



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

VILNIAUS UNIVERSITETO  
***HIDROGEOLOGIJA IR INŽINERINĖ GEOLOGIJA***  
**PROGRAMOS (621F61001)**  
**VERTINIMO IŠVADOS**

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**EVALUATION REPORT**  
***OF HYDROGEOLOGY AND ENGINEERING GEOLOGY***  
**(621F61001)**  
**STUDY PROGRAMME**  
**VILNIUS UNIVERSITY**

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Išvados parengtos anglų kalba  
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## DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	<b>Hidrogeologija ir inžinerinė geologija</b>
Valstybinis kodas	621F61001
Studijų sritis	Fiziniai mokslai
Studijų kryptis	Geologija
Studijų programos rūšis	Universitetinės studijos
Studijų pakopa	Antroji
Studijų forma (trukmė metais)	Nuolatinė (2)
Studijų programos apimtis kreditais	120
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Geologijos magistras
Studijų programos įregistravimo data	2002 06 14 Nr. 1093

## INFORMATION ON ASSESSED STUDY PROGRAMME

Name of the study programme	<b>Hydrogeology and Engineering Geology</b>
State code	621F61001
Study area	Physical Sciences
Study field	Geology
Kind of the study programme	University studies
Level of studies	Second
Study mode (length in years)	Full-time (2)
Scope of the study programme in credits	120
Degree and (or) professional qualifications awarded	Master in Geology
Date of registration of the study programme	2002 06 14 No 1093

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The Centre for Quality Assessment in Higher Education

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## I. INTRODUCTION

The external assessment of the study programme Hydrogeology and Engineering Geology (state code - 621F61001) was initiated by the Centre for Quality Assessment in Higher Education of Lithuania nominating the external assessment expert group formed by Professor Alvar Soesoo (Tallinn University of Technology, Estonia - team leader), Professor James Andrew Graham Cooper (University of Ulster, Northern Ireland, U.K.), Professor Jacek Puziewicz (University of Wrocław, Poland), Mr. Juozas Mockevičius (member of Lithuanian Union of Geologists and geological research enterprise „Grotas“), and student representative Justinas Staugaitis (Kaunas University of Technology).

The introductory meeting was organised on 24<sup>th</sup> February at the Centre for Quality Assurance in Higher Education, Vilnius. The evaluation of the study programme Hydrogeology and Engineering Geology (state code - 621F61001) made use of the following documents and presentations: Education in Lithuania; Assessment of External Study Programmes: Methodological Guidelines for Experts; Regulations for Master studies; Higher education and research reform in Lithuania; Description of Study Programme Accreditation Order; Higher education evaluation system in Lithuania; Methodological Guidelines: Visits, Final report, and other documents.

The basis for the evaluation of the study programme (hereafter, the programme) is the Self-Evaluation Report, compiled in 2013, its annexes and the site visit of the expert group to Vilnius University (hereafter, the University) on 26<sup>th</sup> February 2014. The visit incorporated all required meetings with different academic and public groups, including the administrative staff of the Faculty of Natural Science, staff responsible for preparing the self-assessment documents, teaching staff, students of the first and second years of study, graduates, and social partners. The expert group examined presented Master theses. The expert group also inspected various support services (classrooms, laboratories, library, computer facilities).

After discussions and preparation of conclusions and remarks, the expert group presented introductory general conclusions of the visit to the Faculty and Department members. After the visit, the group met on 27<sup>th</sup> February to discuss and agree on the content of the report and provide points for the assessed evaluation areas.

## II. PROGRAMME ANALYSIS

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

The aims of the study programme include general understanding and practical/research skills in hydrogeology and engineering geology, as well as general competences necessary to work in a team, to make decisions and to be a leader. The learning outcomes are defined in sufficient detail. They comprise 6 outcomes related to group work and decision-making, 6 outcomes related to achieving and applying high-level general knowledge, and 12 outcomes related to specific knowledge and practical skills in hydrogeology, engineering geology and connected issues of environmental geology. Both the aims and learning outcomes of the Master (2nd level) study in Hydrogeology and Engineering Geology at the Vilnius University (VU) are clearly presented, well defined and easily accessible to the public through web pages.

