



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

VILNIAUS TECHNOLOGIJŲ IR DIZAINO KOLEGIJA
STUDIJŲ PROGRAMOS
GEODEZIJA IR KADASTRAS (valstybinis kodas – 653H14007)
VERTINIMO IŠVADOS

EVALUATION REPORT
OF *GEODESY AND CADASTRE (state code – 653H14007)*
STUDY PROGRAMME
At VILNIUS COLLEGE OF TECHNOLOGIES AND DESIGN

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Išvados parengtos anglų kalba
Report language - English

Vilnius
2016

DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	<i>Geodezija ir kadastras</i>
Valstybinis kodas	653H14007
Studijų sritis	Technologijos mokslai
Studijų kryptis	Bendroji inžinerija
Studijų programos rūšis	Koleginės studijos
Studijų pakopa	Pirmoji
Studijų forma (trukmė metais)	Nuolatinė (3)
Studijų programos apimtis kreditais	180
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Matavimų inžinerijos profesinis bakalauras
Studijų programos įregistravimo data	2012 m. vasario 1 d., Nr. SV6-4

INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	<i>Geodesy and Cadastre</i>
State code	653H14007
Study area	Technological Sciences
Study field	General Engineering
Type of the study programme	College studies
Study cycle	First
Study mode (length in years)	Full-time (3)
Volume of the study programme in credits	180
Degree and (or) professional qualifications awarded	Professional Bachelor in Measurement Engineering
Date of registration of the study programme	1 February, 2012, No. SV6-4

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I. INTRODUCTION

1.1. Background of the evaluation process

The evaluation of on-going study programmes is based on the **Methodology for evaluation of Higher Education study programmes**, approved by Order No 1-01-162 of 20 December 2010 of the Director of the Centre for Quality Assessment in Higher Education (hereafter – SKVC).

The evaluation is intended to help higher education institutions to constantly improve their study programmes and to inform the public about the quality of studies.

The evaluation process consists of the main following stages: 1) *self-evaluation and self-evaluation report prepared by Higher Education Institution (hereafter – HEI)*; 2) *visit of the review team at the higher education institution*; 3) *production of the evaluation report by the review team and its publication*; 4) *follow-up activities*.

On the basis of external evaluation report of the study programme SKVC takes a decision to accredit the study programme either for 6 years or for 3 years. If the programme evaluation is negative such a programme is not accredited.

The programme is **accredited for 6 years** if all evaluation areas are evaluated as “very good” (4 points) or “good” (3 points).

The programme is **accredited for 3 years** if none of the areas was evaluated as “unsatisfactory” (1 point) and at least one evaluation area was evaluated as “satisfactory” (2 points).

The programme is **not accredited** if at least one of evaluation areas was evaluated as “unsatisfactory” (1 point).

1.2. General

The Application documentation submitted by the HEI follows the outline recommended by SKVC. Along with the self-evaluation report and annexes, the following additional document was provided by the HEI before, during and/or after the site-visit:

No.	Name of the document
1.	Copy of the Diploma supplement (AEN No 0003677)

1.3. Background of the HEI/Faculty/Study field/ Additional information

Vilnius College of Technologies and Design (hereinafter - college) was formed on September 1, 2008 by the Order No.785 of the Government of the Republic of Lithuania after merging the reorganized Vilnius Technical College with Vilnius College of Construction and Design and became the largest college in the field of technological and art studies in Lithuania (SER page 4). Vilnius College of Technologies and Design consists of four faculties: Faculty of Design, Civil Engineering Faculty, Petras Vileišis Railway Transportation Faculty, and Technical Faculty. 19 study programmes are implemented, 4 of them are implemented at the Civil Engineering Faculty.

Since 2002 the College has been conducting measuring engineering programme in the field of Technology. The Geodesy and Cadastre study programme has been updated in 2011, during the implementation of the project „Engineering study branch programmes updating during the installation of innovative methods of learning and promoting internationalism" (Project No VPI-2.2-ŠMM-07-K-01-120). That study programme has been accredited for 3 years in 04-01-2012 under the order of SKVC director No SV2-2 and it was registered in Study and training programmes register as a new programme which was started to be implemented as full-time studies from 1 September 2012. An external study programme assessment has not been carried out earlier.

1.4. The Review Team

The review team was assembled in accordance with the *Expert Selection Procedure*, approved by Order No 1-55 of 19 March 2007 of the Director of the Centre for Quality Assessment in Higher Education, as amended on 11 November 2011. The Review Visit to HEI was conducted by the team on 3th May, 2016.

