



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

Vilniaus universiteto
GEOLOGIJOS PROGRAMOS (612F60001)
VERTINIMO IŠVADOS

**EVALUATION REPORT
OF *GEOLOGY (612F60001)*
STUDY PROGRAMME**
at Vilnius University

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Išvados parengtos anglų kalba
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DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	<i>Geologija</i>
Valstybinis kodas	612F60001
Studijų sritis	Fiziniai mokslai
Studijų kryptis	Geologija
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	Geologijos bakalauras
Studijų programos įregistravimo data	19-05-1997 Nr. 565

INFORMATION ON ASSESSED STUDY PROGRAMME

Name of the study programme	<i>Geology</i>
State code	612F60001
Study area	Physical sciences
Study field	Geology
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 Geology
Date of registration of the study programme	19-05-1997 Nr. 565

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I. INTRODUCTION

The external assessment of the study programme was initiated by the Centre for Quality Assessment in Higher Education of Lithuania nominating the external assessment expert group formed by Professor David Eastwood (University of Ulster, Ireland – team leader), Professor Alvar Soesoo (Tallinn University of Technology, Estonia), Professor Valdis Seglins (University of Latvia, Latvia), Dr. Gražina Skridlaitė (Vilnius Gediminas Technical University, Lithuania) and student representative Mr. Andrius Platakis (Vilnius Gediminas Technical University, Lithuania).

The evaluation of the study programme made use of the following documents: Assessment of External Study Programmes: Methodological Guidelines for Experts; Regulations for Undergraduate, Specialised Professional and Integrated Study Programmes; Description of General Requirements for Bachelor's Study Programmes; Description of Study Programme Accreditation Order.

The basis for the evaluation of the study programme (hereafter, the programme) is the Self-Assessment Report, written in 2011, its annexes and the site visit of the expert group to Vilnius University (hereafter, the University) on 8, 9 November 2011. The visit incorporated all required meetings with different groups: the administrative staff of the Faculty of Natural Science, staff responsible for preparing the self-assessment documents, teaching staff, students of all years of study, graduates, and employers. The expert group inspected various support services (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 self-assessment team. After the visit, the group met to discuss and agree the content of the report, which represents the members' consensual views.

II. PROGRAMME ANALYSIS

1. Programme aims and learning outcomes

As described in the Self-Assessment Report (SAR), the principle rationale for the programme lies in the geology job market and there is no doubt that there is a strong and expanding demand for geo-science graduates in both the Lithuanian public and private sectors; a view confirmed by employers from both sectors when interviewed by the review team. Paradoxically however, demand for the programme amongst school-leavers is relatively modest and the intake figures for the last three years have varied only between 10 and 13 entrants. The reasons for the low entry figures are varied – absence of geology teaching in schools, high admission requirements, limited programme marketing and advertising of employment opportunities – but are also concerning, especially as this is the only study programme in *Geology* in Lithuania; an issue dealt with in greater detail in the overview of first and second cycle geology provision at Vilnius University (VU) which accompanies this report.

The programme's major aim, 'to provide knowledge on the earth as a system' is clear, as are the details of the development of student skills which accompany it. The breadth of the skills range outlined in the SAR is to be welcomed and, following the review visit, can be largely confirmed in practise, although greater emphasis is necessary on the teaching of transferable skills (see section 2 below). The aims of the programme also correspond to the requirements of institutional, state and international requirements. Details of the programme are obtainable on the VU Website, but are not widely advertised beyond this.

The programme learning outcomes are clearly expressed in the SAR and are clearly designed to meet academic demands, for example 'Tuning Earth Science Reference Points', professional practise demands, such as those of the Lithuanian Geological Survey, and the employment demands of the public and private labour markets.

As detailed in the SAR, the intended learning outcomes of the programme are that a graduate will possess 'a good insight into geological processes, research methods and a holistic perception of the environment' and 'is also able to present geological research results', and the review visit confirms that these outcomes are largely achieved. The current high level of practical fieldwork, including foreign fieldwork, is especially commendable as it forms an absolutely essential component of geological studies and, even given current financial restrictions, every effort should be made to maintain this excellent level. The programme learning outcomes are consistent with the type and level of studies and the level of qualification offered.

The programme provides a sound first cycle qualification in basic and classical geology and the name of the programme, the learning outcomes, content and qualifications offered are all fully compatible with this.

Main strengths and weaknesses

This is a sound first cycle programme in basic, classical geology with a sound mix of theoretical and practical fieldwork components. The learning outcomes are broadly based and are in line with both academic, professional and employment demands. The main weakness of the programme is that the limited entry numbers give cause for real concern (see overview report).

2. Curriculum design

The programme meets Ministry of Science and Education legal requirements (ISAK 1158, 159, 1127, V501) and general university requirements covering credits and obligatory and optional study fields in general education, knowledge and study field education, knowledge.

The curriculum design is broadly based and with satisfactory progression and sequencing, commencing with general university education, followed by basic subjects of progressive complexity and leading to the gradual introduction of specialised professional education subjects.

