

## STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

#### Vilniaus universiteto

# HIDROLOGIJOS IR METEOROLOGIJOS PROGRAMOS (612F83001)

# VERTINIMO IŠVADOS

# EVALUATION REPORT OF HYDROLOGY AND METEOROLOGY (612F83001) STUDY PROGRAMME

at Vilnius University

Grupės vadovas:

Team Leader:

Prof. Geoffrey Robinson

Grupės nariai:

Team members:

Prof. Maris Klavin

Prof. Tommi Inkinen

Prof. Jürg Luterbacher

Dr. Miglė Stančikaitė

Išvados parengtos anglų kalba Report language - English

## DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	Hidrologija ir meteorologija
Valstybinis kodas	612F83001
Studijų sritis	Fiziniai mokslai
Studijų kryptis	Gamtinė geografija
Studijų programos rūšis	Universitetinės studijos
Studijų pakopa	Pirmoji
Studijų forma (trukmė metais)	Nuolatinė (4)
Studijų programos apimtis kreditais	240 ECTS
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Geografijos bakalauras, Hidrometeorologijos bakalauras nuo 2010 m.
Studijų programos įregistravimo data	23-04-1999 Nr. 560

#### INFORMATION ON ASSESSED STUDY PROGRAMME

Name of the study programme	Hydrology and Meteorology
State code	612F83001
Study area	Physical sciences
Study field	Physical Geography
Kind of the study programme	University studies
Level of studies	First cycle
Study mode (length in years)	Full-time (4)
Volume of the study programme in credits	240 ECTS
Degree and (or) professional qualifications awarded	Bachelor of Geography, Bachelor of Hydrometeorology since 2010
Date of registration of the study programme	23-04-1999 No. 560

The Centre for Quality Assessment in Higher Education

Studijų kokybės vertinimo centras

# CONTENTS

CONTENTS	3
I. INTRODUCTION	4
II. PROGRAMME ANALYSIS	5
1. Programme aims and learning outcomes	5
2. Curriculum design	5
3. Staff	7
4. Facilities and learning resources	8
5. Study process and student assessment	9
6. Programme management	12
III. RECOMMENDATIONS	14
IV. GENERAL ASSESSMENT	15

#### I. INTRODUCTION

The external evaluation of the Bachelor study programme in *Hydrology and Meteorology* at Vilnius University (hereafter, 'the University') was initiated by the Centre for Quality Assessment in Higher Education of Lithuania nominating the international expert group (hereafter, the 'expert group' or 'assessment panel') formed by Professor Geoffrey Robinson (University of St. Andrews, Scotland – team leader), Professor Tommi Inkinen (University of Helsinki, Finland), Professor Maris Klavins (University of Latvia, Latvia), Professor Jürg Luterbacher (University of Giessen, Germany) and Dr. Miglė Stančikaitė (Institute of Geology and Geography of the Nature Research Centre, Lithuania).

The evaluation of the study programme ('the programme') made use of the following documents: Law on Research and Higher Education of the Republic of Lithuania (2009); Order on External Evaluation and Accreditation Procedure of Study Programmes (2011); Methodology for Evaluation of Higher Education Study Programmes (2010); General Requirements for Undergraduate and Integrated Studies Programmes (2010) and Geography Study Field Regulation (2004).

The basis for the evaluation of the study programme is the Self-Assessment Report (SAR), written in 2011, its annexes and the site visit of the expert group to the University on 19 October 2011. The Faculty of Natural Sciences ('the Faculty') coordinates the programme, which is delivered by staff from within the Faculty (the departments of Geography and Land Management, Hydrology and Climatology, Geology and Mineralogy, and the Cartography Centre), and from other faculties (Chemistry, Physics, Mathematics and Informatics, Economics, Philology, and Philosophy). Staff from the Department of Hydrology and Climatology (the 'Department') deliver most of the specialist training subjects and organise practical training. The site visit incorporated all required meetings with different groups: the administrative staff of the Faculty, staff responsible for preparing the self-assessment documents, academic staff, students of all years of study, graduates, and employers. The expert group inspected various support facilities and resources (classrooms, laboratories, library, computer facilities), examined students' final works, and various other materials.

After discussions and preparations of conclusions and remarks, the expert group presented introductory general conclusions of the visit to the Department's self-assessment team. The group subsequently met to discuss and agree the content of the report, which represents the members' consensual views.