The labour market for hydrogeologists and engineering geologists in European countries is usually local and commonly dominated by small enterprises, and the aims of the study programme meet well the local needs in Lithuania. The hydrogeology and engineering geology laboratories at the Vilnius University are well equipped, enabling sound practical skills to be defined in the programme aims and achieved in learning outcomes. Nevertheless, the study programme is broad and complex, and offers balanced theoretical and practical knowledge at the high professional level, which fulfil the requirements of the Master studies level.

The programme aims and learning outcomes include also the general competences and assure flexibility necessary for successful careers in the contemporary hydrogeological and geological engineering job market. The study programme assures that these competencies are achieved during the study. The aims and outcomes of learning assure the graduates good background necessary for career both in the local and international labour market. Both the programme aims and learning outcomes are compatible with each other and fit the Master studies level.

### *2. Curriculum design*

Structure of the Programme plan is harmonized with the system of intended learning outcomes. The Study programme consists of obligatory (50 credits), optional study subjects (10 credits), research work and professional practice (30 credits) and the Master thesis (30 credits).

Structurally, the curriculum is well designed, and the sufficient importance is given to the research practice and the Master thesis. There is a good ratio between compulsory and optional subjects: 50 and 10 credits, respectively, but elective subjects are mainly related to Engineering Geology – just one discipline is in the field of Hydrogeology.

The description of general aim of the Programme “to develop skills and provide knowledge essential to perform scientific research and high quality practice in the fields related to Hydrogeology, Engineering Geology and Environmental Sciences” sounds a little ambitious or misleading. Since Environmental Sciences is a multi-disciplinary investigation of the interactions between the physical, chemical and biological conditions of the environment (it comprises various branches of studies like chemistry, ecology, soil science, zoology etc. and hydrogeology and engineering geology as well).

The curriculum design meets legal requirements issued by the Ministry of Education and Science for Master studies and Vilnius University Rector’s regulations for study programmes. Syllabus is relevant to outcomes of the curriculum and compulsory subjects are spread in such a way that the students are learning gradually from more basic courses and research methods to more specialised and professionally oriented courses. Practical research work is allocated during all semesters which allows for students in consecutive order to develop and increase professional skills. The content of the subjects is appropriate to the level of the programme and sufficient for the students to achieve intended learning outcomes such as ability to analyze data, to organize and set-up investigations, to choose appropriate research methods etc. The curriculum reflects current research and latest achievement in the science and due to that the structure of the programme is periodically renewed by introducing new actual courses. As example, during 2011-2012 there were 4 former courses removed from the programme and 3 new (related to modelling and research methods in hydrogeology) were implemented. The scope of the Programme has good balance of theoretical and practical courses and is research-oriented.

### *3. Staff*

The staff meet the legal requirements. The teaching staff are all well qualified academically. All of the staff are educated to PhD level in engineering geology or geology and all are teaching in the field of their PhD research or a closely related field. All staff have many years experience in

professional posts outside the university. The complement of ten staff is appropriate to deliver the programme.

The staff turnover is low, indicating stability in teaching provision. Each staff member has attended a few conferences, national and international. Foreign conferences attended by staff are directly relevant to the subject area and include: Baltic states workshop “Hard soil, softrocks”. Jõulumäe, Estonia, 2013; 12th International Multidisciplinary GeoConference, SGEM2012 June 17-23, 2012, Bulgaria and 21st International Radiocarbon Conference Paris, France, 2013. Two staff members have spent periods abroad in the past 5 years. With a few exceptions, the degree to which staff are involved in such activities is rather limited. The low degree of mobility is also identified in the self-evaluation document.

The teaching staff are all engaged in research or consultancy relevant to the subjects being taught. The quality of the research outputs is moderate/fair with most staff having published a few journal articles in the past 5 years. Regional and national journals are most common (e.g. Baltica, Estonian Journal of Earth Sciences and Vibroengineering), but there are also contributions to international journals including Hydrogeology Journal, Bulletin of Engineering Geology and the Environment and Journal of Environmental Engineering and Landscape Management. Technical reports are abundant in their CVs, which is appropriate for an applied degree of this nature.