1. Prof. dr. Bernd Teichert (team leader), former professor at the University of Applied Sciences, Dresden, Department of Surveying and Cartography; Research assistant (Physical Geodesy) at the Technical University of Berlin, Germany.
2. Prof. Dr. Artu Ellmann, professor at Tallinn University of Technology, Faculty of Civil Engineering, Department of Road Engineering, Chair of Geodesy, Estonia.
3. Assoc. Prof. Eloina Coll Aliaga, associate Professor in the Cartographic Engineering, Geodesy and Photogrammetry Department, Politechnic University of Valencia, Spain.
4. Ms Vytautė Juodkienė, Lecturer at Department of Geodesy at Kaunas College, Lithuania.
5. Mr. Audrius Petkevičius, CEO of LLC „Urbanistika“, Lithuania.
6. Ms. Neringa Vaiciunaitė, PhD student of Materials Engineering at Kaunas University of Technology, Lithuania.

II. PROGRAMME ANALYSIS

2.1. Programme aims and learning outcomes

The study programme Geodesy and Cadastre is similar to study programmes pursued in certain higher educational institutions in Lithuania. The aim of the study programme is to train a measurement engineering specialist with professional knowledge and understanding of the measurements made on the surface of the earth and capable of applying that knowledge during the preparation of plans for various purposes as well as construction projects through the application of advanced technologies for the geodetic measurements and processing of measurement results (SER p. 5, item 11). In addition, the objective of the study programme is to train a creatively thinking specialist, who is able to work in a team, make decisions independently, responsible for his own performance results and seeks the improvement in professional activity. Study objectives of the programme cover the trends of study activities that ensure further studies of graduates at higher level of studies. These are based on the requirements for specialists of Engineering study field, as established by the TUNING-AHELO framework in the results of engineering studies, provisions of the latest edition of Law on Geodesy and Cartography of the Republic of Lithuania (No. XI-786, 11/05/2010).

The learning outcomes of the study programme are split into the knowledge, its application, the ability to conduct the research, and special, social and personal skills (SER, p. 7). Programme aims and learning outcomes are clearly defined (SER p. 8), whereas generalized learning outcomes are publicly accessible in website (www.vtdko.lt) both in Lithuanian and English languages. Objectives and learning outcomes of the study programme Geodesy and Cadastre are prepared in accordance with legal documents (SER, p.5). The review team was also informed that definition of aims and learning outcomes of the study programme will be revised by 1st of June 2016 to correspond to the general engineering study field descriptors in the EUR-ACE framework standards for the accreditation of engineering programmes.

The study programme graduates are supposed to carry out geodetic measurements in the construction area, to develop geodetic plans for engineering networks, to prepare the real estate cadastre data, to know the remote sensing and measurement methods.

Final theses are prepared based on the topic chosen by the student and coordinated at the department according to the requirements of Ministry of Education and Science (SER, page 12). During the visit, the review team noticed deviations of thesis from formal requirements¹. For

¹ <http://www.vtdko.lt/index.php/studentams/sf/dokumentai>

instance the annotations in the English language do not contain the title of thesis. It is also suggested that the annotations both in Lithuanian and English languages would be a little longer (i.e. shorter than the formal requirement for the abstract length is 1 page minimum). However, the topics of thesis are relevant and up-to-date, the problems are analysed thoroughly, presentation of the results and formulation of conclusions are appropriate, foreign literature has been used.

Although the programme aims and learning outcomes are well formulated, students and social partners want the programme to contain more practice and also longer practice sessions. Social partners also expressed the programme students need to possess more knowledge in 3D scanning and data processing methods, design documentation and buildings construction.

2.2. Curriculum design

The curriculum design meets all legal requirements. Study programme is being implemented only in full-time mode in 3 years. The scope of study programme - 180 ECTS. Study subjects are arranged in 6 semesters, duration of each semester is 20 weeks. Amount of general college subjects of study programme is 15 credits; 135 credits are allocated for study subjects of study field; 30 credits are allocated for special study subjects and optional subjects (SER, 10). Scope of professional practices 30 credits and final thesis (12 ECTS) in credits meets the requirements of the legislation (SER p. 10). The studies comprise contact and individual work, professional practices and consultations. Students' individual studies comprises 50.3%, and the contact hours 49.7% of total. The studies of each subject are completed with an examination or the evaluation of student's individual work (project).

