



# OVERVIEW REPORT FOR STUDY FIELD PHYSICAL SCIENCES, PHYSICAL GEOGRAPHY

## 2017 of Evaluation

### INTRODUCTION

This report is based on the external quality evaluation of the following study programmes in the study field of Physical Sciences (Physical Geography) in Lithuanian Higher Education Institutions: at Klaipeda University – Hydrology and Oceanography bachelor study program, Marine Hydrology master study program; Vilnius University – bachelor study programs Meteorology and Hydrology, Geography, master study programs Hydrometeorology, Cartography; Vilnius university of educational sciences master study program Educational Science of Geography.

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

The external evaluations were performed according to the evaluation areas and criteria: (1) Programme aims and learning outcomes, (2) Curriculum design, (3) Teaching staff, (4) Facilities and learning resources, (5) Study process and students' performance assessment, and (6) Programme management.

Comprehensive external evaluation reports including strengths and weaknesses and concluding with some recommendations were prepared for each evaluated programme and included evaluation marks. This overview focuses on the main findings of the external evaluation of the study field of Physical Sciences (Physical Geography) from a general point of view.

All programmes received *positive* evaluation.

### OVERWIEV BY EVALUATION AREAS

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

The graduates of the study programs of the study field of Physical Sciences (Physical Geography) evidently are needed of national labour market in ministries and other state authorities of Lithuania. In general the study program aims and learning outcomes of the study programs under evaluation well fit to the position KU, VU in the national higher education space. At the development of the program content and definition of the learning outcomes of importance is the communication between the programme management and the stakeholders: communication is operated in an informal manner, however seems to be efficient. The program aims and learning outcomes are publicly accessible and described in details. Specificity of the programme lies in the strong education in natural sciences at the bachelor program level (chemistry, physics, mathematics, geography, geology, environmental aspects) that enables the students to meet requirements of local labour market and enable further education at MSc level. Further, many study topics related to physical geography are of relevance in respect to qualification obtained (geography, meteorology, hydrology, oceanography and others). In the curricula significant attention is paid to information

technologies relevant to study topics (GIS, statistics, etc). Also study courses dedicated to general issues are included and they well balance the study program (courses like as environmental law etc.). Of importance is practical training, highly appreciated by students. The programme aims and learning outcomes are well defined and they are elaborated to reach the balance in respect to basic study subjects and subjects providing skills needed to be able to enter labour market already after graduation of the study program. The knowledge provided by the programme in general is in accordance with the content of study programmes in physical geography directions in other EU universities. The aims of the programme are based on still existing lack of specialists with general knowledge and skills in physical geography and related fields, including ecology and environmental management, able to fill vacancies in labour market. The obtained knowledge and skills ensures need in knowledge to find employment in regional and national labour market. As a positive aspect can be considered orientation towards national needs as well as the needs of graduates in the Baltic Sea region countries.

Content of learning outcomes of the programme largely proves that the graduates will acquire competencies necessary for being professional in physical geography, especially in hydrology and oceanography and the BSc programme sufficiently prepares students to continue their studies or continue career in research. The implementation of learning outcomes support practical training – placements in enterprises, state institutions, institutes.

The learning outcomes in general are sufficiently reflected and correlate with the programme content with those of the subject level.

## ***2.2. Curriculum design***

The content of the studies complies with national legal acts concerning: a) Number of subjects per semester; b) Study volume expressed in credit points; c) Structure and approaches of examination.

The curriculum design is based on a multidisciplinary approach which involves a combination of physical sciences, specialisation, intensive training and development of generic skills. The programmes ensure graduate competences and understanding as well as a capability to work with the complex issues of physical geography. For most of the study programs the curriculum design is strongly research-oriented and most of the study courses have close research connections with thesis projects undertaken under the supervision of active researchers with both high qualifications and experience in physical geography field. Of curriculum design importance is practical education, which includes opportunities to participate in projects state authorities and resulting in the acquisition of valuable practical ‘real world’ experience.

Also important in the curriculum design are practical assignments that result in practically applicable student research projects. The study programmes consists of compulsory courses, and an abundant offer of elective courses. This approach offers high flexibility to the study programmes and ensures compliance with the changing requirements and actualities of the labour market and in science. The compulsory courses of the programme cover basic aspects of physical sciences. Optional courses are used to discuss these issues in more detail and at a higher academic level and to provide additional knowledge.

## ***2.3. Teaching staff***

The teachers’ qualification of the study programs under evaluation meets the legal requirements for Lithuania and all involved professors, associated professors and lecturers have the appropriate

competence to deliver the BSc, MSc study programs. Senior academic staff are active in the publication of study materials (textbooks, methodological publications) supporting high study quality and accessibility of basic study materials for students. Senior staff of the programme are composed from well-known scientists in Lithuania and internationally and they are members of different international and national professional associations. Academic staff actively participate in different research projects both internationally and at national level and in applied projects related to the study field. Senior programme staff have good research performance indicators, as demonstrated by the number of papers in international (Web of Science) journals and high Hirsch index *h*. Teachers actively participate in the seminars, courses, and internships as well as conferences. The research profile of the staff is good and the trend to increase research output, especially at international level, is evident.

