKOS INŽINERIJOS PROGRAMOS (612H17004)***  
**VERTINIMO IŠVADOS**

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**EVALUATION REPORT**  
**OF *ENVIROMENTAL ENGINEERING (612H17004)***  
**STUDY PROGRAMME**  
**at KLAIPEDA UNIVERSITY**

Grupės vadovas:  
Team Leader:

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Išvados parengtos anglų kalba  
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## DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	<i>Aplinkos inžinerija</i>
Valstybinis kodas	<b>612H17004</b>
Studijų sritis	<b>Technologijos mokslai</b>
Studijų kryptis	<b>Bendroji inžinerija</b>
Studijų programos rūšis	<b>Universitetinės</b>
Studijų pakopa	<b>Pirmoji</b>
Studijų forma (trukmė metais)	<b>Nuolatinė (4 metai)</b>
Studijų programos apimtis kreditais	<b>240</b>
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	<b>Aplinkos inžinerijos bakalauras</b>
Studijų programos įregistravimo data	<b>1997-05-19 Nr. 565</b>

## INFORMATION ON ASSESSED STUDY PROGRAMME

Name of the study programme	<i>Environmental Engineering</i>
State code	<b>612H17004</b>
Study area	<b>Technological Sciences</b>
Study field	<b>General Engineering</b>
Kind of the study programme	<b>University studies</b>
Level of studies	<b>First</b>
Study mode (length in years)	<b>Full-time (4 years)</b>
Scope of the study programme in credits	<b>240</b>
Degree and (or) professional qualifications awarded	<b>Bachelor of Environmental Engineering</b>
Date of registration of the study programme	<b>1997-05-19 Nr. 565</b>

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The Centre for Quality Assessment in Higher Education

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## I. INTRODUCTION

The external assessment procedures of the study programme were initiated by the Centre for Quality Assessment in Higher Education in Lithuania nominating the external assessment peer group of Prof. Petras Punys (Lithuania – Chairman), Prof. Silke Ursula Wieprecht (Germany), Dr. Sarma Valtere (Latvia), M.Sc. Kęstutis Skrupskelis (Lithuania).

The basis for the evaluation report is the written Self-Assessment Report (SAR), its annexes and the site visit of the experts on 13<sup>th</sup> September 2012. During this visit the experts reviewed the organisation of the programme, the way in which the curriculum had been designed, the way the study quality was being assured, the qualification of the staff, facilities and learning resources, study process, students assessment and programme management.

The study programme of Environmental Engineering (the first study cycle) is tutored by the Department of Technological Processes of the Klaipeda University (KU) Faculty of Marine Engineering (FME), hereafter called the Department. The teaching staff of Mechanical, Informatics, Electro Technical and Ship Engineering Departments of the FME, Ecology and Biology Departments of the Faculty of Natural Sciences and Mathematics as well as other faculties and branches of KU take part in the realization of the programme.

## II. PROGRAMME ANALYSIS

### *1. Programme aims and learning outcomes*

The study programme aims and outcomes are ambitious but quite well defined. They are based on academic and professional requirements and public needs. This is proven by the fact that more than 50% of the students have the possibility to get a job according their specialization even before they graduated. This verifies quite well that the programme aims and learning outcomes are consistent with the level of qualifications offered.

The name of the Bachelor's programme "Environmental Engineering" fits well with the learning outcomes. However, the statement in the Self Assessment Report (SAR) about the aim to educate engineers and researchers who are capable of solving "regional" problems in the Baltic Sea and the ocean should be revisited seriously. Furthermore the aim of forming "researchers" on a Bachelor's level seems to be too ambitious for an undergraduate level.

The name of the programme is "Environmental Engineering". Most subjects offered are natural science oriented. This education in basic knowledge is very important for the understanding of the more advanced subjects building on this background. Nevertheless, it would increase the attractiveness of the Bachelor's programme if there were some more subjects with closer connection to engineering.

## ***2. Curriculum design***

The curriculum design meets the legal requirements, modules are spread evenly comparing basics, theoretical and practical engineering subjects.

As the Bachelor's programme focuses on "Engineering", the balance between natural science topics and engineering subjects should be revisited. E.g. the chemical related fundamental courses seem (in total 5 subjects with a volume from 5 to 8 credits, that makes all together a total volume of 38 credits) to be too many. Such a set of chemical subjects could be even appropriate for specialists in Chemistry or Chemical Engineering.

Additionally it is recommended to screen the Bachelor's curriculum and align with the curriculum of the Master's programme. Some subjects in the Master's level would – with their actual content – better serve on a Bachelor's level, e.g. "Renewable Energy" or "GIS in Environment Protection".

The content and methods that are applied to achieve the intended learning outcomes are appropriate. The scope of the programme is sufficient to ensure the learning outcomes.

The content of the programme mostly reflects the latest achievements in science and technologies. Some descriptions of the subjects strongly need an update. For programmes focussing on general topics of environmental protection, toxicology and informatics as a matter of course providing Lithuanian references only is not adequate.

## ***3. Staff***

The high qualification of the teaching staff is adequate to ensure the intended learning outcomes. The legal requirements are fulfilled.