It may be noted that both the Bachelor programme in *Hydrology and Meteorology* and the Master programme in *Hydrometeorology* are located in the same department within the same faculty. They share the same facilities; many staff contribute to both programmes, albeit with different loadings; administration and management are essentially the same for both programmes; and employers who met with the evaluation group related to both programmes and interacted at department and faculty levels. The site visit covered both programmes simultaneously and, inevitably, the two evaluation reports have much in common.

#### 1. Programme aims and learning outcomes

The programme aims and learning outcomes are well defined, clear and publicly accessible; they appear on the University website and in the University's fact sheet for student admissions. The main aim is to prepare specialists in hydrology and meteorology but within a wide-ranging knowledge of general geography. The expert group was pleased to note among the suite of aims a reference to educating globally-minded specialists who successfully integrate into the modern European community. The intended learning outcomes are clearly expressed in terms of what a graduate should know and be able to do as a result of following this programme.

The programme aims and learning outcomes are consistent and compatible with the type and level of studies, the qualification offered and with the name of the programme. The learning outcomes are achievable and meet the requirements of the World Meteorological Organisation for university-level graduate meteorologists and hydrologists, as well as the mission of the Lithuanian Hydrometeorological Service, which is a principal employer. Graduates' knowledge and general (transferable) skills as well as critical and analytical thinking, IT and research abilities find employment both in technical and administrative roles in divisions of the Ministry of Environment.

All students (at both bachelor and master level) expect to secure employment, although hydrologists and meteorologists are not highly paid. Students are generally able to proceed into subject-related employment after completing the programme, but graduates will find themselves in competition with higher-level graduates for the more scientific positions. Training in this bachelor-level programme is therefore aimed not only at immediate employment but also at equipping graduates to enter further studies. There are opportunities to pursue master-level studies in the Faculty in hydrometeorology, geography, cartography, and environmental studies. Graduates can also progress to management studies programmes. The bachelor-level graduates who met with the assessment panel were all following master studies programmes while also in paid employment.

#### Main strengths and weaknesses

#### Strengths

The programme's aims and outcomes are directed towards satisfying national needs for hydrologists and meteorologists.

Graduates are equipped to proceed to master studies in a variety of related fields.

The formulations of learning outcomes are clear and achievable.

#### 2. Curriculum design

The curriculum comprises mandatory, optional and free choice subjects in a design that meets all legal requirements. From 2011-2012, the structure is modular.

The study subjects are spread evenly over the four years of study. They are logically linked and avoid undue repetition of theme and content. The subjects fall into three categories: subjects of general university education, subjects of study programme basics, and subjects of specialized education. The content of the subjects or modules is consistent with the type and level of the studies. English language courses are compulsory in the first four semesters of the programme. This is a strength in enabling students to take advantage of opportunities to study abroad, communicate with foreign students, and make better use of international scientific publications. As mentioned in the previous section, learning outcomes are mapped onto the study subjects and all possible inclusions of optional subjects combine with obligatory subjects to enable achievement of the intended learning outcomes.

The programme has strengths in theoretical subjects and professional practice. There are some weaknesses in the development of modelling, but the growing inclusion of work in mathematics and physics is a positive step. This is not just to satisfy a need for more theory. The employers' opinions were that the students have a good theoretical knowledge but that they were not always able to apply this knowledge well enough and would need help in the working environment. This applies to mathematical and statistical skills, and also to work with model output data. Employers expressed a wish that graduates would have more experience in applying theory to practical applications. Perhaps the adoption of the new modular structure will provide opportunities to integrate multidisciplinary examples with theoretical constructs.

Practical training is greatly valued by staff, students, graduates and employers, acknowledged by recent increases in practical teaching. The summer field practice gains special mention but all groups consider that even more practical work would further enhance the programme. There are rapid advancements in elements such as measuring equipment, weather-model outputs, data analysis and visualisation tools. Keeping pace with these is as much a part of ensuring the programme reflects the latest achievements in the relevant sciences and technology as is knowledge imparted in lectures. Other modern issues, such as EU issues, feature inadequately in the programme. There are EU directives, for example a flood directive, that cry out for attention, especially in relation to comparing Lithuanian methods with the directive; they do not appear in the curriculum. Attention could usefully be paid to both theoretical and practical aspects of the programme in this regard.