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

Faculty physical provision for the programme is adequate to meet programme main study demands. Vast majority of the lecture rooms and laboratories have been recently renovated and furnished. The Geoenvironment Auditorium and Masters Room are fully equipped with computers, including a multimedia projector. The Geoinformatics Laboratory has 10 computers and necessary software including Visual MODFLOW, Aquifer Test, WHI UnSat, AquaChem, PHREEQ Interactive 2.2, ARCGIS 10, SAS, COREL 12, SURFER 7.0, IMAGE PRO 6.3 and others which allow students modelling ground water filtration, pollution transportation, aeration zone and soil humidity transfer and parameters of chemical thermodynamics in water solutions.

Laboratories of Geofiltration, Hydrogeochemistry, Engineering Geology and Ground Mechanics have basic study and research equipment to support studies of chemical, organic and gas

composition in ground waters, identification of physical parameters, evaluation of filtration parameters and composition of grounds and rock formations, also for assessment of physical state and mechanical behaviour. The equipment also includes spectrometer of emission for induced plasma OES Optima 7000 DV Perkin Elmer, Ionic Chromatograph DIONEX ICS-5000, Ionic Chromatograph DIONEX ICS-5000, Automatic triaxial compression testing machine LIZT, Automatic data acquisition and processing system and others. However, in modern hydrogeology, measurements of light isotopic systems (O, H, S) are inevitable. As there is no opportunity at VU to use such equipment in other departments, we suggest that the Department should consider purchase of a mass-spectrometer for measurements of essential isotopes in water.

Teaching equipment and learning resources meet the requirements and support the programme specifics. Some of the equipment (especially gas/ion chromatographs and ICP) are suitable for larger scientific cooperation with other departments and universities. It was also mentioned by students and staff that they are open to additional large-scale cooperation in applied research in national and international levels.

Library provision is adequate, and is good with respect to electronic periodicals sources and databases, which are accessible via VPN service (full list is available at <http://www.mb.vu.lt/istelkiai/index.php?browse=db>). IT resources are adequate and provide access to electronic journals, teaching materials, eBooks and databases also from outside the campus. There is a number of new textbooks published during the last decade. In addition, in 2012-2013 several new textbooks were introduced such as V. Juodkazis, M. Gregorauskas, R. Mokrik "Regional hydrogeodynamics: wellfields: pools and resources"; S. Gadeikis, P. Klizas, R. Mokrik, K. Jokšas "Geoengineering field test methods" and S. Gadeikytė, S. Gadeikis "Soil science basic". The access to textbooks and the number of English textbooks is sufficient for the Programme.

The student practice is adequate and is related to practical use of laboratory equipment and preparation of thesis. There is no doubt, the improvements in laboratory support and learning resources of the Hydrogeology and Engineering Geology programme are clearly visible during the period of the last three years. This includes instalment of new equipment (dilatometer, penetrometer, OES spectrometer, gas chromatographs, automatic data acquisition systems and others) and a number of new Lithuanian and English textbooks and other electronic lecture materials.



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

Admission requirements (based on the first degree in Geology) are well founded. They are aimed at the Bachelor graduate students of the Vilnius University, who can choose between geology and hydrogeology/engineering geology 2<sup>nd</sup> level study. They are well known to the Bachelor students of the Vilnius University. However, the students who have the Bachelor degree not in Geology and not from VU are not well informed that there is a possibility to join the Master study. This aspect of information should be improved, for example, with easily accessible and easy-to-find information in University web pages.

The study programme is well organized and efficiently performed. The learning outcomes can be achieved with the present organisation of the study process. The Hydrogeology and Engineering Geology graduates usually find a job in the local labour market. Nevertheless, participation of lecturers in the exchange programme (Erasmus) should be encouraged, to give the staff and the students the opportunity of contact with recent advances in the theory and practice in hydrogeology and engineering geology and to practise communication in English at the professional level. The laboratory modules are mostly based on the explanation during the lecturers, and the detailed e-materials are welcome by students.