The detailed descriptions of the study subjects are presented in Annex 1 and it shows that the study programme comprises courses distributed continuously and in logical sequence during the studies. The meeting with college teachers revealed that the methods of the subjects taught are miscellaneous: problem training, case analysis methods, brainstorming, task-solving methods; students carry out practical works individually and in groups, discussions, educational visits to companies are organized as well.

Study programme plan is designed so that students can learn the disciplines consistently and gradually reach study results. However, it was noted that the study programme plan is misleading as it is difficult to understand the total number of professional practice hours. There is no description for the Precision geodetic measurements practice, in annex 1 of subject description, as a separate subject. During the visit, the review team also queried whether 4 weeks for the Final practice is enough for students. On the other hand there are also indications that Final practice amount of 6

ECTS credits is not sufficient. Also students admitted that they would like to have longer practice in the enterprises. The inclusion of natural science subjects, e.g. chemistry, among fundamental study subjects was strongly criticized. The review team saw no relevance for chemistry subject in Geodesy and Cadastre study programme. Lecturers of physics and mathematics adapt their subjects for geodesy students.

Although the curriculum design seems to be good, alumni and social partners offer to introduce to the programme more practice and to start practical works in the company from 2nd year. Social partners also expressed the need of more knowledge in cadastral measurements. Taking into account the recommendations of social partners, the subject Geodetic instruments and Photogrammetry are supplemented with new topics, considering the latest scientific and technological achievements.

The scope of the programme is sufficient to achieve the expected learning outcomes. The content of the subjects of the study programme is updated according to the development of modern geodetic instruments and specialized software used in measurement engineering and reflects the latest developments in science and technology (such as 3D laser scanners and unmanned aerial vehicles). However, the variety of optional subjects for deepening of the specialty subject knowledge for the students is inconsiderable.

2.3. Teaching staff

The qualification of the study programme teachers meets the legal requirements (SER, p.12). The composition of the staff consists of 2 associate professors (PhD degree), 19 lectures and 1 assistant, with Master degree (or equivalent). During the analysed period, 22 teachers of which 85% have at least 3 years of practical experience, and 14% - a science degree. The turnover of program staff is relatively stable. For example, 20 teachers were employed in 2013 - 2014, while in 2014-2015 - 22 teachers. Also, practitioners with extensive experience are invited to lecture within the frames of Geodesy, Topography, GIS subjects, occasionally they also organise practical activities of geodetic measurements for students (SER, p. 15).

35% of the study programme teachers are 31 - 45 years old. The ratio of the teachers and students is optimal, i.e., about 22 students per lecturer on average (SER, p.13, table 7). The pedagogical workload of teachers consists of 1548 hours. Every component of the pedagogical workload is assigned a certain percentage: classroom work constitutes no more than 50% of pedagogical workload, elements of part-time study mode, applied artistic activities constitute 15%, and methodological activities, organizational work and qualification development are given 10% of

pedagogical workload each. During the visit of review team, the teachers confirmed that the majority of teachers work full-time. Workload of teachers complies with the requirements, established in the relevant legislation (SER, p. 17).

Teachers report on their academic activity results annually, i.e. applied scientific, methodical and organizational activities as well as their contribution to the study process and quality assurance. Internal and external search methods are used to fill academic vacancies. Information about job vacancies is published in the press and on-line (SER, p. 12). The qualification requirements for the position of teachers are set forth in the documents approved by the college Academic Council. Teachers of the study programme carry out applied research that is directly related to the study programme. The research results were integrated into the following subjects: Higher Geodesy, Cartography, and Applied Geodesy. Teachers published their articles in peer-reviewed scientific journals (SER p.13, table 8): in 2012-2013 - 6 publications; however, in 2014-2015 there was a significant decrease - only 3 publications. In 2012-2015, teachers have published their articles in various indexed scientific periodicals: in database of the Institute for Scientific Information (ISI) (4), in international databases used for reference and approved by the Lithuanian Research Council (2), in reviewed periodical research publications and collections in Lithuania (4), in other international databases used for reference and reporting material in international research conferences (2).