In terms of quantity the number of teaching staff is adequate. However, workload within the staff members is unevenly distributed. Depending on the competences and teaching quality the distribution of the workload should be reviewed. The ratio between student and teacher number is slightly exceeded (here it is 13 to 14; a normative number for engineering studies is 12).

The teaching staff members find good conditions for their professional development and the staff turnover is able to ensure adequate provision of the programme. Teachers are involving students to take part in research projects during student's practice or even provide them a job related to their specialization. However, students mentioned that they would like to have some basic subjects in a foreign language (in English), so teachers should take account on that.

## ***4. Facilities and learning resources***

At Klaipeda University very good premises for studies can be found. They are more than adequate in their size and quality. In addition, the teaching and learning equipment can be evaluated as excellent. The provided facilities for laboratory equipment are on the latest standard in size and quality. The chemical laboratory and other rooms are in a very good status. All

rooms, except the technological centre, are light-coloured and just renovated. This provides a very positive learning environment for students.

Students are using open-code (freeware) software and have free access to licensed software programs in computer classes. The library offers access to online publications in numerous scientific journals. Actually, this is a common practice for all universities in the country. However, there is a lack of hard copy environmental engineering books in the faculty library.

### ***5. Study process and student assessment***

The admission requirements for Bachelor studies are well founded. The organisation of the study process ensures provision of the programme and the achievement of the learning outcomes. Actually a course management system (CMS) which provides a virtual learning environment like e.g. „Moodle“ is just at starting position, thus the distance learning system does not yet work properly. It is highly recommended to implement a CMS in due time as a mandatory platform for all staff members.

The students are encouraged to participate in research activities (such as conferences, research programs etc.). Teachers inform students about appropriate conferences abroad and the faculty covers all students' travel and other expenses.

Students' mobility can be regarded as satisfied during the assessing period. App. less than 8% of the total number of students of the 3<sup>rd</sup> and 4<sup>th</sup> year are going abroad. However, when they are coming back to Klaipeda University the next semester they find it difficult to adapt to the studies and risk to lose state financed places. This is a kind of bottleneck in exchange programmes and needs a soft approach to reintegrate student into the study programme.

The assessment system of students' performance is clear, adequate and publicly available.

Professional activities of graduates meet the programme providers' expectations.

### ***6. Programme management***

The responsibilities for decisions and the monitoring of the implementation of the programme are clearly allocated. The evaluation of the programme management is based on regularly collected and analysed data. The results are discussed internally in respective meetings of the faculty. Outcomes of internal (mostly based on teachers' and students' evaluation) and external evaluations (employers) are used for the improvement of the programme. Stakeholders take part in the process of improvement of the study process; internal quality assurance measures are effective too.

There is a close exchange between stakeholders and the persons responsible for the programme on an informal basis. Employers are satisfied with the level of knowledge of undergraduates. Nevertheless, the stakeholders express their requirement of good language skills of the Bachelors. In addition, a need in improving their soft skills, e.g. teamwork, presentations, being proactive, etc. is manifested.

### III. RECOMMENDATIONS

1. Reduce subjects in natural science, e.g. chemical topics to the advantage of engineering subjects.
2. Put more focus on international not regional environmental problems
3. Motivate students to increase their soft skills (team work, being proactive, language skills, etc.)
4. Update descriptions of study program (subjects/modules)
5. Soft reintegration of the students coming back from Erasmus mobility programme into the studies should be taken into account.

### IV. SUMMARY

Study programme aims and outcomes are ambitious, but quite well defined. They are based on academic and professional requirements and public needs, so student are “saleable” on the labour market. The content of the programme reflects the latest achievements in science and technologies, but the descriptions of programs need an update.

The name of the Bachelor’s programme “Environmental Engineering” fits well with the learning outcomes. However, the statement in the Self Assessment Report (SAR) about the aim to educate engineers who are capable of solving “regional” problems in the Baltic Sea and the ocean should be revisited.

As the Bachelor’s programme focuses on “Engineering”, the balance between natural science topics and engineering subjects should be reviewed.

High qualification of teaching staff is adequate to ensure the learning outcomes and involving students to research programs. The amazing premises for studies are adequate in their size and quality. This is also applicable for teaching and learning equipment. Klaipeda University has adequate arrangements for student’s practice.

Actually a course management system (CMS) which provides a virtual learning environment like e.g. „Moodle“ is just at starting position, thus the distance learning system does not yet work properly. It is highly recommended to implement a CMS in due time as a mandatory platform for all staff members.

Students are involved in evaluation of programme management. The evaluation and improvement of the programme is based on regularly collected data from teachers, students and stakeholders.

Soft reintegration of the students coming back from Erasmus mobility programme into the programme studies should be taken into account.

## V. GENERAL ASSESSMENT

The study programme *Environmental Engineering* (state code – 612H17004) at Klaipėda University is given **positive** evaluation.

*Study programme assessment in points by fields of assessment.*

No.	Evaluation Area	Evaluation Area in Points*
1.	Programme aims and learning outcomes	3
2.	Curriculum design	3
3.	Staff	3
4.	Material resources	3
5.	Study process and assessment (student admission, study process student support, achievement assessment)	3
6.	Programme management (programme administration, internal quality assurance)	3
	<b>Total:</b>	<b>18</b>

\*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.

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