Other suggestions for improving the curriculum are an increase in the teaching input from international visitors and from potential employers as guest lecturers.

#### Main strengths and weaknesses

#### Strengths

Responsiveness of programme planning, especially in increasing practical teaching to familiarise students with rapid advances in the study field.

Compulsory English language courses.

#### Weaknesses

New research fields and EU issues feature insufficiently in the programme.

#### 3. Staff

The staff who deliver the programme meet all legal requirements. Most have a long experience of teaching and research, all satisfy more than the minimum requirements. Collectively their numbers are more than adequate and they are well qualified to ensure the intended learning outcomes. In total, 40 academic staff contribute to the programme. Most specialist training in the subject field is the responsibility of staff in the Department. Staff from other faculties teach appropriate study area basics and general education subjects. The persons involved hold at least a PhD degree, with the exception of teachers of English language courses, and they are qualified to ensure the intended learning outcomes. The staff who met with the expert group impressed by their motivation and enthusiasm to educate the students in their study field. They are generally satisfied with their environment and according to the students, the teachers devote a significant time to the supervision and guidance of their thesis and provide them with up-to-date literature from their own personal scientific holdings.

During the reporting period 2006-2010, the holders of eight teaching posts have changed. These changes were occasioned by retirements, new appointments and replacing subjects in the curriculum. The expert group was not made aware of any issues related to staff turnover. What was disclosed, however, is that the financing of the programme, whereby staff from other faculties are paid by the Faculty of Natural Sciences for their contributions to the programme. This has led to problems in cooperation between the faculties that are hoped will be solved by the new modular arrangements.

A survey of students clearly indicated that about half are not fully satisfied with the teaching quality of the study subjects. The teachers are aware of this fact and, in keeping with their high motivation, are developing and adopting different teaching methods. The University provides staff-development opportunities and staff, who are determined to improve their teaching methods, will attend relevant courses.

The staff discuss scientific results with staff from other universities, and they attend conferences and courses. Some staff members are active in collaborative projects mainly in Lithuania, but on the whole the level of scientific activity among the staff is modest. Whatever means can be employed should be used to encourage scientific activity amongst the staff and raise the research profile of the Department. A major issue is the relative lack of publications in international peer-reviewed journals. International visibility of their research activities, participation in international interdisciplinary programmes, and more scientific peer-reviewed publications should be envisaged for the future. This in term would impact on the teaching activities, supporting the inclusion of more recent scientific and technological advances in the curriculum. In turn, this would give students new opportunities to contribute to current research themes.

#### Main strengths and weaknesses

#### Strengths

The programme is in the hands of enthusiastic and well-qualified staff, which supports the quality of the studies and enables the achievement of the intended learning outcomes.

The staff seem to be largely competent in the subjects they teach, actively participating in projects directly related to the study programme content, and willing to participate in staff-development courses to improve teaching methods.

#### Weaknesses

The staff in general have a poor record of research activities: projects are mainly local or national; published research results are only in national journals; and even at that level, the record is modest.

ADDENDUM. Information provided by the University upon receipt of the Evaluation Report indicates that over the period from 2006, the eight members of the Department staff have collectively published, mainly as joint authors, 23 papers in ISI listed journals and nine other publications in the international press. This is not a high activity rate by European standards but if this information had been available at the time of review, the wording of the noted weakness would have been less severe. Recommendation 1 at the end of the report remains applicable, even though progress has already been made in the recommended direction.

The University also provided more information on staff participation in international projects but that has already been acknowledged as strength.

#### 4. Facilities and learning resources

Most lectures and practical classes are held in four specially designed facilities in the Department. All classrooms are equipped with the necessary learning technology, all of which was obtained during the period 2006-2010. The meteorology laboratory has been renovated and the main auditorium and hydrometeorological laboratory are being refurbished. The programme also uses other classrooms elsewhere in the Faculty and in other faculties. In general, the premises for studies are adequate in both size and quality.

The provision of laboratory equipment is not, as yet, adequate for the studies. There are still inadequacies in the provision of computer-based workplaces where students are able to use their own laptop computers. The current upgrading of facilities is addressing some of the equipment weaknesses, both of hardware and software, but the number of computers provided for student use will remain low. The expert group saw the first tranche of technical hardware that has arrived as part of the current procurement exercise using European and Lithuanian national funding. They can appreciate the potential improvements, especially for meteorological studies. This is a first step for a better and more appropriate education of students in the subject field. Additional funding will be needed, however, if maintenance, periodic replacement and consumable items are to be adequately provided for.