The college provides the teachers of department the possibility of improvement their educational, professional and scientific qualification. All teachers constantly update their qualification, participate in conferences, seminars and improve their qualifications during the internships at business companies associated with the measurement engineering, during which the knowledge and experience are adapted to the preparation of new self-study tasks, ensuring the achievements in subjects (SER, p. 16). The mobility of teachers is sufficient. In the period of 2012-2015 (annually) 3 teachers took opportunity to participate in Erasmus+ mobility programme. Geodesy department cooperates closely with foreign educational institutions: for example, altogether 10 incoming teachers arrived (in 2012-2015) from universities and colleges of Latvia, Finland, Estonia and Bulgaria (SER p. 15, table 9). The results of international cooperation are outlined: professional competences and English language skills have been improved, international relations with foreign partners have been established and a Nord Plus project is being implemented during 2011-2015 year period (SER, p. 14). There are ongoing joint research and projects with Tallinn University of Applied Sciences, Riga Construction College and Helsinki University of Applied Sciences (SER, p.14). Relations with national higher educational institutions and other establishments seem also quite close.

2.4. Facilities and learning resources

According to the information provided in the SER (page 18, table 12) and on-site visit, the 18 auditoriums and 3 laboratories are adequate in number, size and quality and fully meet the study programme needs. However, the main building is not adapted for the disabled people, thus such (potential) students may experience difficulties with moving around. Professional practices are carried out in the laboratories of the college and in the survey base that is located nearby to the college. Students use modern technical devices for geodetic measurements: GPS receivers (2 pieces), robotic electronic tachymeter with integrated GPS system (1 piece), electronic total stations (19 pieces), automatic levelling devices (7 pieces), optical levelling devices (9 pieces), digital levelling devices (4 pieces), digital photo cameras (2 pieces), laser distance measurer and etc (SER, p. 20). Geodetic equipment is sufficient for laboratory studies and exercises. Also students are divided into small workgroups for solving practical assignments. Final professional practice (6 credits) is held in the company selected during the VI semester and using the equipment of the company. Students are satisfied about their study practice. Students confirmed, that can have their practice in state and private enterprises (within the field of topography, geodesy, cadastre of real estate, construction companies, municipalities, land management services, etc). The visit of review team revealed that appropriate software is used in the study process, and the number of computers and programmes is sufficient.

The library of the Civil Engineering Faculty is small but sufficient. The students can use the periodicals in the reading room of the library, read the database in the reading room online or in their personal computer. It is easy to connect to electronic learning resource remotely from home. The electronic library proposed books to students and some of these books are quite old (e.g. Photogrammetry latest books in 2008; Real estate cadastre - in 2008) and Remote sensing books are missing. The professional literature should be updated because most of the subjects of the study programme deal with rapidly changing technology. Library is equipped with computer-based workstations, reading room for teamwork, and printing and copying services are provided as well. During the meeting with students almost all of them expressed their satisfaction for all the facilities and learning resources they have.

Students can read subscribed e-books, about 20 thousand scientific articles, and other publications from 4 international subscription databases (EBSCO Publishing, Taylor&Francis, Emerald Management, Credo Online References Service). College library subscribes to 15 Geodesy and

Cadastre professional e-books. Instructions on using such books are provided on the Internet site of the library.

Teachers of the study programme have prepared educational books, lecture compendiums, recommendations how to prepare course papers. Methodological publications and methodological tools are placed in Moodle system. However, only 15 subjects from 38 subjects have developed methodological tools applied to the Moodle environment. Moreover, there are not any methodological tools in the Moodle environment prepared in English for the incoming Erasmus exchange students.

2.5. Study process and students' performance assessment

The admission requirements are well-founded. The admission to the programme is realised according to the Rules of Admission to the First Cycle and Integrated Studies at Lithuanian Higher Education. All required information (admission rules, requirements and etc.) is available in the college web site in both – Lithuanian and English.

The number of admitted students has increased during three year period from 2012 to 2015. The highest number of admitted students was 47 in 2014/2015 study period. 55,6% students who entered the college in 2012 has successfully graduated study programme. An analysis of student's dropout reasons showed that most of students leave study programme at the first year of studies (SER p. 22, table 15 and 16). However, the dropout rate has decreased from 24 students in 2012/2013 to 15 in 2014/2015 study period (SER p. 28, table 18). According to students' opinion, persons leave this study programme because of their own will, for example, to study different speciality. Also, students stated that this study programme requires good knowledge and preparation of mathematics and technological sciences and not all students are sufficiently prepared to study exact sciences. College use various methods to help students to stay at their studies: teachers schedule individual consultations for weaker students, working students are provided with the possibility to study according to individual plan. Also, if students have financial difficulties they are allowed to pay for their studies in parts (SER, p. 26).