There is a good practice in the way that students choose Master thesis topic in the consultation with social partners and teachers. This ensures the theses are well prepared and useful for basic or applied research, which is related to on-going projects or at university or company.

The assessment of students performance (based on examinations and student's knowledge verification during lessons) is well organised. The small amount of students in the group enables close contacts with staff members and enhances the clear and adequate student evaluation. The professional activity of the graduates who are employed as geologists in various state organizations and private enterprises fits well the programme structure and meets the expectations of programme providers.

Students studying in this study programme have the possibility to get social support (scholarship). However, because of the external reasons, the financial support is not high, which results in small interest from the students. The Faculty could take more attention in encouraging students to find extra support from University or social partners.

Students are provided with appropriate knowledge of lecture assessment, and publication of results. This Programme has a good practice in discussing and implementing improvements and changes (by meetings with Alumni, social partners). A challenge is to show these changes publicly. This helps students to feel more that they are a part of the study process and programme improvement.

Social partners and Alumni are a part of the study process. They are involved in course committees, they are also involved in Master thesis preparation as co-supervisors. Students' involvement in course committee meetings and discussions, together with potential employers has great value and contributes to the students' motivation to achieve the best academic score and find a job.

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

The programme management of 2nd level study of Hydrogeology and Engineering Geology is a part of the quality management system at the Vilnius University. Thus, Rector, Senate, Dean and Faculty Council are the members of the quality monitoring system, which extends down to the departments, individual teachers and students. Important elements of the programme management are Quality Management Center of the Vilnius University (student feedback) and Study Programme Committee of the Department of Hydrogeology and Engineering Geology.

The responsibilities of the programme management are clearly defined in all levels. Regular (semester based) evaluation and analysis of the examination results and opinions of the students are important parts of the quality monitoring and management system. They are used for corrections and improvements of the programme. The well-established network of contacts with employers and graduates enables continuous tuning of the study programmes according to the changing requirements of the local labour market. The close, practically every-day contacts with stakeholders assure also the rapid programme changes and good knowledge about the quality of graduates, essential in programme evaluation.

The results of the last external evaluation of the programme, made by the Lithuanian Centre for Quality Assessment in Higher Education, were carefully analysed and used for programme improvement (e.g. changes in laboratory instrumentation, enabling sound practical exercises).

In summary, the programme management system is well organized, efficient and assures permanent monitoring and necessary improvements and corrections of the study programme.

A weakness of the system is relatively low interest of students in taking part in surveys for evaluation process, which, however, is a general European tendency and is difficult to overcome. This is not a serious fault of the system, since the relatively small number of students and close everyday contacts between students and staff enable the necessary feedback at the Department level. The ability of students to communicate efficiently in English, which, however, is beyond the programme of the 2nd level study, needs greater care. This requires exercising the professional English during some of the lessons.

### III. RECOMMENDATIONS

1. Develop and introduce the course(s) on practical (geological research related) English at the Masters level;
2. Evaluate the possibility to introduce more optional subjects related to hydrogeological investigations and find good balance for both disciplines (hydrogeology and engineering geology) involved in Master studies;
3. Staff are to be encouraged to undertake study and research periods in foreign institutions. Encourage more widely and support students in international mobility;
4. Lectures by visiting scientists should be encouraged and are really necessary for both - students and teaching staff in order to enlarge knowledge base and practical experiences and English language skills;
5. Extend and tighten research, study cooperation and sharing the equipment with the Department of Geology and other university departments, other Lithuanian universities and universities, research and applied research organisations from abroad.

### IV. SUMMARY

The overall impression of the *Hydrogeology and Engineering Geology* Master programme is positive. As this programme is the only *Hydrogeology and Engineering Geology* Master

programme in Lithuania it is vital that the programme keeps its high education standard, is sustainable and meets national and international quality requirements and labour market needs. It should also be mentioned that the results of the last external evaluation of the programme in 2011 made by the Lithuanian Centre for Quality Assessment in Higher Education were carefully analysed and used for programme improvement.