The Faculty library has 42 workplaces, three of them computer based, a provision that is hardly adequate to provide for all the Faculty's programmes. The library holds about 95 per cent of the subject literature and about 75 per cent of the general science literature used in the programme. There are other resources in the University library but in general, library resources for the programme are generally poor, in comparison with standards expected and achieved in comparable European institutions. The literature for the courses is mainly in the Lithuanian language, the programme's principal language, and indeed the language used in most employment situations. (As yet, students are not benefiting from the programme aim of enabling graduates to integrate into the modern European community.) There are few up-to-date texts

available in Lithuanian; staff prepare and provide supplementary materials on the website. Internet data bases represent a growing resource for learning. There are few books in the English language and limited student access to the scientific research literature available on line. Due to the fast development of the research fields, a regular and broad update of scientific literature and study books, and access to peer-reviewed international journals is crucial for the education of the students. From the discussions with the teachers and the students, the wish for more literature was evident. They are fully aware of the financial restrictions and pleased that some strengthening of library resources does feature in the current procurement plans.

Arrangements for students' practice are good. Field training is compulsory. Topographical survey techniques are practised locally. Hydrological and meteorological field training takes place in the fourth semester at a University training base in Šližiškiai (Molėtai district, about 70 km away from Vilnius). The base is well equipped to accommodate 30 students with their teachers and enable good fieldwork training over a period of four weeks. Field equipment is annually upgraded as an ongoing annual budgetary requirement of the programme. In addition, an automatic training meteorological station is being installed in the University grounds, near to the Faculty, as part of the current procurement exercise. The expert group saw this station part way through its construction. Students also have opportunities for practice placements in a variety of potential employer organisations in several locations. Placements are available in the seventh and eighth semesters. The students are provided with a workplace, supervisor, necessary equipment and support from specialists in the practice field. The arrangements are individually negotiated with the teacher responsible for the subject in which the practice is taken.

#### Main strengths and weaknesses

#### Strengths

Secured funding for a current procurement process that is expected to strengthen teaching and learning equipment in the very near future.

The arrangements for students' practice.

#### Weaknesses

Current funding for maintenance and regular replacement of equipment is inadequate.

Literature resources to support teaching and research in the rapidly developing subject field are poor.

#### 5. Study process and student assessment

Admission requirements are nationally specified and centrally administered by the University. The requirements in terms of points scores and the allocation of state-funded places to a subject field have not particularly favoured this programme. The total demand for entry to the programme has fallen significantly over the 2006-2010 period, mainly through the lack of applicants for non state-funded places, although the number of applicants selecting the programme as their first priority almost doubled over the same period. Between 25 and 34 students are admitted each year, but only 15-24 graduate after four years. Some re-enrol to complete after five years. The dropout rate is of concern, albeit that many of the reasons for leaving the programme are personal and beyond the remedial abilities of the programme

managers. A major contributing cause is that the programme does not match the students' prior expectations. Knowledge of mathematics and other sciences is often inadequate, the points score formula for school leavers allowing students with poor performances in those subjects nevertheless to qualify for entry. This accounts for students choosing other programmes after the first year.

Many of the protocols involved in best fitting the study-field priorities of prospective students with the allocation of funded places are outside the scope of action by the Department. A programme of school visits and promotional events to raise the profile of the study field in schools, by publicity campaigns about the nature of the study programme and employment opportunities, and perhaps mobilising some satisfied graduates in the campaigns, could disseminate accurate information about what the programme requires of students and what it delivers. This could help to attract more students whose expectations are better matched to the actuality of what they experience in the programme and are therefore more motivated to pursue their studies. It could go some considerable way to improving the proportion of students who respond positively to the question of satisfaction with the teaching in the programs (tabulated in the SAR as about 50 per cent not satisfied!) To some extent, such a programme is already carried out in Vilnius, but about two-thirds of accepted students come from other parts of Lithuania. The expert group would also encourage the Department to consider implementing a systematic method of more accurately ascertaining the reasons for non-completion, at the same time preserving individual confidentialities. The group recognises the inherent problems of establishing such a system but without definitive information the troublesome dropout rate cannot be effectively tackled.

