CENTRE FOR QUALITY ASSESSMENT IN HIGHER EDUCATION

OVERVIEW REPORT FOR ENVIRONMENTAL ENGINEERING STUDY FIELD

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I. INTRODUCTION

This report is based on the external quality evaluation of the Environmental Engineering field study of in Lithuanian Higher Education Institutions*:* at *Kaunas University of Technology, Vilnius Gediminas Technical University, at Vytautas Magnus University, at Kauno Miškų and Aplinkos Inžinerijos Kolegija, at Utenos Kolegija and at Vilniaus Kolegija.*

The external evaluations were organised by the Lithuanian Centre for Quality Assessment in Higher Education (SKVC).

Comprehensive external evaluation reports including strengths and weaknesses and concluding with some recommendations were prepared for Environmental Engineering field study in each evaluated Higher education institution (separately for first and second cycle) and included evaluation marks. This overview focuses on the main findings of the external evaluation of the Environmental Engineering field study from a general point of view.

Based on the findings of Environmental Engineering field of study evaluation, expert panel have come to a decision to give positive evaluation to HEIs: Vilnius Gediminas Technical University, Vytautas Magnus University, Kauno Miškų and Aplinkos Inžinerijos Kolegija, Utenos Kolegija and Vilniaus Kolegija *first cycle); Kaunas University of Technology, Vilnius Gediminas Technical University, Vytautas Magnus University second cycle.*

On the basis of external evaluation report of the study field SKVC takes a decision to accredit Environmental Engineering field of study at Vilnius Gediminas Technical University, Vytautas Magnus University first and second cycle, Kaunas University of Technology second cycle, Kauno Miškų and Aplinkos Inžinerijos Kolegija and Utenos Kolegija first cycle for 7 years, and Vilniaus Kolegija first cycle for 3 years.

II. STUDY FIELD OVERVIEW BY EVALUATION AREAS

1. INTENDED AND ACHIEVED LEARNING OUTCOMES AND CURRICULUM

In general the study programs are aligned with society's needs and the national labour market.

Some study programmes are quite innovative and incorporate elements of advanced technologies, circular and bio-economy, resource conservation and recovery; organisation and implementation of environmental research; digital technology and sensors, occupational safety etc..

All the study programs are aligned with the values of the different universities and aimed at improving the quality of human life and promoting sustainable development.

In general, the syllabi allows the students to gain knowledge, understanding and skills necessary to achieve the aims of the study programs. The curricula of the study programs and the descriptions of individual modules are continuously updated, keeping them aligned with the latest development of the technology and to respond to the students feedback.

All the HEI evaluated allow to personalised (at least partially) the programme of study.

2. LINKS BETWEEN SCIENCE (ART) AND STUDIES

The level of scientific activities implemented by the HEI for the field of Environmental Engineering is less consistent. In general the scientific activities are dominated by few individuals on HEI. The majority of staff has a very limited involvement in scientific activities partially due to the fact that they do not hold adequate qualification (e.g. PhD degree).

The involvement of students in scientific activity and applied science is mainly during the final thesis or during internship to external partners.

Scientific publications remain limited and often at national level. This is particularly problematic for those institutions with no or very limited number of PhD students.

International collaboration and mobility of staff and students is still modest but with clear signs of improvement over the years.

3. STUDENT ADMISSION AND SUPPORT

The recruitment of students to the Environmental Engineering study field is the most common problem that all the HEI assessed are facing. This despite the general consensus in the young population of the need to solve the current climate crisis and the awareness of environmental issues. In addition, there is a strong demand from employers of graduates.

Some of the study programmes (especially in colleges) have a light touch in engineering and more focused on gardening, landscaping.

The student selection and admission criteria and process is adequate and fair across all universities assessed. All the HEI allow the recognition of foreign qualifications, partial studies and prior non-formal and informal learning.

Student mobility is very limited and basically not existing in colleges (this also due to the fact that students often have a part-time job).

4. TEACHING AND LEARNING, STUDENT PERFORMANCE AND GRADUATE EMPLOYMENT

The study forms and methods are in general adequate and there is good support for students during the study process as they all have full jobs.