Students are satisfied with the study process and their study programme in general. They are allowed to study on an individual study plan and reconcile their work and studies schedules. They feel satisfied about practice work coordination, the amount of measuring equipment is sufficient. It is easy to contact teachers and discuss study problems encountered. Students have comfortable access to libraries, computer rooms, laboratories and electronic learning materials and feel motivated to study. Also, by filling in questionnaires they give a feedback about the quality of the

study programme every semester. Motivation scholarship after the end of the semester of studies may be granted to the students with the best marks. Students have possibility to use state-supported loans. Students are consulted about career prospects. Also, college provides opportunities for physical education to strengthen students' health.

Students are given the opportunity to take part in applied research, using equipment available at the college and collaborating enterprises. Recently 4 students participated in research projects, made presentations in national and international conferences and two students teams took part in professional competitions (SER p. 23). However, the number of students involved in the applied research is small.

Student's participation in mobility programmes is sufficient. College has come into Erasmus exchange agreements with higher education schools in Europe: Spain, Turkey, Portugal, Finland, Estonia, Latvia and Bulgaria. 16 students of the study programme took the opportunity to study abroad during the 2012/2015 year period (SER p. 23, table 17). As was confirmed during the meeting with students, there was only one case when study credits from studies abroad did not match the study programme in the college. Also, 26 foreign exchange students came to study at this study programme since 2012 to 2015 (SER, p. 23-24). College is teaching courses in English for foreign students, but not for Lithuanian students, so some courses could be taught only in English to promote Lithuanian students cooperation with international students.

Professional activities of the majority of graduates meet the programme providers' expectations. However, the first group of students were admitted to college in 2012/2013 year of studies, so there was only the first generation of graduates meeting the review team. In 2015 there were 25 graduates from this study programme, 4% of them continue their studies at the university and 72% were employed.

2.6. Programme management

Responsibilities for decisions and monitoring of the implementation of the programme are clearly allocated. According to the information provided in the SER (p. 27), the supreme academic self-governance institution of the department is the Faculty Council, which submits the proposals on the implementation of study programme to the Academic Council, evaluates the activities of departments, quality of studies and applied research. Geodesy and Cadastre study programme committee consists of representatives of the university, representatives of college, social partners and students. It is responsible for the update of study programme, quality and improvement. Study programme committee submits proposals to the dean on the development of new subjects of study

programme or their improvement. Dean initiates discussions on the changes in study programme and their approval in the Faculty Council. Modified study programme is submitted to the Academic Council of College for approval. The tools for monitoring and improvement of the implementation of study programme are explained in the SER: surveys of students and academic staff, roundtable discussions, structured interviews with social partners, analysis of achieved learning outcomes, etc.

Students express their opinion on the study programme, its implementation and updates through Students' Agency, its representatives in the Study Programme Committee, faculty council and Academic Council (SER, page 27). Reviewed students mentioned that each study semester an anonymous questionnaire online is delivered out, where they express their opinion on the usefulness and applicability of the subject under evaluation and quality of teaching. The teachers are informed about student's surveys results and they make updates to their subjects.

The evaluation and improvement processes involve stakeholders. The visit of review team revealed that social partners are invited to give lectures, participate in the work of the qualifying commission on theses, review the theses and lead the professional practices. The major partners are UAB HNIT-Baltic and UAB "TPI Vilnius", whose experts demonstrate students the latest geodetic devices, software and 3D laser scanner. Support of social partners ensures the quality studies to students, constantly provides them with updated information on the most modern measurement technology, software and enables them to acquire practical skills. However, social partners should be more involved in programme quality assurance in a formal way, for example, by filling in the questionnaires, holding the round-table discussions, analysing the survey results, proposals, and recommendations and initiating solutions with a view of continuous update of the programme.

III. RECOMMENDATIONS

1. Re-assess the relevance of the Chemistry subject for the study programme aims.
2. Students and teachers should be much more involved into scientific applied research activity.
3. To consider the opinion of students and to increase the number of credits for the subject The Final Practice, by possibly extending the duration of the The Final Practice of Professional Activity.
4. Improving the quality of the final theses by enforcing fulfilment of all requirements for theses compilation.
5. Preparation methodological tools for study subjects should be applied for Moodle environment and extends the international learning environment.
6. Consider teaching some courses only in English to promote Lithuanian students to cooperate with international students.
7. Social partners should be more intensively involved in formal way by programme management.