The organisation of the study process ensures an adequate provision of the programme and the achievement of the learning outcomes. Classes are evenly distributed during a week and over a semester. They are well balanced between lectures, seminars, and practical sessions. Together these occupy about 54 per cent of the programme's study time; independent studies at 46 per cent complete the programme. The programme involves a large number of staff from several faculties, with classes held in a variety of locations. The organising task, performed by the Department, is considerable; it is a notable feat to be able to ensure an adequate provision of the programme and the achievement of intended learning outcomes. Students are provided with all necessary information about classes, aims and outcomes, subject requirements and the scheduling of assessments, learning practices and study papers, including the final thesis. The information is provided in a variety of ways and in a timely fashion. The main information source is the website. The students who met with the expert group acknowledged they are kept well informed and are content that what is delivered in the programme is what the information leads them to expect. Their workload is quite high but they offered no adverse comments about these arrangements.

Students carry out research as a compulsory part of the programme. They are also encouraged to participate both in scientific work outside the programme and in social activities. A few students are able to work with staff members on their research projects. Many students are members of the very active Student Scientific Society of Natural Sciences. It organises seminars, debates, competitions, expeditions; shows self-produced documentaries and popular science films; and organises scientific sightseeing tours. The Society helps its members to deepen their knowledge in courses, seminars, conferences and preparing research papers; it also arranges students'

interviews, develops academic links with schools and creates a network of young scientists. The Faculty organises a wide range of events for students to be able to meet and interact with teachers and social partners; some of the events also involve staff from other universities, in Lithuania and abroad, and graduates from the programme. All these activities heighten students' motivation and help to promote the excellent relations between staff and students that greatly impressed the expert group. They lie at the heart of the academic and social support the Department provides.

The University provides financial support in a number of ways. Scholarships reward certain academic successes or are directed to the social support of students with disabilities or other handicaps to study, such as serious illness or bereavement. Counselling and advisory services are available to help and guide students experiencing study difficulties. Despite all of these measures, economic and personal circumstances still lead to most of the student withdrawals referred to above.

Students have opportunities to participate in the ERASMUS exchange (student mobility) programme. At bachelor level this is limited to students with good results and facility in a foreign language; they can spend six months at a chosen West European university. No students in the Hydrology and Meteorology programme took part in the mobility programme over the reporting period, the main reason being poor academic grades compared with competing students from other programmes. There was only one incoming student over the same period. The students who met with the assessment panel expressed interest in the ERASMUS programme but claimed to have been unsuccessful applicants.

The assessment of knowledge and achievement is by a variety of continuous, intermediate and final examination methods. They take mostly traditional written forms. University regulations govern eligibility to take a subject examination and if necessary retake it. Study subject documentation informs students about the assessment methods to be used. The assessment system appears to be well organised and equitable; it is clear, adequate and publicly available.

Specific procedures govern the preparation and submission of the final thesis. Students are well supervised by their teachers. The supervision system, involving close contact between supervisor and student, would appear to be a formative one. All theses receive a high grading, although in the view of the expert group, the general methodological and analytical standards of the theses are quite low. The majority are descriptive with rather simple graphical illustrations. The analysis, interpretation and discussion of results are largely lacking.

The main employers of graduates from the programme are divisions of the Lithuanian Ministry of Environment, especially the Hydrometeorology service. On average the service recruits four or five graduates each year. This would appear to be a stable demand. Other employers whose activities include weather and water monitoring and climate change take a few graduates every year; their demands would appear to be increasing. Here are included such institutions as the Environmental Protection Agency, Vilnius airport, the Marine Research Centre, water companies, energy companies and various non-governmental agencies. The programme aims to prepare some 10-12 specialists each year. Graduates also seem to have the training and general skills to gain employment in the modern graduate labour market. Well over half of the graduates from the programme over the period 2006-2010 either proceeded to graduate studies or secured employment in the related professions. Employers and graduates all expressed appreciation of

the knowledge and skills that students acquired during the programme. Hence, the professional activities of the majority of graduates meet the programme providers' expectations.

#### Main strengths and weaknesses

#### Strengths

A wide range of well-integrated studies.

The enthusiasm of a well-qualified staff; and appreciation by graduates of the skills they had acquired in the programme.

A wide range of academic activities promote the excellent staff-student relations that lie at the heart of the Department's academic and social support of students.