Teaching and learning methods are generally quite traditional (in particular for colleges). There are a variety of assessments approaches designed to encourage students to be active and engaged during the entire study programme. The assessment methods are selected according to the outcomes to be achieved, their level of complexity.

All HEI have procedures to monitor the progress and learning outcome. Students feedback is also collected and used to improve single modules and if required the entire study programme. The support for students with special needs is adequate although some

universities do not have students that require special needs (or students do not disclose such conditions).

The employability of students is generally very high. The employers are also satisfied with the quality of the training and level of competence of the graduates.

There are some concerns on the evaluation of the final thesis since a large fraction of the works have been evaluated to the maximum scores (in particular thesis carried out in collaboration with external partners). This might be due to the willingness of pleasing collaborators and potential partners but it does not do any good to students. First, it does not seem a fair way to assess student works and second it does not allow to identify excellence.

5. TEACHING STAFF

The teaching staff is competent and very approachable. In general there is a strong consensus on the quality of teaching from students.

Not all the teaching staff hold a PhD qualification in particular for colleges.

There are very few students per teaching staff (as low as 2 students per staff) questioning the sustainability of the study programmes.

The universities organise didactic competence development for the teaching staff but the participation on such training activities is modest. The scientific competences are more actively developed, in particular through the dissemination of research results at international conferences.

The number of visiting lecturers and researchers from abroad is too modest to make an impact on the quality of the study programme. Communication skills in English still need to be developed in particular in colleges.

6. LEARNING FACILITIES AND RESOURCES

Facilities and information resources available for teaching and research activities and students are adequate in all the evaluated HEI. Sharing research equipment between HEI is a good practice in particular in the presence of a limited number of students.

The IT infrastructure of the HEI seems adequate and able to cope with remote accessing of resources during the COVID lockdown period. Some software seems to be licences using individual licence systems while a campus wide network licences often allow a substantial reduction of costs.

7. STUDY QUALITY MANAGEMENT AND PUBLIC INFORMATION

In all the HEI evaluated there are adequate and well-structured internal quality assurance procedures. There are also adequate procedures for the collection, use and publication of information on studies, their evaluation and improvement processes and outcomes.

Student feedback questionnaires have quite a low response rate. Online automated survey is adopted by VILNIUS TECH to improve the response rate and quality of the feedback. However, It is not always clear how some other HEI handle the complaints.

III. EXAMPLES OF EXCELLENCE

KAUNAS UNIVERSITY OF TECHNOLOGY signed in 2015 an agreement with the University of Bologna in 2015 for a dual doctoral degree. University of Bologna is the oldest university in the world and one of the most prestigious universities in Europe.

Such agreement allows the mobility of PhD students, fosters scientific collaboration and best practice exchange between the institutes.

IV. RECOMMENDATIONS

MAIN STRATEGIC RECOMMENDATIONS FOR THE IMPROVEMENT IN ENVIRONMENTAL ENGINEERING STUDY FIELD

Strategic recommendations at institutional level (for Higher Education Institutions):

There are some concerns regarding the marking criteria of final dissertations. There is a large proportion of the works that have obtained the maximum marks, in particular for the works carried on in collaboration with external partners. Such practice makes it very challenging to recognise excellence.

Most of the HEI have a large portion of senior staff very close to retirement. There is no evidence of a clear recruiting strategy to attract and form good researchers and future leaders.

Strategic recommendations at national level (for the Ministry of Education and Science):

There are several examples where the teaching staff are working for more than 1FET. Although this practice allows teachers to increase their salary, it does not seem compatible with quality since teachers might not have enough time to dedicate to personal development and involvement in research. This in turn affects the quality of teaching and support for students.

There is a very limited number of PhD students at HEI. This is a major problem since PhD students are essential for increasing research output, for contributing to research-led teaching and for engaging Bachelor and Master students in research activities.

Increasing outreach activities, promoting targeting campaigns and increasing substantially the number of students from abroad are required to reverse the trend of the drastic reduction of the number of students admitted to the study programs although there is evidence of a strong demand from industry and public sector.