IV. SUMMARY

Objectives and learning outcomes of the programme are clearly defined. The aim of the study programme is based on the requirements for specialists of Engineering study field, as established by the TUNING-AHELO framework in the results of engineering studies. The aims and learning outcomes of the study programme will be revised according to the general engineering study field descriptor following EUR-ACE framework standards for the accreditation of engineering programmes. Programme aims and learning outcomes are clearly defined, whereas generalized learning outcomes are publicly accessible in website (www.vtdko.lt) both in Lithuanian and English languages. Employers are very satisfied with the study programme; in particular, because the students are well prepared for the practical work, but compared with the university students the college students lack the relevant to the profession legal knowledge. The final theses are well written but some theses abstracts appeared to be too short and topic titles in the English language were entirely missing.

Study programme structure meets general requirements for the college study programmes. Although the curriculum is well-balanced, and includes the most important areas of the programme, it should be noted that chemistry is no need in Geodesy and Cadastre study programme. Also students admitted that they would like to have longer practice in the enterprises. Students and social partners also expressed the need to have more practice and also longer practice sessions.

Study programme teachers are competent, motivated, having experience in pedagogical and practical industrial work and their qualifications meet the requirements of the legislation. The ratio of study programme students and the teachers is optimal. The college provides the teachers of department with the possibility of improvement their educational, professional and scientific qualification. The teachers are constantly improving their skills and participating in seminars and international exchange programmes. The number of incoming teachers is high enough. There is a strong international cooperation with foreign universities and colleges, as well as they participate in research projects. However, teachers are not sufficiently involved in scientific activities. More research projects should be carried out and their results should be published as well.

The library, lecture halls and laboratories are well-equipped and provided with modern equipment and provide good opportunities for the students to achieve the learning outcomes. During the practice and workshops, the students use modern geodetic measurement equipment. Geodetic equipment are sufficient for laboratory studies and exercises. Also students are divided into small workgroups for solving practical assignments. Final professional practice is held in the public and private companies, involved in the topography, geodesy, cadastre of real estate, land management

and other works. The library of the Civil Engineering Faculty is small but sufficient. The fund of the library, subscription databases, the number of publications and methodological tools is sufficient for the studies. Some literature recommended to students is obsolete. In some cases relevant literature could be easily updated, such as the basic textbooks have a corrected and partly extended new edition, which could substitute the presently recommended old edition. The students and lecturers can use international databases and electronic catalogues from home. The opportunities for distance learning are not developed enough, because the methodological tools of just a few subjects have been adapted to Moodle environment generalize this statement. However, the main building is not adapted for the disabled people, thus such (potential) students may experience difficulties with moving around.

The admission requirements of the programme are clearly explained. The number of entrants to this study programme remains stable each year during the reporting period. The students are satisfied with the study process and their study programme in general. College students are provided with academic and social support. Also, if students have financial difficulties they are allowed to pay for their studies in parts. Insufficient preparation of 1st year students for College studies, lack of motivation which influence the drop-out of students. Students are consulted about career opportunities. The college provides good conditions for the students to participate in cultural and sports activities. Student's participation in mobility programmes is sufficient. However, the number of students involved in the applied research is small. The high school is teaching courses in English for foreign students, but not for Lithuanian students. According to data provided, up to 72% of students were employed.

Responsibilities for decisions and monitoring of the implementation of the study programme are clearly allocated. The committee on Geodesy and Cadastre study programme is responsible for the update and monitoring of the study programme in accordance with the documents regulating the College activities. The quality of study programme is evaluated by the lecturers and students on annual basis. Overall, the monitoring programme seems to be good, whereas social partners should be more involved in programme quality assurance in a formal way, for example, by filling in the questionnaires, holding the round-table discussions, analysing the survey results, proposals, and recommendations and initiating solutions with a view of continuous update of the programme.

V. GENERAL ASSESSMENT

The study programme *Geodesy and Cadastre* (state code – 653H14007) at Vilnius College of Technologies and Design is given **positive** evaluation.

Study programme assessment in points by evaluation areas.

No.	Evaluation Area	Evaluation of an area in points*
1.	Programme aims and learning outcomes	3
2.	Curriculum design	3
3.	Teaching staff	3
4.	Facilities and learning resources	3
5.	Study process and students' performance assessment	3
6.	Programme management	3
	Total:	18

*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.