The progression of a majority of graduates into further studies or subject-related employment.

#### Weaknesses

Poor participation of students in mobility programmes.

Theses that appear to be over marked, being rewarded by high grades for works of a low standard by comparison with theses in other European institutions.

#### 6. Programme management

Operating within the regulatory framework of the State, programme management is at three levels: University, Faculty and Department. Responsibilities for internal regulation, decisions and monitoring of the implementation of the programme are clearly allocated. Operational control and direct responsibility for implementing the programme are with the Department. Here the Head, the staff and the programme committee deal variously with matters that include organisation of the study process; provision of facilities and learning resources; improvement of study quality; allocation of teaching loads; changes of curriculum, subject preparations and descriptions; relations with social partners; and confirmation of supervisors for theses and research papers. Programme management is generally effective; the exception has been the inability to secure adequate funding for the regular periodic upgrading of facilities and learning resources. That is doubtless a problem that pervades the University and it is to be hoped that the recent acquisition of European funds will improve matters. It is clear, however, that equipment purchased from external funds will need financial support in operating and maintaining it. Investments from local sources will need to be greatly improved if the external funding is to have a long-term effect on study and research quality.

The evaluation and improvement processes involve stakeholders. Students are represented on the programme committee and on the Faculty council. Social partners are also represented on the committee; they play an important advisory role there and in their contacts with staff and students in events organised by the Department. Employers and alumni who met with the assessment panel expressed their appreciation of the good relations that prevail with social partners and their ability to be heard in discussions about programme enhancements.

Internal quality assurance procedures are efficient and generally effective. All bodies involved at the various levels have clear monitoring and reporting responsibilities. The general system is based upon European Regulations for internal study quality assurance; the so-called 'Dublin descriptors' or guidelines; UK guidelines for geographical studies; and guidance from the Lithuanian Centre for Quality Assessment in Higher Education. The periodic surveys of study disciplines and teaching quality are an important part of the process. Other information is regularly gathered from teaching staff, employers and other social partners.

Analysis of regularly gathered information underpins the improvement process. Lessons learned from internal surveys lead, after due process, to programme improvements. The outcomes of an external evaluation carried out in 2001 were used to improve the programme. An internal assessment carried out in 2005 led to no changes but already, the SAR incorporates pointers to improvements that will have been prompted by the current evaluation. The use that has been made of the outcomes of earlier evaluations is evidence to the expert group of the programme management's responsiveness to the needs for change and willingness to identify and implement improvements.

#### Main strengths and weaknesses

#### Strengths

The involvement of stakeholders in the Department's programme management.

The design and operation of the internal quality assurance system to align with international standards.

The willingness to apply the results of internal and external evaluations to improve the programme.

#### III. RECOMMENDATIONS

- 1. Take whatever steps are required to raise the level of international scientific activity, research and publication and hence raise the Department's and the programme's international visibility, with the added impact of improving the programme's scientific content to include newer research fields. These could also be relevant to reviewing the standard of student theses to bring them more in line with standards elsewhere in Europe.
- 2. Make haste with the renewal and upgrading of computing, laboratory and field equipment and of learning resources.
- 3. Take steps to secure internal financial support to operate and maintain equipment purchased with the aid of external funding.
- 4. Address the significant dropout rate by widening and intensifying publicity campaigns about the nature of the study programme and employment opportunities, perhaps mobilising some satisfied graduates in the campaigns, and disseminate accurate information about what the programme requires of students and what it delivers. The aim would be to attract student intakes whose expectations are better matched to the actuality of what they experience in the programme and therefore more motivated to pursue their studies.

#### IV. GENERAL ASSESSMENT

The study programme Hydrology and Meteorology (state code – 612F83001) 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	4
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)	4
	Total:	20

<sup>\*1 (</sup>unsatisfactory) - there are essential shortcomings that must be eliminated;

Grupės vadovas:
Team Leader:
Prof. Geoffrey Robinson

Grupės nariai: Prof. Maris Klavin Team members: Prof. Tommi Inkinen

> Prof. Jürg Luterbacher Dr. Miglė Stančikaitė

<sup>2 (</sup>satisfactory) - meets the established minimum requirements, needs improvement;

<sup>3 (</sup>good) - the field develops systematically, has distinctive features;

<sup>4 (</sup>very good) - the field is exceptionally good.