The programme aims and outcomes are clearly defined and well presented. The programme aims and learning outcomes include also the general competences and assure flexibility necessary for successful career in the contemporary hydrogeological and geological engineering job market. The study programme assures that these competencies are achieved during the study. The aims and outcomes of learning assure the graduates good background necessary for career both in the local and international labour market. Both the programme aims and learning outcomes are compatible with each other and fit the Master studies level.

Structurally, the curriculum is well designed, and the sufficient importance is given to the research practice and the Master thesis. The Master thesis preparation is organized in good cooperation with local geological research companies. The Programme plan is harmonized with the system of intended learning outcomes. Content of the subjects reflects the latest developments in the hydrogeological and engineering geology research methods and technologies. The scope of the Programme is sufficient to acquire necessary knowledge and to develop practical skills.

The staff meet the legal requirements. All the staff are educated to PhD level in engineering geology or geology and most are teaching in the field of their PhD research or a closely related field. There is an adequate number of staff to deliver the programme. Each staff member has attended a few conferences, national and international. Some, but not all have spent periods abroad. More mobility is necessary for staff.

The Department has necessary research equipment. Teaching equipment and learning resources meet the requirements and well support the programme specifics. Some of the equipment (especially gas/ion chromatographs and ICP) are very suitable for larger scientific cooperation with other departments and universities. Students have access to computer lab which is equipped with primary necessary software. Most of rooms have been renovated in the last few years. The student practise is adequate and is related to technical laboratory work and preparation of their Master thesis. Library provision is adequate, and is good with respect to electronic sources and databases.

Admission requirements and organization of study process are well prepared, but must be improved in few aspects, for instance to better inform other faculties and other universities about the *Hydrogeology and Engineering Geology* study programme and learning/educational possibilities at Master level. The study programme is well organized; students and academic staff are able to explain learning outcomes and achievements. Some of the students interviewed during the visit took part in the discussion in a somewhat passive way, the probable reason being limited English language capabilities. More international mobility is needed for students.

The programme management system is a part of the quality management system at the Vilnius University. The responsibilities of the programme management are clearly defined in all levels. The responsibilities of the programme management are clearly defined in all levels. Regular (semester based) evaluation and analysis of the examination results and opinions of the students are important parts of the quality monitoring and management system. They are used for corrections and improvements of the programme. The well-established network of contacts with employers and graduates enables continuous tuning of the study programmes according to the changing requirements of the local labour market. The programme management system is well organized, efficient and assures permanent monitoring and necessary improvements and corrections of the study programme. The weakness of the system is relatively low interest of students in taking part in surveys for evaluation process. The ability of students to communicate efficiently in English needs greater care. This probably requires exercising the professional English during some of the lessons.

In conclusion, the *Hydrogeology and Engineering Geology* programme meets educational and specific national and international requirements and is sustainable. It is important to mention that all the social partners participating the interviews confirmed that they trust the competences of the students they have employed.

## V. GENERAL ASSESSMENT

The study programme Hydrogeology and Engineering Geology (state code – 621F61001) at Vilnius 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	4
2.	Curriculum design	4
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>20</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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**VILNIAUS UNIVERSITETO ANTROSIOS PAKOPOS STUDIJŲ PROGRAMOS  
HIDROGEOLOGIJA IR INŽINERINĖ GEOLOGIJA (VALSTYBINIS KODAS –  
621F61001) 2014-04-17 EKSPERTINIO VERTINIMO IŠVADŲ NR. SV4-172 IŠRAŠAS**

<...>

**V. APIBENDRINAMASIS ĮVERTINIMAS**

Vilniaus universiteto studijų programa *Hidrogeologija ir inžinerinė geologija* (valstybinis kodas – 621F61001) vertinama **teigiamai**.