Grupės vadovas: Team leader:	Prof. Dr. Bernd Teichert
Grupės nariai: Team members:	Prof. Dr. Artu Ellmann
	Assoc. Prof. Eloina Coll Aliaga
	Ms Vytautė Juodkienė
	Mr. Audrius Petkevičius
	Ms Neringa Vaičiūnaitė

**VILNIAUS TECHNOLOGIJŲ IR DIZAINO KOLEGIJOS
PIRMOSIOS PAKOPOS STUDIJŲ PROGRAMOS *GEODEZIJA IR KADASTRAS*
(VALSTYBINIS KODAS – 653H14007)
2016-07-07 EKSPERTINIO VERTINIMO IŠVADŲ NR. SV4-162 IŠRAŠAS**

<...>

V. APIBENDRINAMASIS ĮVERTINIMAS

Vilniaus technologijų ir dizaino kolegijos studijų programa *Geodezija ir kadastras* (valstybinis kodas – 653H14007) vertinama **teigiamai**.

Eil. Nr.	Vertinimo sritis	Srities įvertinimas, balais*
1.	Programos tikslai ir numatomi studijų rezultatai	3
2.	Programos sandara	3
3.	Personalas	3
4.	Materialieji ištekliai	3
5.	Studijų eiga ir jos vertinimas	3
6.	Programos vadyba	4
	Iš viso:	18

* 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)

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IV. SANTRAUKA

Studijų programos *Geodezija ir kadastras* tikslai ir numatomi studijų rezultatai yra apibrėžti, aiškūs. Programos tikslas yra pagrįstas inžinerijos studijų krypties specialistams keliamais reikalavimais, kaip nustatyta TUNING-AHELO gairėse dėl inžinerijos studijų rezultatų. Šios studijų programos tikslai ir numatomi studijų rezultatai bus persvarstyti atsižvelgiant į bendrosios inžinerijos studijų krypties aprašą, parengtą pagal EUR-ACE gairėse nustatytus inžinerinių studijų programų akreditavimo standartus. Apibendrinti studijų rezultatai yra viešai prieinami interneto svetainėje (www.vtdko.lt) lietuvių ir anglų kalbomis. Darbdaviai yra labai patenkinti šia studijų programa, ypač dėl to, kad studentai gerai parengiami praktiniam darbui; bet, palyginti su universiteto studentais, kolegijos studentams trūksta šiai profesijai reikalingų teisinių žinių. Baigiamieji darbai

parašyti gerai, tačiau kai kurių darbų anotacijos per trumpos, be to, visiškai nenurodyti temų pavadinimai anglų kalba.

Studijų programos sandara atitinka kolegijų studijų programoms keliamus bendruosius reikalavimus. Nors studijų turinys gerai subalansuotas ir apima svarbiausias programos sritis, reikėtų pažymėti, kad chemijos dalykas studijuojant *Geodeziją ir kadastrą* nereikalingas. Be to, studentai pripažino norintys ilgesnės praktikos įmonėse. Studentai ir socialiniai partneriai taip pat nurodė, kad jiems reikia daugiau praktikos ir ilgesnių praktikos užsiėmimų.

Šios studijų programos dėstytojai yra kompetentingi, motyvuoti, turintys pedagoginės ir praktinio darbo pramonės sektoriuje patirties, jų kvalifikacija atitinka teisės aktų reikalavimus. Programos studentų ir dėstytojų santykis optimalus. Katedros dėstytojams kolegija užtikrina galimybę didinti savo pedagoginę, profesinę ir mokslinę kvalifikaciją. Dėstytojai nuolat tobulina savo gebėjimus ir dalyvauja seminaruose bei tarptautinių mainų programose. Gana didelis atvykstančių dėstytojų skaičius. Stiprūs tarptautinio bendradarbiavimo su užsienio universitetais ir kolegijos ryšiai, be to, dėstytojai dalyvauja mokslinių tyrimų projektuose. Vis dėlto jie nepakankamai įsitraukę į mokslinę veiklą. Turėtų būti vykdoma daugiau mokslinių tyrimų projektų, o jų rezultatai skelbiami.