The curriculum is dynamic, rather than static with a significant number of changes introduced by the Programme Committee since 2007, largely involving sequencing. Nonetheless, the review team noted several courses/modules, for example Facies of Sedimentary Rocks and Exploration of Mineral Resources, which were now badly dated and had changed little over a long period of time in either content, delivery or materials support (especially non-Russian textbooks/handbooks) – an issue also highlighted by students interviewed during the review visit.

The curriculum is strong in the emphasis it places on fieldwork practices (22%) and laboratory work (29%), with fieldwork at the end of semester 2 around Vilnius and in Northern Lithuania; semester 4 in Poland; and semester 6 in Norway and Finland. Despite the obvious financial strain imposed by these courses, it is strongly recommended that they be continued and with the problems associated with annual, rather than at least bi-annual, being considered.

The curriculum design of a final year bachelor's thesis is sound in theory, but appears to be variably implemented in practice, with final theses at times disappointing, especially in

terms of their superficiality and (as noted by employers) poor literacy (this issue is discussed in more detail in section 5 below).

Main strengths and weaknesses

The curriculum is broadly based, progressive and consistent with the type and level of the studies and supports the achievement of learning outcomes. The emphasis on fieldwork, and especially on foreign fieldwork, is especially laudable. Weaknesses centre on some badly outdated teaching and reference materials.

3. Staff

Programme staff is well qualified and experienced in the study field. The majority of programme staff are full-time and are supplemented by staff from other VU Departments, e.g. Chemistry, Physics, Mathematics etc., and State institutions related to geology, e.g. the Lithuanian Geological Survey, the Nature Research Centre. In all, 15 teaching staff is involved in the programme, including 6 professors or associated professors. Given current student entry numbers, this clearly produces a very low (and potentially unsustainably low) staff to student ratio.

Other than staff from other faculties or State institutions, the turnover of programme staff is moderate to low.

Research activity amongst the staff is reasonable, with a focus on Quaternary research, Silurian system research and deep-earth underground research, which leads to satisfactory publication records, especially at the national level.

Staff mobility is at best moderate, and showing worrying signs of decline with fewer staff travelling abroad, even for short periods, than five years ago. Teaching loads and lack of finance were blamed for this by staff interviewed by the review team. However, there seemed to be little appetite to engage in established programmes, such as Erasmus staff exchange, or in producing competitive research applications to generate necessary funding. No foreign academics have taught recently on the programme. No staff interviewed had taken up their 'after five years' service legal right to sabbatical time.

Staff development activity is worryingly low, especially in terms of teaching skills. No staff interviewed by the review team had participated in any teaching skills courses organised either by the Department or the university and interest in developing teaching skills appeared to be negligible, with staff apparently unaware of the demands of a shift from teacher driven provision to student centred learning. There is no system of peer evaluation of teaching, nor of annual staff evaluations.

Main strengths and weaknesses

Staff is well qualified and available in sufficient numbers to teach the programme, with a moderate to low turnover of programme staff. Almost all staff is research active at least at the national level.

The staff to student ratio is a cause for significant concern (see overview report). Staff mobility is limited, especially at the international level, and shows worrying signs of recent decline. Staff development of teaching skills is virtually non-existent and there is no system of peer evaluation of teaching, nor of annual staff evaluations.

4. Facilities and learning resources

Faculty physical provision for the programme is adequate, although some of the lecture rooms and laboratories are in need of refurbishment – a process which is currently underway using EU structural funding.

Although improving, teaching and learning equipment remains restricted, with both staff and students emphasising the lack of laboratory equipment and with ‘the need for additional equipment’ topping the list of priorities for both teaching staff and students - including relatively modest provisions such as microscopes and soft materials/samples/consumables which restrict individual, as opposed to group, laboratory practicals.

The programme is well supported by geological collections of minerals, fossils, rock collections etc. at laboratory, lecture room and Departmental museum levels.

Library provision is adequate, and is especially good with respect to electronic sources and databases. Students complained of an absence of sufficient handbook source material both in Lithuanian and English and of an overprovision in Russian - a view which the review team supports. IT resources are basic, but adequate for the programme and are showing steady improvement.

Other sources of equipment outside the Faculty are available to students on a collaborative basis, for example in the Nature Research Centre and in several private companies.

Main strengths and weaknesses

Teaching and learning equipment is clearly limited and a source of frustration amongst both staff and students. However, the situation is steadily improving with funding from a number of sources and, in some areas, such as e-journals and e-databases, resourcing for the programme is now good.

5. Study process and student assessment

The admission requirements for the programme are LAMA BPO centralised and are well-founded. However, the high science entry grades are probably a significant factor in the modest levels of recruitment and are worthy of review.

The study process and course/module information is freely available on the university website, and the organisation of the study process ensures adequate provision of the programme and the achievement of the learning outcomes. However, first year drop out rates are a cause for concern and, despite the fact that part of these reflect inevitable personal and financial constraints, nonetheless the suspicion remains that some students either misunderstand what the programme entails, or fail to be motivated by it.