Eil. Nr.	Vertinimo sritis	Srities įvertinimas, balais*
1.	Programos tikslai ir numatomi studijų rezultatai	4
2.	Programos sandara	4
3.	Personalas	3
4.	Materialieji ištekliai	3
5.	Studijų eiga ir jos vertinimas	3
6.	Programos vadyba	3
	<b>Iš viso:</b>	<b>20</b>

\* 1 - Nepatenkinamai (yra esminių trūkumų, kuriuos būtina pašalinti)

2 - Patenkinamai (tenkina minimalius reikalavimus, reikia tobulinti)

3 - Gerai (sistemiškai plėtojama sritis, turi savitų bruožų)

4 - Labai gerai (sritis yra išskirtinė)

<...>

**IV. SANTRAUKA**

Bendras Hidrogeologijos ir inžinerinės geologijos magistrantūros programos įspūdis yra geras. Kadangi tai yra vienintelė Hidrogeologijos ir inžinerinės geologijos magistrantūros programa Lietuvoje, svarbu, kad ji užtikrintų aukštus išsilavinimo standartus, būtų tvari ir atitiktų vietinius

ir tarptautinius kokybės reikalavimus bei darbo rinkos poreikius.. Taip pat reikėtų paminėti, kad paskutiniojo išorinio programos vertinimo, kurį 2011 m. atliko Studijų kokybės vertinimo centras, rezultatai buvo nuodugniai išanalizuoti ir panaudoti programai tobulinti.

Programos tikslai ir studijų rezultatai aiškiai apibrėžti ir tinkamai pateikti. Į programos tikslus ir studijų rezultatus įeina ir bendrojo pobūdžio kompetencijos, jie užtikrina lankstumą, būtiną, norint kurti sėkmingą karjerą šiandieninėje hidrogeologijos ir geologinės inžinerijos darbų rinkoje. Studijų programa užtikrina, kad studijuojant šios kompetencijos būtų įgytos. Mokymosi tikslai ir rezultatai suteikia absolventams gerą žinių bagažą, būtiną jų profesinei veiklai tiek vidaus, tiek ir tarptautinėje darbo rinkoje. Tiek programos tikslai, tiek studijų rezultatai dera tarpusavyje ir atitinka magistrantūros studijų lygį.

Struktūros atžvilgiu studijų programa yra sudėliota gerai, mokslinių tyrimų praktikai ir magistro darbui skiriama pakankamai dėmesio. Magistro baigiamasis darbas yra rengiamas glaudžiai bendradarbiaujant su vietos geologinių tyrimų įmonėmis. Programos planas suderintas su numatomų studijų rezultatų sistema. Dalykų turinys atspindi naujausius pasiekimus hidrogeologijos ir inžinerinės geologijos tyrimo metodų ir technologijų srityse. Programos apimtis yra pakankama, kad studentai įgytų būtinas žinias ir išsiugdytų praktinius įgūdžius.

Personalas atitinka teisinius reikalavimus. Visi personalo nariai turi inžinerinės geologijos arba geologijos mokslų daktaro laipsnį, dauguma jų dėsto temas, iš kurių rašė disertacijas, arba labai artimos srities temas. Darbuotojų skaičius programai vykdyti yra tinkamas. Kiekvienas personalo narys yra dalyvavęs pakankamai nacionalinių ir tarptautinių konferencijų. Kai kurie, tačiau ne visi darbuotojai stažavosi užsienyje. Personalui reiktų aktyviau įsijungti į judumo programas.

Katedra yra aprūpinta reikiama tyrimų įranga. Mokymo įranga ir mokymosi ištekliai atitinka reikalavimus ir patenkina specifinius programos reikalavimus. Kai kurie įrenginiai (ypač dujų / jonų chromografai ir ICP) gali būti labai sėkmingai naudojami platesniu moksliniu mastu, bendradarbiaujant su kitomis katedromis ir universitetais. Studentai turi galimybę naudotis kompiuterių laboratorija, aprūpinta svarbiausia reikalinga programine įranga. Dauguma patalpų buvo atnaujintos per keletą paskutinių metų. Studentų praktika yra adekvati ir susijusi su techniniu laboratoriniu darbu ir magistro darbo rengimu. Bibliotekos fondai yra pakankami, tinkamai aprūpinti elektroniniais šaltiniais ir duomenų bazėmis.