The annual volume of the pedagogical work of a full-time teacher is relatively high. The distribution of academic load of the teachers is high, but considering the situation and traditions in Lithuania it is acceptable. The turnover of the staff can be evaluated as good thus ensuring sustainability of the programs. A further factor influencing staff performance is an effective student feedback system and regular analysis of students' surveys which demonstrate the satisfaction of the students with the work of their teachers.

Although appreciating the existing high level of research performance of the staff, further efforts to raise international research productivity should be encouraged as it will significantly increase the international and national visibility of staff, and further improve the quality of future studies. Despite the good research performance indicators of the senior staff members, for many other teachers the research activity is not so high and there is definitely the opportunity to continue their efforts in this direction. An important aspect of the staff development policy includes the preparation of the new staff members, especially early stage researchers. To support staff renewal, more efforts should be put into the training of pedagogical skills, and into support for research activities and international mobility, especially for junior staff members.

#### ***2.4. Facilities and learning resources***

The study programs under evaluation use well-equipped classrooms and a sufficient number of laboratories. Significant investments in the research and study infrastructure during last years have happened. Library stocks are sufficient for achieving intended learning outcomes, but the set of scientific journals, especially related to program area, could be improved.

In general laboratories are equipped with updated laboratory equipment, which is sufficient for study purposes – to acquire experience in using instrumental equipment, to perform scientific experimental work and to analyse the results. For study purposes and student research projects, specialised computer software packages are available.

#### ***2.5. Study process and students' performance assessment***

Student admission procedures for all study programs under evaluation are well formulated and easily available. The study programme are relatively popular, however several study programs suffer from decreasing number of students. The drop-out rate from the programs is significant and thus efficient counselling and supervision of the student learning progress is actual. The study process is well organized and, according to study plans, the workload is rationally distributed. During the study process much attention is paid to the development of abilities, skills and

competences.

Student assessment are done in accordance to the academic regulation of universities and is based on the assessment of students' knowledge and skills. Assignments of self-study possessing weighted coefficients are used for assessment of learning outcomes of each particular subject. At the student assessment of importance is their research performance and quality of thesis.

Support for students of the study programme is available through the website. At the start of their studies, students are informed about the program requirements, the self-study assignments, and the criteria for their evaluation.

## **2.6. Programme management**

All universities have adopted an internal quality assurance process. A regular quality assessment of the program is conducted following the procedure for internal quality assurance of studies as specified in the Regulations of Studies.

Three main quality elements are: a) The student surveys are regular and students' opinions are collected, to evaluate the quality of studies and the objectivity of assessments. Data has been collected over the last six years in a web-based survey system; b) The academic staff have regular meetings where all questions about program planning and development are discussed. The stakeholders (employers and social partners) concerns are considered; c) There are internal authorities at university level like as Commission for the quality Assurance of the Studies and self-assessment of teachers and faculty. Usually at the program management external advice are considered. The management seems efficient regarding the university rules adopted. Changes in the program are done on regular basis. Quality of the programs is assessed through electronic interviews and individual discussion with employers and alumni.

## **MAIN STRATEGIC RECOMMENDATIONS FOR THE IMPROVEMENT OF STUDY PROGRAMMES IN PHYSICAL GEOGRAPHY STUDY FIELD**

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

- **At development of the study programs, the study program management have to pay more attention to comparative analysis of the program content to follow contemporary trends in the field in other EU member countries.**
- **One of recently rapidly growing fields in the physical geography field includes use of IT approaches, especially in meteorology, synoptic, hydrology, but these approaches find their application also in other related branches and the study programs have to follow these trends. Further actuality is related to knowledge and skills to use modelling methods, and also in this respect to learning outcomes should be analysed and updated accordingly development in corresponding field.**
- **Significant attention should be paid to development of student competencies needed in the labour market using placements and supporting development of student initiative.**

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

- **It is important to keep running the study programs of the study field of Physical Sciences (Physical Geography)**
- **The functioning approach at national level of strict classification of study and research fields is hampering development of truly interdisciplinary research and study directions. In this respect, geography as essentially interdisciplinary study and research field is suffering. Orientation towards interdisciplinary and problem oriented research and studies could be encouraged.**
- **Further consolidation of the resources needed for research as well as for further improvement of the study quality could be suggested.**
- **Geography teacher training should be rooted in the studies of geography integrating human geography and physical geography approaches, considering also need to acquaint other specialities**
- **Efforts should be concentrated towards intensification of collaboration between public sector stakeholders, private business and academics as well as supporting entrepreneurship skills of students.**

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