Assessment of students through essays, practicals, examinations and final thesis are varied, timely and the quantities of assessment are broadly appropriate to the programme. Assessment feedback appears to be very variable with wide variations between courses. Moreover, feedback seems to be always retrospective, with the student only becoming aware of problems/potential improvements after the event. Unfortunately all assessment also appears to be summative (i.e. marked and graded) with nil formative assessment (i.e. not graded and used more flexibly to train and develop skills and techniques). Under the current system it is difficult to see how a student has the opportunity to practise and develop transferable skill techniques such as writing, analytical or advocacy skills. This issue was raised by employers during the visit who expressed their concern, for example, at the low level of literacy and presentational skills of graduates. Similarly, the very moderate quality of final theses clearly reflects a lack of any rigorous formative training in how to write and present theses.

Fieldwork forms a vital component of the programme and, despite the fact that students interviewed during the visit expressed their wish for more fieldwork; the current amounts of fieldwork are certainly adequate for the programme.

The process by which students supplement the programme by internship/placement work with State bodies and private companies is to be applauded, but seems to be currently variable, with students apparently having to find these placements themselves. This process should be formalised and regulated within the Department. Clearly, as employers confirmed, these internships/placements are extremely beneficial to employment prospects and often lead directly to employment itself. There was no mention by students of participation in either internal or external research or applied research projects.

Opportunities exist for students to participate in student mobility programmes but the take up levels are low. Personal financial constraints play a clear role in this, but there is also a lack of clear information on available opportunities and the range of potential funding opportunities currently available. Such an information service would be extremely useful, especially if operating at a Faculty or Departmental level.

Although there is informal support, and teaching staff appear to be readily available, there appears to be no formal academic or social support system; for example no personal adviser for academic studies or for pastoral care. Given the worrying early first year drop out rates on the programme, the introduction of such a personalised system certainly merits serious consideration.

Average final grades on the programme are good and employment prospects emanating from the programme are high in both the public and private sectors. Employers would certainly welcome and support a higher intake onto the programme.

Main strengths and weaknesses

The main strengths of the study process are a generally available and helpful staff and the emphasis placed on practical fieldwork and laboratory work. Assessment methods are reasonable with a varied composition of written and oral assessment in a variety of formats. However, the principal weakness of the assessment system lies in the absence of formative assessment and its concomitant effect on inadequate training in transferable techniques and skills. Other weaknesses involve the absence of formal information systems to deal with student mobility, internship/placement work, and personalised academic advice and pastoral care.

6. Programme management

Responsibilities for programme management is clear at University, Faculty and Departmental and Programme Committee levels. Based on initiatives from staff and students, the Programme Committee may change up to 10% of the programme without recourse to Faculty level and above. However, meetings of the Programme Committee appear to be irregular and no minutes of these meetings were shown to the review group.

Information on student opinion was collected for the SAR by a student poll and the university's Centre for Quality Assurance and the VU Student's Union also collect annual student opinions, but these are collated at university level and do not feed back directly to the programme management, or to individual members of staff. Some staff collect student opinions at the end of a course, but others do not. A formalised system to collect student views at the course level (as happens in some other VU Faculties and other Lithuanian universities) is essential.

Improvements to the programme suggested in the 2005 review have been duly implemented and it is clear that the Programme Committee has been actively improving the

programme in the 2005-11 period, for example in the re-timetabling of courses and targeting of staff appointments.

Employers interviewed during the review confirmed that they had *ad hoc* and informal input into suggested improvements to the programme, but there is no formal mechanism to productively enhance this dialogue with employers.

Without better information from stakeholders, it is difficult to envisage an effective and efficient process of internal quality assurance, or any effective annual programme review mechanism.

Main strengths and weaknesses

Roles and responsibilities are clear but quality assurance suffers from inadequate mechanisms for data collection from stakeholders, and notably from students and employers.

Programme Committee meetings appear to be irregular and formalisation of Programme Committee activity is necessary, preferably leading to a formal process of Annual Programme Review. There is no formal mechanism to productively enhance dialogue with employers.

III. RECOMMENDATIONS

1. Consider the structure of the current programme as discussed in the overview report of VU geology provision which accompanies this programme-specific report.
2. Develop a mechanism for raising staff teaching skills to include, amongst other things, peer evaluation of staff teaching and annual evaluation of staff teaching.
3. Improve the teaching of transferable skills, such as basic literacy, analytical and advocacy skills, by means of the introduction of compulsory formative assessments to complement the current 'summative assessment only' system.
4. Introduce measures to improve both staff and student mobility – in the case of staff by more flexible timetabling – in the case of students by better information on available opportunities.
5. Introduce a better system for collecting annual stakeholder opinions – in the case of employers, possibly an annual 'employers' forum' – in the case of students, an anonymous post-course/module student opinion survey.
6. Introduce an Annual Programme Review process for the Programme Committee to consider data collected under 2. and 5. above, together with other data e.g. intake figures, progression rates, final results, employment statistics etc.

IV. GENERAL ASSESSMENT

The study programme Geology (state code – 612F60001) 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	2
4.	Material resources	3
5.	Study process and assessment (student admission, study process student support, achievement assessment)	2
6.	Programme management (programme administration, internal quality assurance)	3
	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.

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