Stojimo reikalavimai ir studijų proceso organizavimas yra parengti gerai, tačiau kai kuriuos aspektus reikėtų tobulinti, pavyzdžiui, reikėtų geriau informuoti kitus fakultetus ir universitetus apie Hidrogeologijos ir inžinerinės geologijos studijų programą ir mokymosi bei švietimo galimybes magistrantūroje. Studijų programa yra gerai organizuojama, studentai ir akademinis



personalas geba paaiškinti studijų rezultatus ir pasiekimus.. Kai kurie vizito metu kalbinti studentai dalyvavo pokalbyje pasyviai, greičiausiai to priežastis buvo jų ribotos anglų kalbos žinios. Studentai turėtų aktyviau dalyvauti tarptautinio judumo programose.

Programos vadybos sistema yra Vilniaus universiteto kokybės valdymo sistemos dalis.. Programos vadybos atsakomybės aiškiai nustatytos kiekviename lygmenyje. Reguliarūs semestro vertinimai bei egzaminų rezultatų analizė ir studentų nuomonė yra svarbios kokybės stebėsenos ir vadybos sistemos sudedamosios dalys. Atsižvelgiant į juos, programa koreguojama ir tobulinama. Stabilus ryšių su darbdaviais ir absolventais tinklas leidžia nuolat derinti studijų programą, atsižvelgiant į besikeičiančius reikalavimus vietinėje darbo rinkoje. Programos vadybos sistema yra gerai organizuojama, veiksminga ir užtikrina nuolatinę studijų programos kontrolę bei būtinus patobulinimus ir korekcijas. Kaip silpnąją sistemos vietą galima įvardyti santykinai mažą studentų suinteresuotumą dalyvauti vertinimo proceso apklausose. Reikia daugiau dėmesio skirti tam, kad studentai gebėtų laisvai bendrauti anglų kalba. Šiam tikslui pasiekti greičiausiai reiktų kai kurias paskaitas vykdyti profesine anglų kalba.

Taigi, galima daryti išvadą, kad Hidrogeologijos ir inžinerinės geologijos programa atitinka švietimo ir specifinius nacionalinius bei tarptautinius reikalavimus ir yra tvari.. Svarbu paminėti, kad visi pokalbiuose dalyvavę socialiniai partneriai teigė pasitikintys savo įdarbintų studentų kompetencija ir žiniomis.

### **III. REKOMENDACIJOS**

1. Sukurti ir įtraukti į programą magistro lygio praktinės (susijusios su geologiniais tyrimais) anglų kalbos mokymą.
2. Įvertinti galimybę įtraukti daugiau pasirenkamųjų dalykų, susijusių su hidrogeologiniais tyrinėjimais, ir rasti gerą pusiausvyrą tarp abiejų disciplinų (hidrogeologijos ir inžinerinės geologijos), dėstomų magistrantūros studijose.
3. Skatinti personalą vykdi studijuoti į mokslines stažuotes užsienio mokymo įstaigose. Remti ir skatinti studentus aktyviau ir daugiau dalyvauti tarptautinio judumo programose.
4. Reikėtų skatinti vizituojančius mokslininkus skaityti paskaitas, kadangi jos išties būtinos tiek studentams, tiek mokymo personalui, norint plėsti žinių bazę ir įgyti daugiau praktinės patirties bei patobulinti anglų kalbos įgūdžius.

5. Praplėsti ir sugriežtinti mokslinį, akademinį bendradarbiavimą ir dalytis įranga su Geologijos katedra bei kitomis universiteto katedromis, kitais Lietuvos universitetais ir tyrimų bei taikomojo mokslo organizacijomis iš užsienio šalių.

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Paslaugos teikėja patvirtina, jog yra susipažinusi su Lietuvos Respublikos baudžiamojo kodekso<sup>1</sup> 235 straipsnio, numatančio atsakomybę už melagingą ar žinomai neteisingai atliktą vertimą, reikalavimais.

Vertėjos rekvizitai (vardas, pavardė, parašas)

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<sup>1</sup> Žin., 2002, Nr.37-1341.