Biblioteka, auditorijos ir laboratorijos gerai įrengtos ir aprūpintos šiuolaikine įranga, tad studentams užtikrinamos geros galimybės siekti numatomų studijų rezultatų. Per praktiką ir seminarus studentai naudojami modernia geodezinių matavimų įranga. Geodezinės įrangos laboratorinėms studijoms ir pratyboms pakanka. Be to, studentai yra paskirstomi į mažas darbo grupes, kuriose sprendžia praktines užduotis. Baigiamoji profesinė praktika vyksta valstybinėse ir privačiose įmonėse, susijusiose su topografijos, geodezijos, nekilnojamojo turto kadastro, žemėtvarkos ir kitais darbais. Civilinės inžinerijos fakulteto biblioteka yra maža, bet jos pakanka. Bibliotekos fondo, prenumeruojamų duomenų bazių, publikacijų ir metodinių priemonių studijoms pakanka. Kai kuri studentams rekomenduojama literatūra yra pasenusi. Kai kurių aktualią literatūrą būtų galima nesunkiai atnaujinti, pavyzdžiui, yra naujos pataisytos ir iš dalies papildytos pagrindinių vadovėlių laidos, tad senieji leidiniai galėtų būti pakeisti šiais vadovėliais. Studentai ir dėstytojai gali naudotis tarptautinėmis duomenų bazėmis ir elektroniniais katalogais būdami namie. Nuotolinio mokymosi galimybės dar nepakankamai išstobulintos, nes *Moodle* aplinkai pritaikytos tik kelių dalykų metodinės priemonės. Pagrindinis pastatas nepritaikytas žmonėms su negalia, taigi kai kurie studentai gali patirti judėjimo jame sunkumų.

Priėmimo į šią studijų programą reikalavimai aiškiai apibrėžti. Stojančiųjų į ją skaičius kiekvienais šio ataskaitinio laikotarpio metais išlieka stabilus. Studentus tenkina studijų eiga ir ši studijų

programa apskritai. Kolegijos studentams teikiama akademinė ir socialinė pagalba. Be to, jei studentai turi finansinių sunkumų, už studijas jiems leidžiama mokėti dalimis. Nepakankamas pirmakursių pasirengimas studijoms kolegijoje, motyvacijos stoka turi įtakos studentų nubyrejimui. Studentai yra konsultuojami apie karjeros galimybes. Kolegija užtikrina studentams geras sąlygas dalyvauti kultūros ir sporto veiklose. Studentai pakankamai dalyvauja judumo programose, tačiau mažai jų atlieka taikomuosius mokslinius tyrimus. Kolegijoje dėstomi dalykai anglų kalba užsienio studentams, bet Lietuvos studentams nedėstomi. Pagal pateiktus duomenis iki 72 proc. studentų dirbo.

Atsakomybė už sprendimus ir už šios studijų programos įgyvendinimo stebėseną aiškiai paskirstyta. Remiantis kolegijos veiklą reglamentuojančiais dokumentais už studijų programos atnaujinimą ir stebėseną yra atsakingas studijų programos *Geodezija ir kadastras* komitetas. Dėstytojai ir studentai kiekvienais metais įvertina studijų programos kokybę. Apskritai atrodo, kad stebėsenos programa yra gera, o socialiniai partneriai turėtų būti įtraukti į programos kokybės užtikrinimo procesą formaliai, pavyzdžiui, pildydami klausimynus, dalyvaudami apvalaus stalo diskusijose, analizuodami apklausų rezultatus, pasiūlymus ir rekomendacijas bei inicijuodami pasiūlymus, siekiant, kad studijų programa būtų nuolat atnaujinama.

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III. REKOMENDACIJOS

1. Dar kartą apvarstyti, ar chemijos dalykas yra svarbus, norint pasiekti studijų programos *Geodezija ir kadastras* tikslus.
2. Studentai ir dėstytojai turėtų aktyviau dalyvauti mokslo taikomojoje veikloje.
3. Apsvarstyti studentų nuomonę ir padidinti *Baigiamosios praktikos* dalyko kreditų skaičių galbūt pratęsiant *Profesinės veiklos galutinės praktikos* trukmę.
4. Pagerinti baigiamųjų darbų kokybę užtikrinant, kad būtų laikomasi visų baigiamųjų darbų rengimui keliamų reikalavimų.
5. Parengtos studijų dalykų priemonės turėtų būti pritaikytos *Moodle* aplinkai ir tarptautinei mokymosi aplinkai.
6. Apsvarstyti galimybę kai kuriuos dalykus dėstyti tik anglų kalba taip skatinant Lietuvos studentų bendradarbiavimą su tarptautiniais studentais.

7. Programos vadovybė turėtų pasirūpinti, kad socialinių partnerių įtraukimas į šios studijų programos kokybės užtikrinimo procesą būtų labiau formalizuotas.

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